Economic Development & Innovation

EEP 07

UTA

Initiative

Position the DFW region as a leader in sustainability and innovation

LEAD: Office of Research & Innovation
with support from the Office of Sustainability

Definition

The economic development strategy focuses on fostering leadership in the green jobs market through collaboration with local businesses. This involves identifying problems that campus research can help solve, offering hands-on learning experiences and capstone opportunities for the students, and connecting startups with UTA researchers. Sustainability plans often drive investment in clean energy technologies, carbon capture and storage, sustainable agriculture, and other areas. This can stimulate academic research in engineering, materials science, biology, and other fields aimed at developing innovative technologies to address climate change.

Resilience Co-benefits

- Grows Green Jobs & Opportunities
- Builds Community Connections
- Fosters a Culture of Sustainability
- Establishes UTA as a Regional Leader

Research Excellence and Innovation

UTA's position as an R1 research institution, particularly its strengths in life sciences and engineering, creates unique opportunities for driving sustainable innovation. The University has established itself as a leader in several key areas:

Engineering and Technology

- Electrical engineering expertise supporting grid modernization
- Advanced materials research advancing battery storage technology
- Systems integration work supporting legacy infrastructure updates

Life Sciences and Community Health

- Research connecting environmental quality with public health outcomes
- Development of sustainable urban systems
- Integration of health considerations into infrastructure planning

Sustainable Urban Design

Through CAPPA (College of Architecture, Planning, and Public Affairs), UTA provides expertise in sustainable urban development and resilient infrastructure design. This knowledge base proves particularly valuable as the region experiences rapid growth and development.

Texas Energy Leadership

The Dallas-Fort Worth metroplex stands at the forefront of Texas' transition toward a more sustainable economy. As of 2022, Texas supported 936,476 energy sector jobs — representing 11.5% of all U.S. energy employment — with an increasing share in renewable and clean energy technologies. [19] The state ranks second nationally in clean energy jobs across a broad spectrum including renewable technologies, nuclear power generation, microgrids, grid modernization, energy storage, biofuels, electric vehicles, and energy efficiency.[20]

Texas' leadership in renewable energy is particularly noteworthy. In 2023, renewable sources accounted for nearly 30% of total state electricity generation, with Texas holding several national distinctions, including the following:

- The nation's leading producer of wind energy, generating 30% of total U.S. wind power
- Second highest solar energy producer behind California
- Overall contribution of nearly 31% to total U.S. renewable energy production (including solar, geothermal, and wind)[21]

19 2023 US Energy and Employment Report, Texas

20 2023 US Energy and Employment Report, Appendix A

21 2024 US Energy Information Administration, Texas State Profile and Energy Estimates

Campus as Innovation Hub

UTA's campus infrastructure itself represents a valuable asset for advancing sustainable technology. The University's diverse building portfolio, energy systems, and operational needs create natural opportunities for:

- Testing and validating new technologies
- Generating real-world performance data
- Demonstrating integrated sustainable systems
- Supporting utility partner research through advanced metering
- Providing hands-on learning opportunities

UTA as an Economic Engine

The University of Texas at Arlington serves as a major catalyst for regional economic development through multiple channels. As one of the region's largest employers, UTA directly contributes to the local economy through its operational spending, employment, and procurement practices. More significantly, the university's role in workforce development helps supply the skilled professionals needed to support the region's growing sustainable technology sector.

Regional Momentum

The Dallas-Fort Worth region has demonstrated increasing commitment to sustainability leadership, exemplified by DFW International Airport becoming North America's first carbon-neutral airport. This achievement, along with other regional initiatives, positions North Texas as an emerging hub for sustainable development. The region's rapid growth and upcoming major events provide opportunities to showcase sustainable development at scale.

This comprehensive foundation positions UTA to expand its role as both an economic driver and innovation catalyst for sustainable development across North Texas.

RESEARCH INNOVATION

UTA has the potential to establish national leadership in specific sustainability domains by strategically focusing its research investments and faculty recruitment.

FACULTY LEADERSHIP

Targeted faculty recruitment and comprehensive research support infrastructure can strengthen UTA's position as a leader in sustainability.

CAMPUS INNOVATION

UTA students and faculty can test new technologies, generate research data, provide hands-on learning experiences by transforming the campus into a living laboratory.

ECONOMIC DEVELOPMENT

Workforce development programs and technology commercialization initiatives aligned with industry needs can support regional economic growth.

REGIONAL PARTNERSHIPS

Fostering partnerships through professional accreditation programming and local industry can identify opportunities for joint research, demonstration projects, and shared facilities.

Research Innovation

UTA has the potential to establish national leadership in specific sustainability domains by strategically focusing its research investments and faculty recruitment.

Energy Storage and Grid Innovation

By building upon existing electrical engineering strengths, UTA can help to advance battery technology research and develop smart grid solutions. There is opportunity to support pilot programming of new technologies through partnerships with regional utilities.

Urban Resilience Technology

There is potential to leverage CAPPA's expertise in urban planning to help develop climate-adaptive infrastructure solutions, create integrated building management systems, and advance urban heat mitigation strategies.

