Space Technology Mission Directorate: Fostering Ideas and Communities towards Commercialization

Jenn Gustetic, Early Stage Innovations and Partnerships Program Director

SPACE TECHNOLOGY PORTFOLIO

EARLY STAGE INNOVATION
- NASA Innovative Advanced Concepts
- Space Tech Research Grants
- Center Innovation Fund/ Early Career Initiative

PARTNERSHIPS AND TECHNOLOGY TRANSFER
- Technology Transfer
- Prizes and Challenges
- iTech

SBIR/STTR PROGRAMS
- Small Business Innovation Research
- Small Business Technology Transfer

TECHNOLOGY MATURATION
- Game Changing Development
- Lunar Surface Innovation Initiative

TECHNOLOGY DEMONSTRATIONS
- Technology Demonstration Missions
- Small Spacecraft Technology
- Flight Opportunities

Technology Drives Exploration

LOW

MID

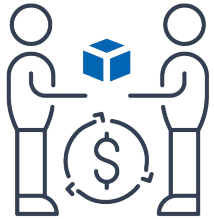
HIGH

Technology Readiness Level

NASA SBIR/STTR Program

As a program under STMD, the NASA SBIR/STTR program funds the research, development, and demonstration of innovative technologies that fulfill NASA needs.

NASA's SBIR/STTR Program has **awarded more than $3.3 billion** to research-intensive American small businesses



Engineers and scientists from **more than 12,000** small businesses in all 50 States, DC and Puerto Rico have participated

NASA SBIR/STTR Funding

NASA SBIR/STTR PHASES

PHASE I

Idea Generation

$125,000

SBIR 6 months
STTR 13 months

I-CORPS

PHASE II

Prototype Development

$750,000

24 months

PHASE III

Infusion/ Commercialization

Non-SBIR Funding

POST PHASE II OPPORTUNITIES

PHASE II – E

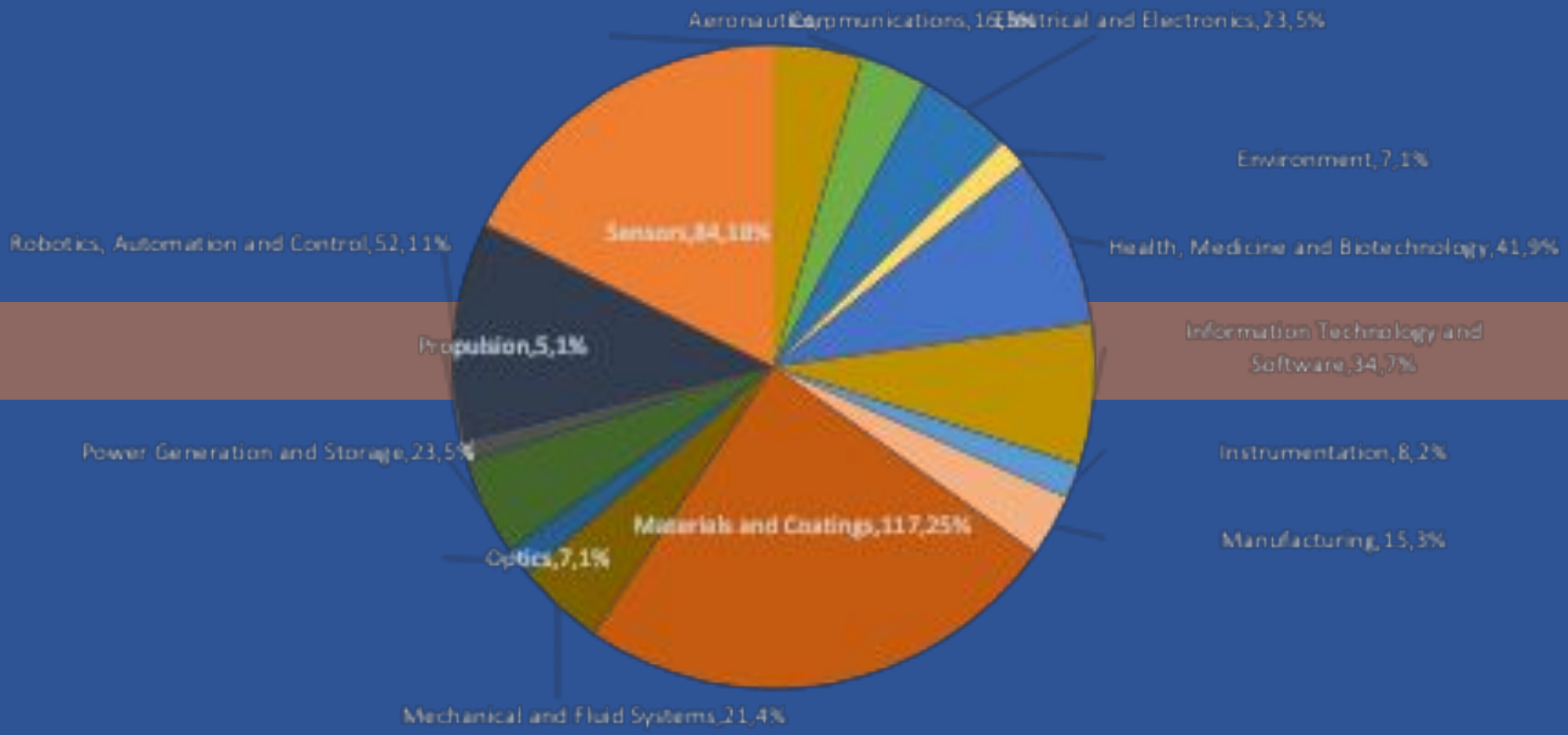
Reqs matching funding
up to $375,000
6 to 12 months

