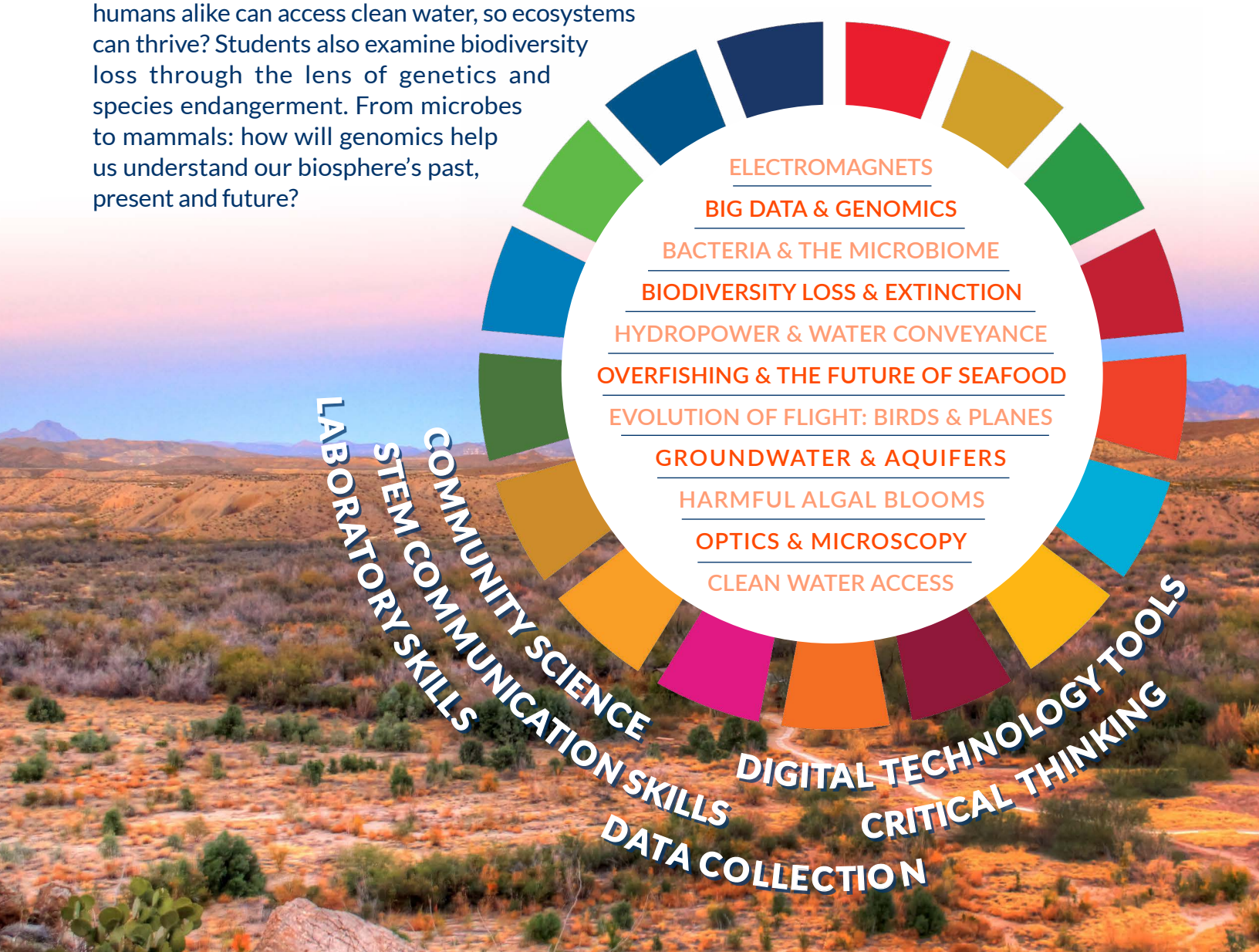