Smart Systems Integration

Combining Internet of Things (IoT) technology and advanced metering into infrastructure management can help to optimize overall performance by supporting data-driven decision making and create predictive maintenance systems.

Faculty Leadership

Strategic Recruitment

UTA can strengthen its position as a sustainability leader through targeted faculty recruitment focusing on supporting emerging leaders in fields such as renewable energy systems, sustainable infrastructure development, urban climate adaptation, and amplifying the work of researchers who are bridging technology and community health.

Research Support

To attract and retain leading researchers, UTA can create dedicated sustainability research centers, develop specialized laboratory facilities, establish seed funding programs for sustainability research, and build industry partnership programs.

Campus Innovation

Living Laboratory Implementation

UTA's campus offers unique opportunities to test new technologies in real-world conditions, generate performance data for research, demonstrate integrated sustainable systems, and support utility partner research through advanced metering, all while providing hands-on learning experiences for students.

Economic Development

Workforce Development

Supporting regional economic growth can be done by offering continuing education programs for working professionals and offering technical training partnerships with local businesses. Further, providing professional certification programs in sustainable technologies and having industry-aligned curriculum can help students be better prepared to enter the workforce upon graduation.

Technology Commercialization

Opportunities to accelerate innovation include programs for industry partnerships and startup incubation focused on sustainable technologies, living laboratory demonstrations, and supporting enhanced technology transfer.

Regional Partnerships

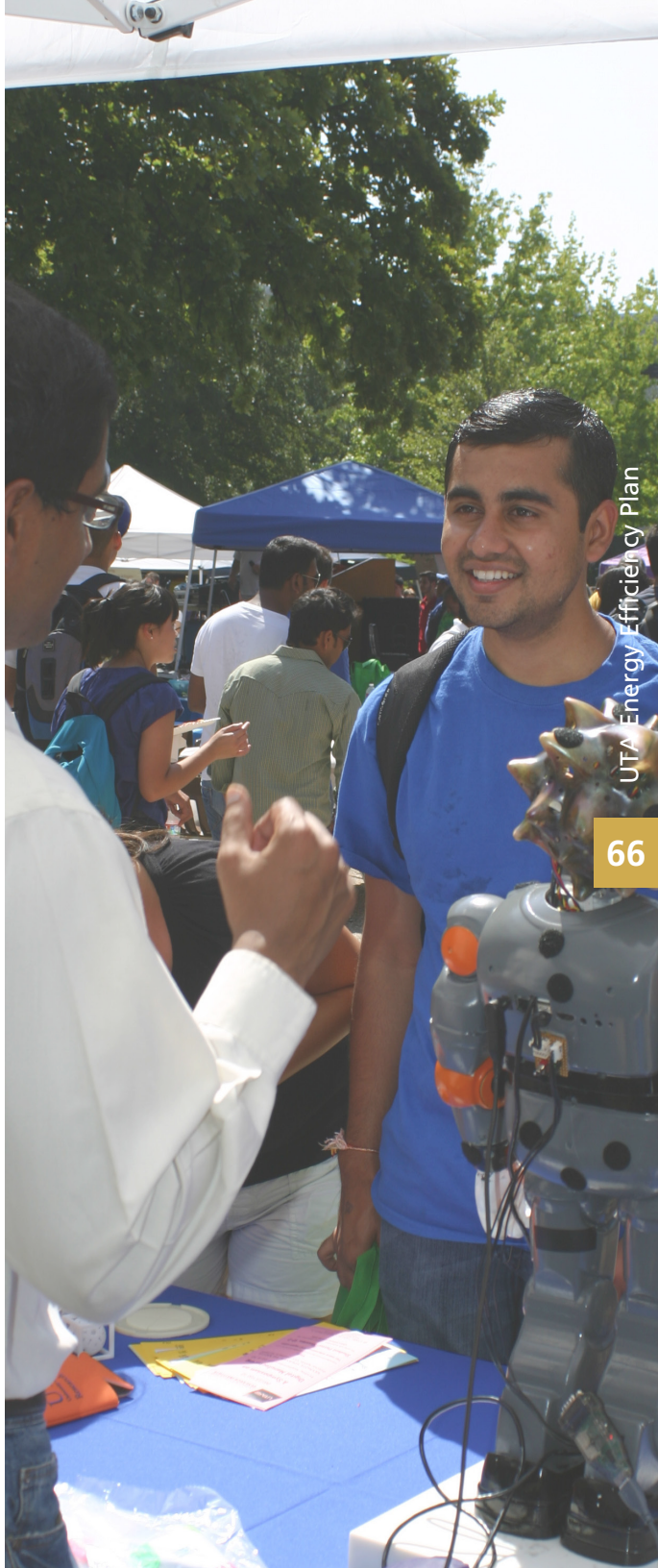
Professional Accreditation

UTA can establish itself as a regional training hub by developing sustainability-focused professional credentials and creating industry-recognized certification programs, as well as offering specialized technical training and partnering with professional organizations.