CCRPP

Reqs matching funding
$500,000 to $3,000,000
24 months

Agency Patents Licensed by Category

As of Aug 17, 2020



Startup NASA

The Startup NASA initiative offers startup companies a license with no up-front costs for commercial use of our patented technologies, we're letting companies hold onto their cash while securing the intellectual property needed to carve

99 new companies have formed since program launched in October 2015, with 12 startup licenses so far in FY21.

Geneto

PETRA POWER

Gaia Elements

Tellus

EDRONES

JETOPTERA™

SpaceBooster LLC

NASA iTech 2017 CYCLE 2 SEMIFINALIST

AirFlare

Dig.y.S L™

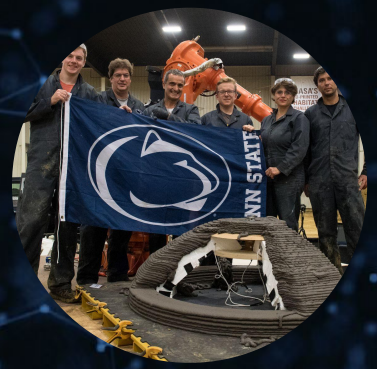
PROFESSIONAL TECHNICAL SERVICES

NASA Technology Transfer University (T2U)

Through T2U, we are connecting student entrepreneurs with NASA-proven technology

- Student entrepreneurs build case studies with NASA's patent portfolio while learning about commercialization and licensing opportunities.
- Currently, there are 24 active T2U agreements.
- In FY21 T2U will target 3 new T2U partnerships in FY21, with special emphasis on states that do not currently have T2U activity, creating approximately 20 new T2U activities.

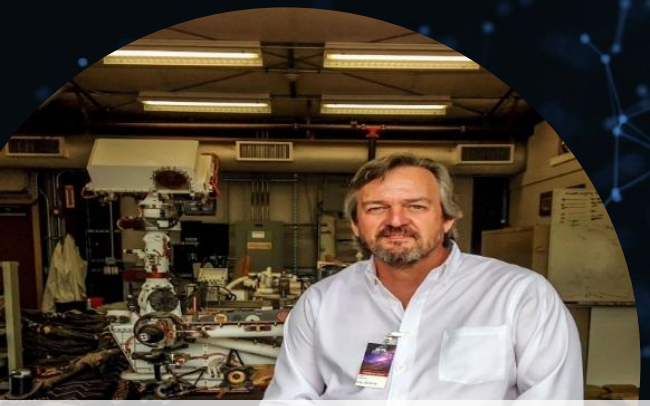
Alabama STEM MBA program visit to NASA MSFC.



Prizes and challenges: approaching innovation differently

Complements other NASA approaches to solve technological problems, with a unique set of strengths:

- Targets solutions, not proposals; awards performance
- Increases number and diversity of participants addressing a problem



These opportunities can be accessed by the public on the NASA Solve website: ***www.nasa.gov/solve***

