2019 U.S. ARMY MAD SCIENTIST CONFERENCE

WELCOME TO THE UNIVERSITY OF TEXAS AT AUSTIN

Sharon L. Wood

Dean, Cockrell School of Engineering

Nationally and Globally Respected

#15

Top U.S. Public Universities
US News & World Report

#36

Best Global Universities
US News & World Report

Extraordinary Strength and Breadth

- **18** Colleges and Schools

- **156** Undergraduate Degree Programs

- **237** Graduate Degree Programs

- **112** Fulbright Scholars

- **31** Rhodes Scholars

Situated in the heart of one of America's fastest-growing, most technology-driven cities

PATENTS | LICENSING | STARTUPS

UT Austin Research Enterprise (FY 2018)

$683M Research Expenditures

165 Invention Disclosures

10 Startups Formed

89 Patent Applications Filed

73 Patents Issued

97 Licenses & Options Executed

Technology Transfer Lifecycle 2018

Research & Development · Invention · Evaluation · IP Protection · Marketing · Licensing · Product Development · Public Use and Economic Growth

Mission

The Cockrell School of Engineering has served as a global leader in engineering education and technology advancement for over a century.

Our *mission* is to:

- Educate leaders who think big and think creatively
- Pursue innovative solutions through research, industry partnerships, and entrepreneurship
- Create cross-disciplinary collaborations
- Provide a supportive and inclusive environment for all members of our community

Vision

Our vision is to be an influential catalyst in the development of future solutions that advance society, drive economic progress, sustain our planet, and improve the quality of life around the world.

I. ROBOTICS

UT Robotics Faculty

- Eight core faculty members from four departments (aerospace engineering, electrical and computer engineering, mechanical engineering, and Computer Science)

- Well-funded labs with 6-12 graduate students and 1-4 post-docs in each group

- 20+ affiliated faculty from across campus

- Hiring efforts underway for eight more tenure-track faculty members in robotics

- Strong collaboration with industry partners

II. NETWORKS

Networks Research

- Physical Layer: Wireless Communications and Sensing

- Network Architectures and Resource Allocation

- Authorization, Security, and Privacy

- Applications: Networked Situational Awareness

Networks Community

Faculty and Research Centers

- 28 faculty across CSE and CNS

- Nine cross-disciplinary labs, including Wireless Networking and Communications Group

APPLIED RESEARCH LABORATORIES
The University of Texas at Austin

- Classified research
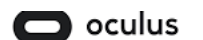
- Prototyping and testbeds

- Pickle Campus Facilities

Supporting Networks Innovation

- 150 Ph.D. students in networks

- ~$9.5M in annual expenditures

- Industry Partnerships

- Successful startups

Industrial Partners

III. AUTONOMOUS AND INTELLIGENT SYSTEMS

Machine Intelligence and Decision Systems

MINDS: **M**achine **IN**telligence and **D**ecision **S**ystems

Data/sensors → ML core → Applications

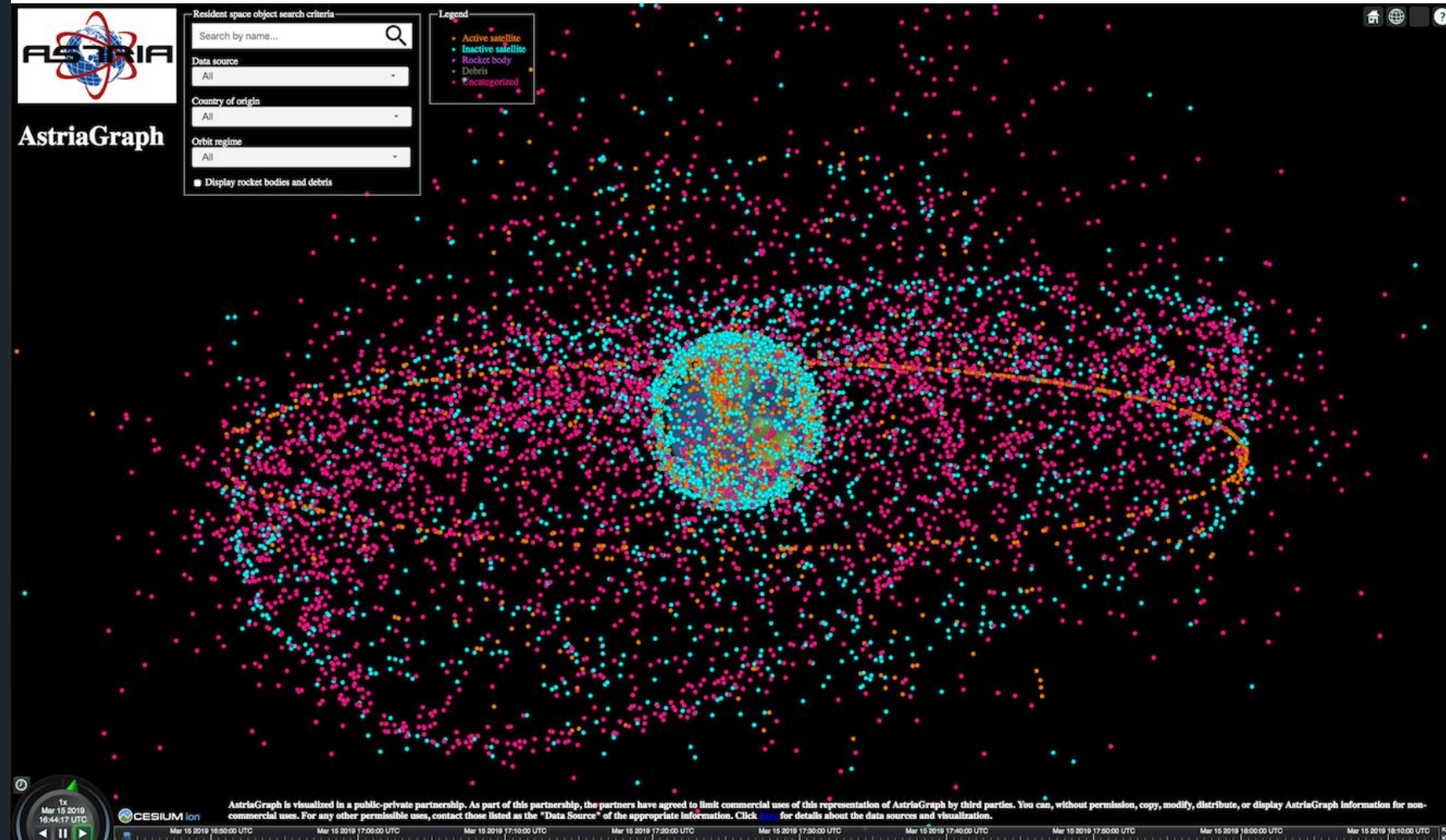Robust, scalable, well-engineered solutions for design of reliable full-stack systems