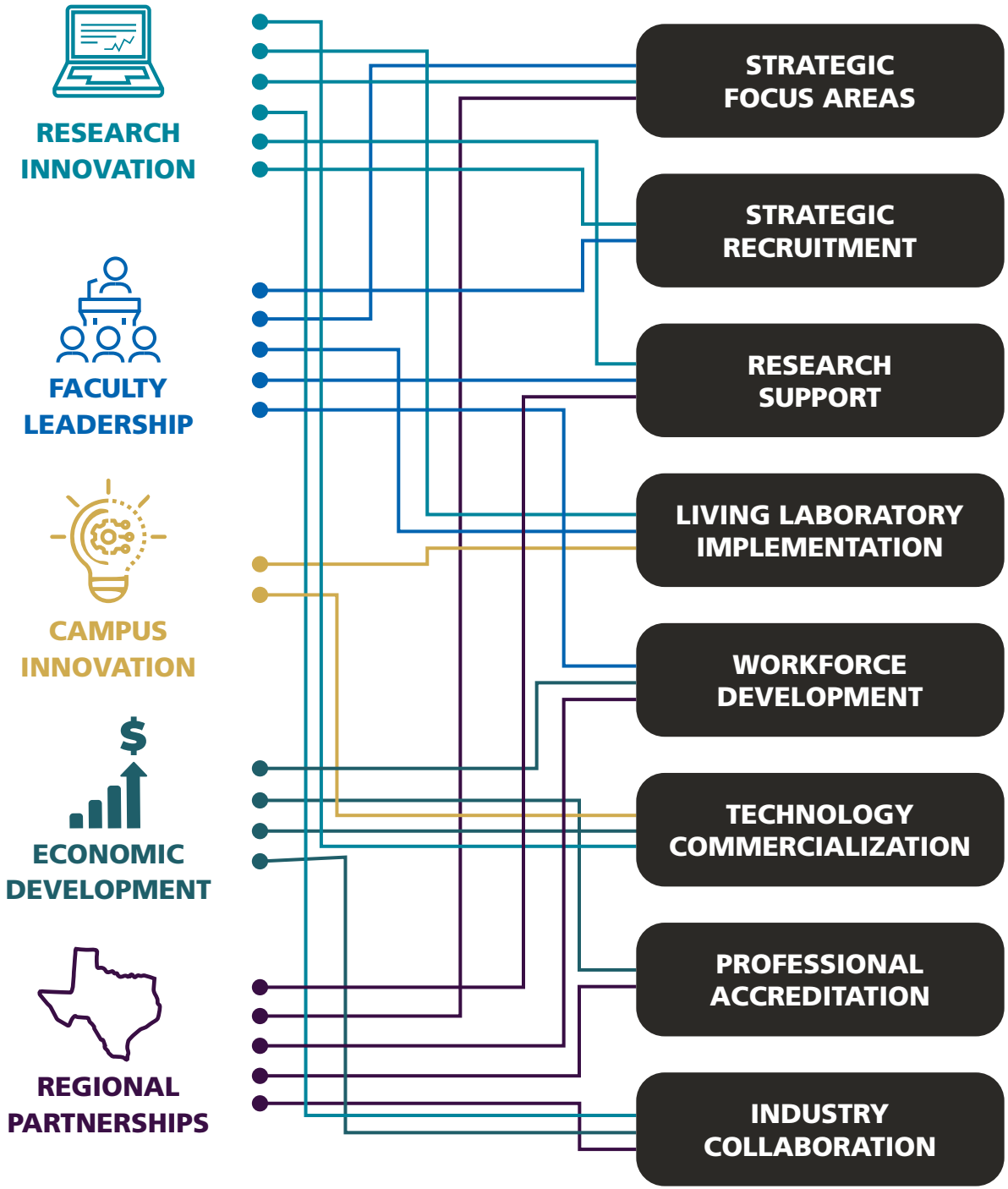
Industry Collaboration

Key partnership opportunities include regional utility providers and technology companies where UTA can support joint research, demonstration projects, and provide shared testing and validation facilities. Strong partnerships can make it easier to pursue collaborative proposals, allowing for a greater chance of securing funding for further research and equipment.

Source: UTA Research Institute



These opportunities represent a holistic approach to achieving UTA's major goals



Establish Green Tech Network

ACTION ITEMS 2

Identify faculty to foster research within Green Technology

Identify collaboration opportunities for green technology transfer and commercialization

Develop partnerships for infrastructure modernization training utilizing UTA courses

ACTION ITEMS 3

Create a professional learning opportunity/ program for existing professionals to benefit from UTA's sustainable offerings

Leverage the cluster hire initiative to drive a sector of research that is focused, across disciplines, on forwarding research around sustainability

Develop administrative capacities to pursue grants in these fields

Encourage leadership in the green jobs market

ACTION ITEMS 5

Connect with local businesses to identify problems that campus research could help solve

Identify target areas for sustainability to further grant-funded research

Collaborate on sustainability-focused workforce training

Leverage Center for Entrepreneurship and Technology Development for collaboration with local businesses/organizations

Expand green workforce development funding

Work with regional leaders to further DFW as an innovative EcoDistrict

ACTION ITEMS 1

Reference and analyze the annual ULI sustainability and climate change report to compare against UTA sustainability metrics