SOLVE

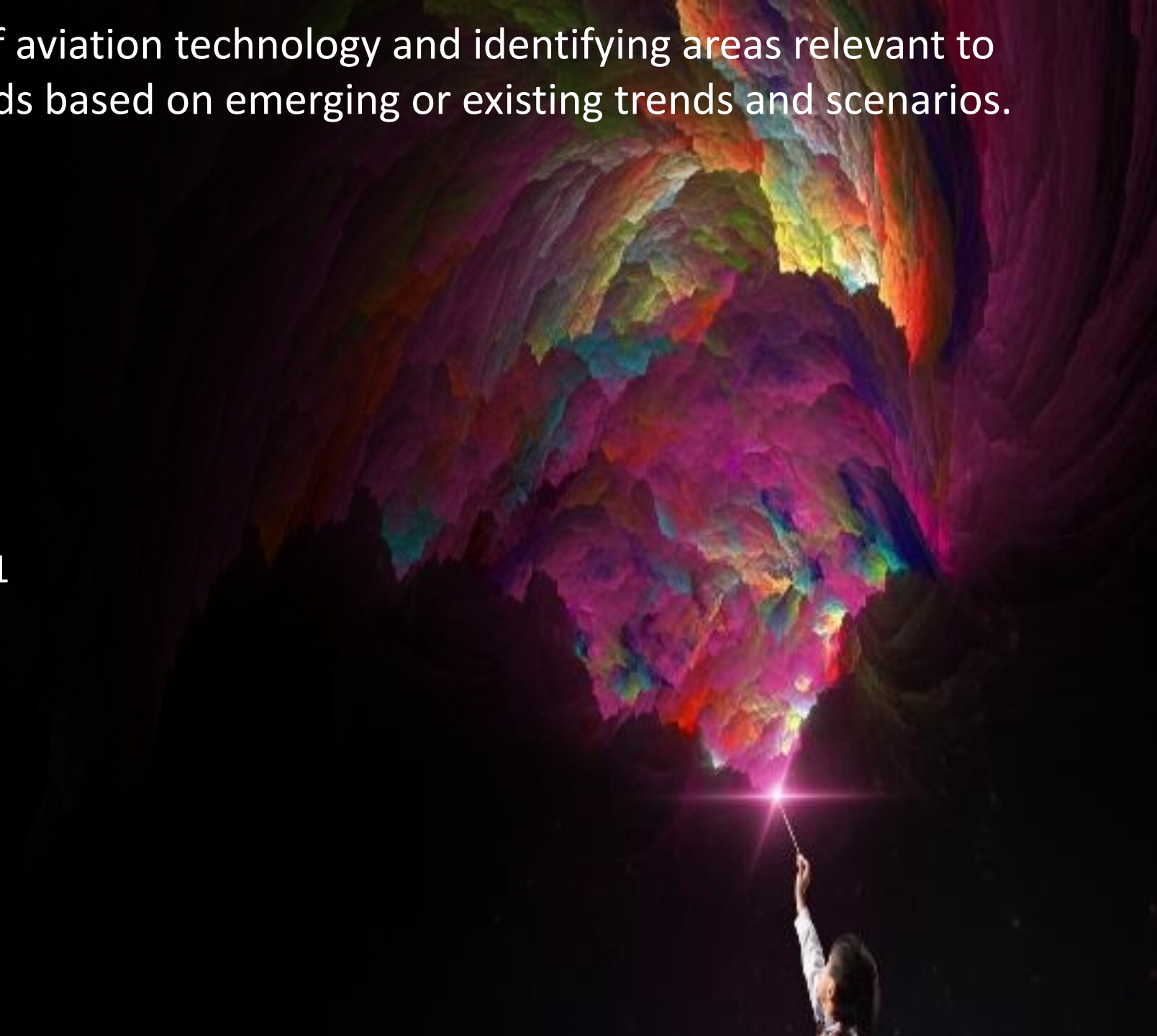
Green Flight Challenge (2011)

- A Cessna 172 takes around 28 gallons to fly 400 miles, and Pipistrel (the winner) used 2 gals of equivalent fuel (converting the electricity consumed to a fuel equivalent)

Seeking ideas about the future of aviation technology and identifying areas relevant to aviation that impact societal needs based on emerging or existing trends and scenarios.

Future-Scaping Our Skies

- TOTAL PRIZE PURSE: $21,000
- Opened: April 2, 2021
- Submission Deadline: June 1, 2021
- Program: CAS
- Directorate: ARMD



Some Recent Examples: De-risking Tech to Enable Company Growth

IPO via SPACs:

REDWIRE

LoadPath A REDWIRE COMPANY

MADE IN SPACE

DSS Deployable Space Systems

ADCOLE Space Heritage & Innovation

ROCCOR A REDWIRE COMPANY

ASTRA

Mergers and Acquisitions:

VOYAGER SPACE HOLDINGS

TETHERS UNLIMITED

Nanoracks

ALTIUS SPACE MACHINES

PIONEER ASTRONAUTICS

Strategic Investments:

Innoflight