

# **New Economy Initiative Science and Technology Centers (STCs)**



Faculty Senate, 3/28/2022  
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## **ASU's New Economy Initiative assignment from the state**



### **Science and Technology Centers (STCs)**

Catalyze industry-relevant research, development and manufacturing



### **Workforce development**

New graduates, re-training and upskilling for existing workforce



### **Support New Economy start-ups**

Multiple ASU units partnering with industry and supporting entrepreneurship

# Summary of an STC

***Vision:*** Engine driving Arizona innovation, a skilled workforce and job growth.

## ***Key elements:***

- Industry-academia consortium defines needs and opportunities
- Matching for industry-funded projects
- State-of-the-art facilities provide research, development, and prototyping capabilities
- Student and employee training, upskilling and workforce development
- Entrepreneur program, tech-transfer focus



# Five Science and Technology Centers (STCs)



Focus on driving Arizona to the forefront of physical information systems for sensing and communications.



Focus on engineering resiliency into transportation, energy, water and materials systems of future cities.



Focus on enhancing physical and cognitive performance, as well as medical prevention and intervention.



Focus on advancing new energy materials and device technologies to market, growing industry engagement.



Focus on new technologies that strengthen links to private industry support in aerospace and defense.

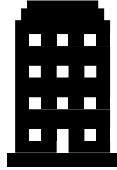
**Kicking off in  
2021-2022**

# Key Elements of an STC



## Faculty

Current and future  
faculty providing  
technology leadership



## Facilities

Unique equipment,  
platforms and personnel  
to support novel  
engagement



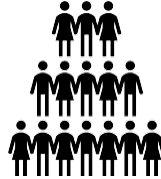
## Industry Engagement

Conduit to the  
community – projects  
and STC access



## Entrepreneurship and innovation

Students, faculty, local  
startup ecosystem



## Workforce Development

Current students, current  
workforce



## Philanthropy

Supporting people,  
broadening access

Each with a unique  
roadmap, structure  
and support

# What an STC **is**

- **Consortium** of researchers, entrepreneurs, subject matter experts and technologists in industry
- Advanced training and development tools and methodologies that are **developed at scale**
- Research, development, and prototyping facilities with **state-of-the-art equipment**
- **Embodied expertise** focused on engineering, technology, and commercialization
- Convergence of stakeholders to **develop a growing and highly skilled workforce** to support research & innovation, economic development and state competitiveness

# What an STC **does**

- Engages industry to develop a **technology roadmap** and identify opportunities
- **Solicits and co-funds** (with industry) **proposals** in response to identified opportunities
- Invests in and conducts **research and development** to understand and solve problems
- Builds capacity by training the **present and future workforce** with relevant curricula at scale
- **Transfers learning** to practice through entrepreneurship and industry partnerships
- Translates projects to industry to make products and systems that **employ areas of strength** for the region and ASU