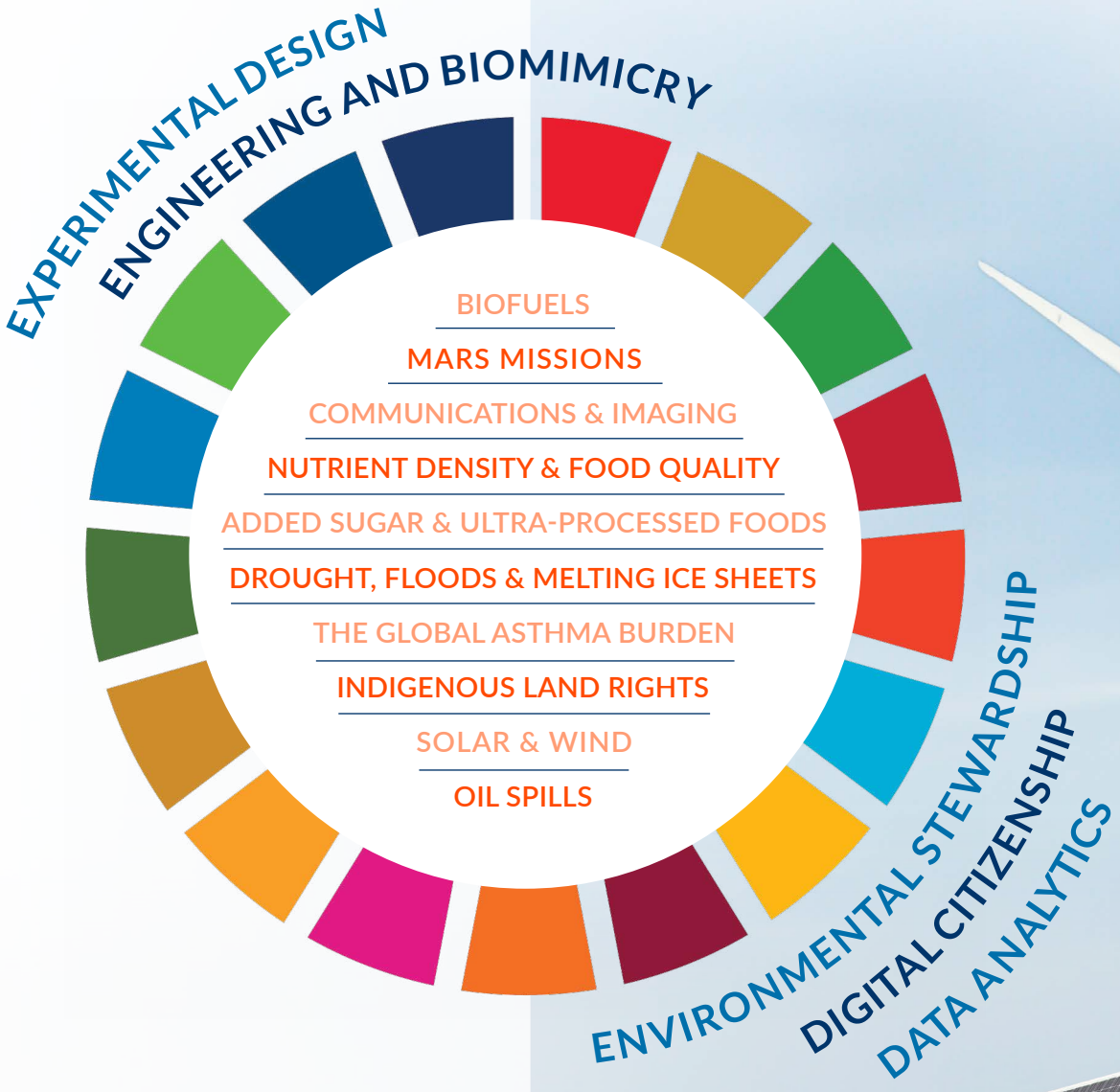
The INTEGRATED SCIENCE Program

