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)

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

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

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

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

Advanced manufacturing
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)
Big picture...what does success look like?

**Accelerating Research**
STCs focus on use-inspired research leveraging existing capabilities

**Translation and Talent Pipeline**
Academia and industry partners collaborate to train a talented workforce

**Catalyzing the Future**
Creating a thriving and robust Arizona economy

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

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**AZ Core focus in NNeRD**

**MRSEC solicitation focus**

**DARPA Innovation Center topic**

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**Solar**

**Automation**

**Batteries**

**Additive**

**Power Electronics**

**Semiconductor Packaging**

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**CHIPS**

**CLEAN ENERGY**

**COMPETITIVE MANUFACTURING**
Process for STC projects

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 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

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

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

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

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

Please direct questions to stc@asu.edu

<table>
<thead>
<tr>
<th>FOA issue date</th>
<th>March 23, 2022</th>
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<tbody>
<tr>
<td>Proposal submission deadline</td>
<td>April 29, 2022 at 5 pm MT</td>
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<tr>
<td>Expected selection notification date</td>
<td>May 20, 2022</td>
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<td>Contract negotiations and projects begin</td>
<td>June – July, 2022</td>
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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 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?