# What an STC supports

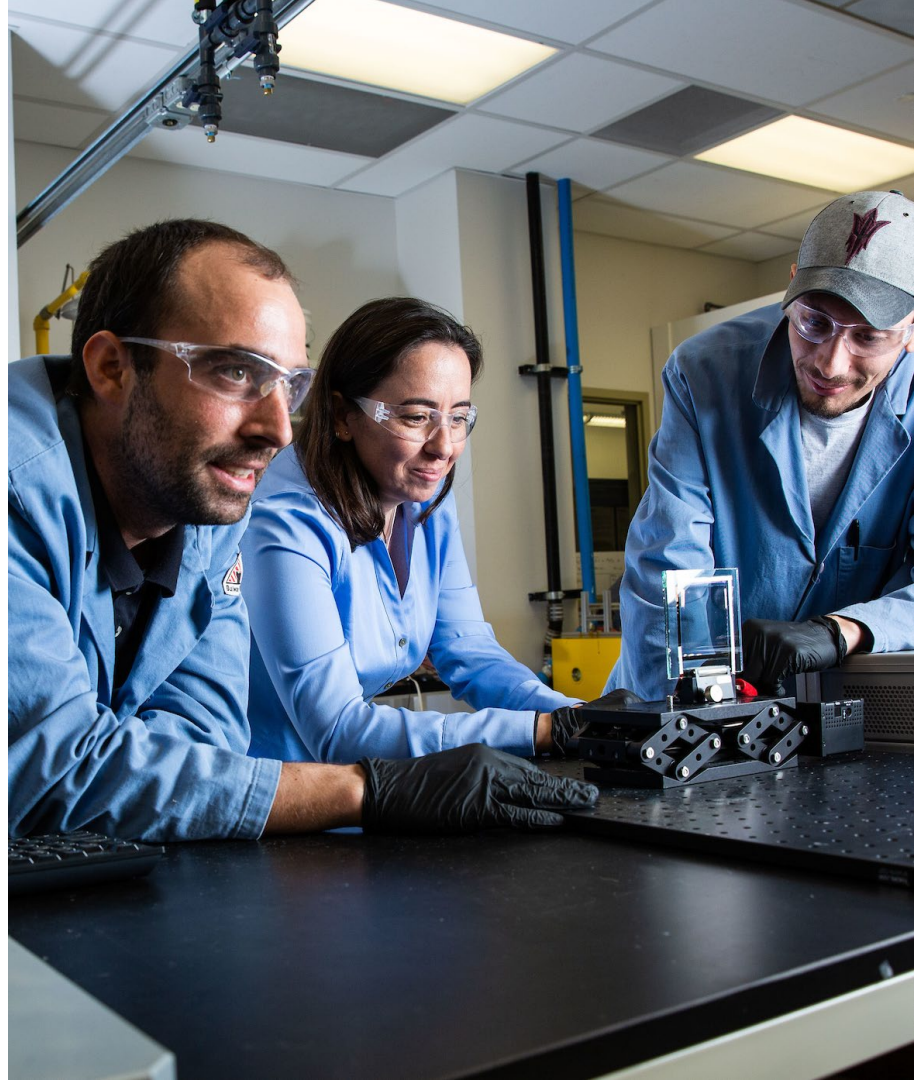
## Research and student training

Industry-Academia Proposers Days  
Research projects (co-funded by industry)  
Impact engineering fellowships  
Workforce training program

## Enabling equipment

Equipment in ASU Core facilities that enables capabilities key to the STC

**Faculty self-associate with an STC by either participating in a Proposers Day or submitting a successful proposal with an industry partner ([stc@asu.edu](mailto:stc@asu.edu))**



# Big picture...what does success look like?

## Accelerating Research

STCs focus on use-inspired research leveraging existing capabilities

- AZ Core focus in NNeRD
- MRSEC solicitation focus
- DARPA Innovation Center topic

Solar



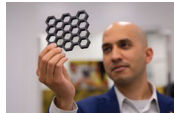
Automation



Batteries



Additive



Power Electronics



Semiconductor Packaging



## Translation and Talent Pipeline

Academia and industry partners collaborate to train a talented workforce

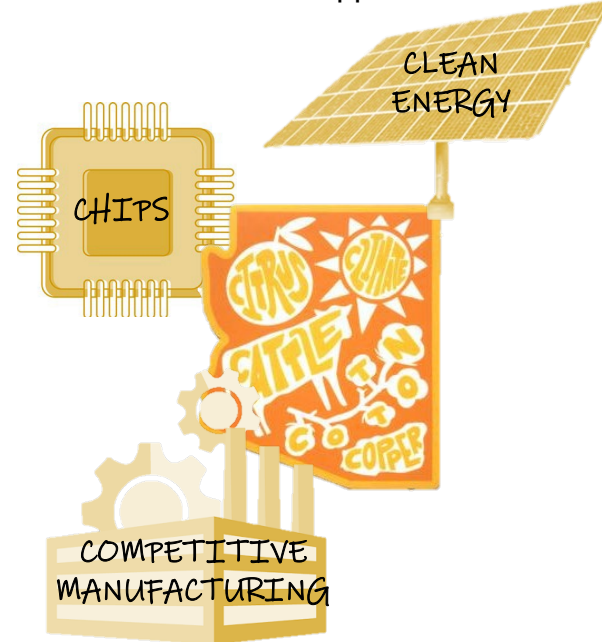
STCs help create start-ups, jobs and provide industry with upskilling and reskilling solutions for the present and future workforce



## Catalyzing the Future

Creating a thriving and robust Arizona economy

STCs advance the Arizona We Want – skilled and educated workforce and opportunities





# Process for STC projects semi-annual cycle

**Funding Opportunity  
Announcement (FOA)**  
Call for proposals that are  
responsive to key topical  
areas within the STC thrusts

FOA written by STC  
Directors and Thrust Leads

**Proposers Review**  
Criteria: Alignment with FOA, likely  
impact on STC and NEI goals,  
plan and feasibility, team, industry  
commitment, appropriate budget

Review panel includes  
STC Director, Thrust Leads,  
industry rep, ASU administration

**FEB**

**MAR**

**APR**

**MAY**

**JUN**

## Proposers Day

Industry/ASU discussions of  
R&D challenges identify key  
topical areas for STC thrusts

## Proposers Submission

Project description, budget  
(reflects STC/industry split),  
and letter of commitment from  
industry partner

Any team with an ASU PI and  
an industry partner is eligible

## Projects Begin

Collaborative R&D projects  
co-funded by the STC and  
industry partners; 3-6  
projects awarded per STC  
at ~1 PhD student level

# **Funding Opportunity Announcement (FOA)**

Call for proposals that are responsive to key topical areas within the STC thrusts

**Spring 2022 FOAs have just been released for the Advanced Manufacturing; and Energy and Materials STCs respectively**

**Please direct questions to [stc@asu.edu](mailto:stc@asu.edu)**

FOA issue date	March 23, 2022
Proposal submission deadline	April 29, 2022 at 5 pm MT
Expected selection notification date	May 20, 2022
Contract negotiations and projects begin	June – July, 2022

# Where we are now

- All faculty welcome to participate
- Proposers Days to be held semi-annually
  - Advanced Manufacturing; and Energy and Materials held Feb 2022
  - Future Communications Technologies; Extreme Environments; Human Performance to be held Fall 2022
- Faculty self-associate with an STC by either participating in a semi-annual Proposers Day or submitting a successful proposal with an industry partner
- Please send email to [stc@asu.edu](mailto:stc@asu.edu) to be involved and/or for the FOA information

# Question for the Faculty Senate

- How can we communicate more widely about the STCs, and in particular, regarding the STC Proposers Days?