Our citizens, caregivers and workforce leaders of tomorrow need new approaches in the classroom today. In the 21st-century's Information Age, classroom content should reflect pressing real-world issues that impact us personally, locally and globally. And students must leverage skills that will transfer to the world of work. Texas educators are poised to leap into modern, innovative course designs with the launch of the new Science TEKS. We ensure that graduates are prepared for complex problem-solving within their local community and beyond.

YEAR 1 challenges students to embrace the vast and diverse Texas biogeography from soils to sea. How will we build resilience in the face of climate change? What infrastructure is needed, and who will engineer it? How do we ensure that local wildlife and humans alike can access clean water, so ecosystems can thrive? Students also examine biodiversity loss through the lens of genetics and species endangerment. From microbes to mammals: how will genomics help us understand our biosphere's past, present and future?



YEAR 2 When students return to school, the familiar routines allow for immediate immersion into more sophisticated topics that build on their strong foundation. Health, environment, the global food system, energy issues, and climate change come into focus. The United Nations Sustainable Development Goals are connective tissue that push students to think systemically.



We drive content organization with real-world, engaging phenomena. We embed TEKS science standards into our 4D designs that spiral Recurring Themes and Concepts as well as Scientific and Engineering Practices.

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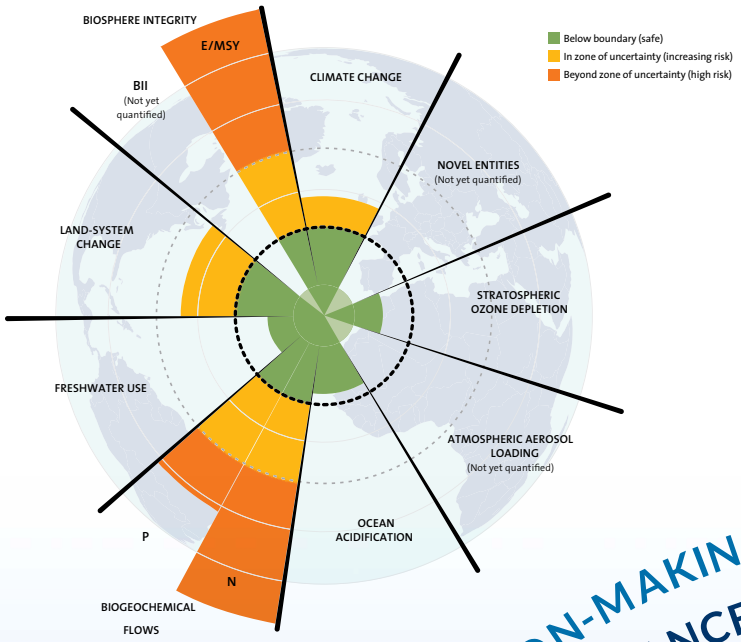
YEAR 3 It's time for students to grapple with multi-faceted problem solving and long-term laboratory work. In the context of planetary systems, students use authentic STEM databases and primary science journals to answer questions they pose about our atmosphere, land, oceans and even near-earth orbit.



Planetary Boundaries (2022), Designed by Azote for Stockholm Resilience Centre, based on analysis in Persson et al 2022 and Steffen et al 2015

Stockholm Resilience Centre | Stockholm University

MISSION BLUE
SYLVIA EARLE ALLIANCE

Global Fishing Watch

STEM DECISION-MAKING AND ETHICS
ADVANCED LABORATORY TECHNIQUES
ENGINEERING WITH EMPATHY
DATA VISUALIZATION
COMMUNITY SERVICE & ADVOCACY

DESERTIFICATION
SATELLITE POLLUTION
SPACE ENVIRONMENTALISM
SAFE & FUEL-EFFICIENT AUTOMOBILES
ANTIVIRALS, VACCINES & ANTIBIOTICS
MINING THE LAND, SEA FLOOR, & ASTEROIDS
CORAL BLEACHING & REEF REGENERATION
GLOBAL AIR QUALITY & REGULATIONS
OCEAN ACIDIFICATION
SOIL DEGRADATION

NASA

OAP
NOAA OCEAN ACIDIFICATION PROGRAM

NOAA ARCTIC

STATE OF GLOBAL AIR

WAYFINDER

ENVIRONMENTAL STEWARDSHIP OF NEAR-EARTH ORBIT

Moriba Kemessia Jah, Ph.D.

Director of Computational Astronautical Sciences and Technologies (CAST)
Oden Institute for Computational Engineering and Sciences , The University of Texas at Austin

Associate Professor of Aerospace Engineering and Engineering Mechanics
Cockrell School of Engineering,
The University of Texas at Austin

Co-Founder and President
Moriba Jah Universal, LLC

Co-Founder and Chief Scientist
Privateer Space Inc.

2022 MacArthur Fellow
"Genius Grant" Winner

This cutting-edge interdisciplinary experience challenges High School or Undergrad students to consider natural and anthropogenic satellites, and the pollution of the environment just beyond Earth's atmosphere. Dr. Moriba Kemessia Jah has raised awareness globally of the myriad problems caused by debris from satellites no longer operational but still orbiting Earth. We are grateful for his expertise and collaboration in developing an action-packed unit where students explore orbits and projectiles, prototype a satellite, understand how GPS works, and tap into the Wayfinder database of all trackable satellites.

Dr. Jah challenges students to apply Traditional Ecological Knowledge (TEK) to address the space junk problem, conceptualize international and legal frameworks, and generally become more attuned to the conditions of our extraterrestrial environment. EduChange also extends thanks to NASA's Dr. George Tselioudis of the Goddard Institute for Space Studies, and Carolyn Harris of Education and Public Outreach. We're excited to get this unit into more classrooms!

STEP INTO OUR MISSION

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