UT SAVES: **S**ituation-**A**ware **V**ehicular **E**ngineering **S**ystems
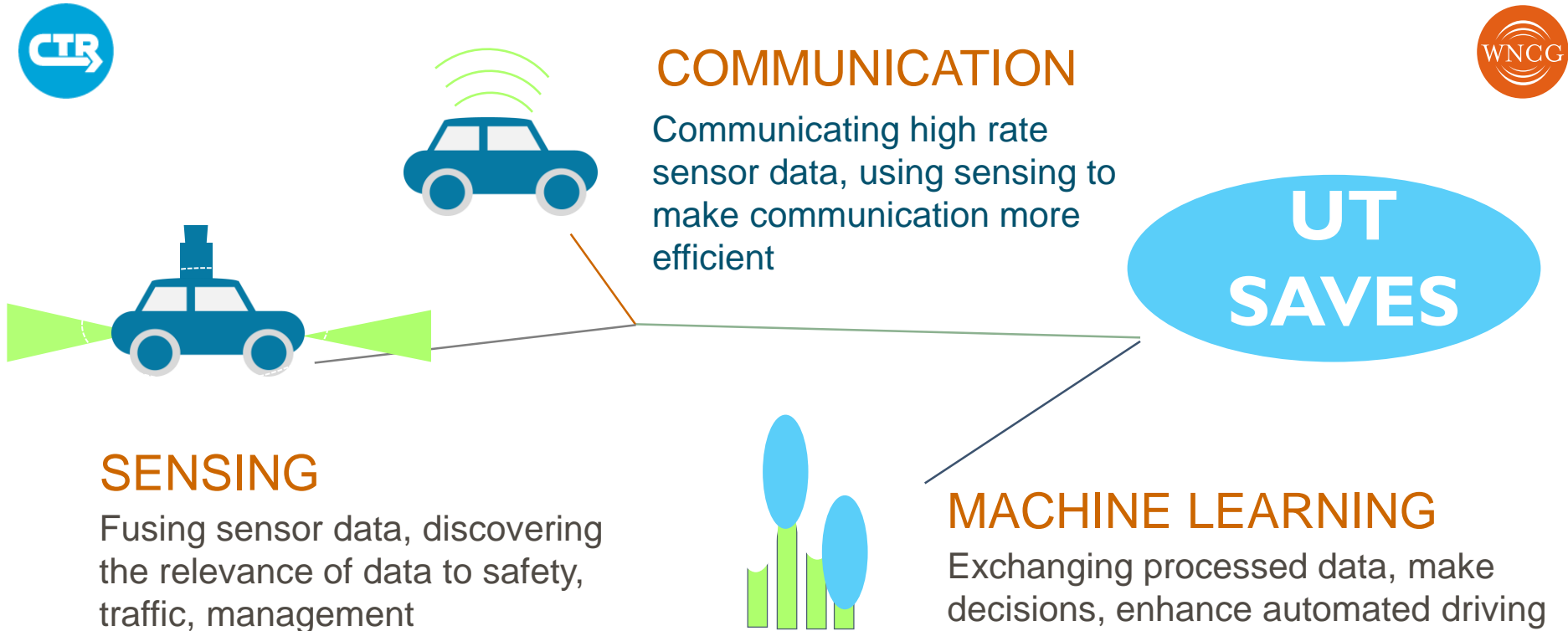
IV. SPACE SITUATIONAL AWARENESS

ASTRIAGraph: Crowdsourced Space Traffic Monitoring System

ASTRIAGraph: Crowdsourced Space Traffic Monitoring System

- ASTRIANet telescopes deployed to New Mexico, Australia, and India

- Collaboration with other nations (e.g. Switzerland, Poland, United Kingdom) and Lockheed Space Object Tracking (SPOT) facility

- Reveals consistencies and inconsistencies amongst space data providers, operators, and analysts

The University of Texas at Austin
Cockrell School of Engineering