Over 500 million years ago, weird complex creatures emerged on Earth.

Summary:
Earth’s magnetic field plays a key role in making our planet habitable. The protective bubble over the atmosphere shields the planet from solar radiation, winds, cosmic rays and wild swings in temperature.

These weird animals barely resembled life today — squishy fans, tubes and doughnuts, and discs. Prior to this time, life had been largely single-celled and microscopic. The researchers believe that a weak magnetic field may have led to an increase in oxygen in the atmosphere, allowing early complex life to evolve.

STEM Spotlight
Dr. Terry Hufford

C.E. is saddened to announce the passing of Dr. Terry Hufford, who served as the Director of USABO for CEE from 2006-2009. He was an emeritus professor of botany at George Washington University and a member of GW’s Academy of Distinguished Teachers. Terry was an innovator and recognized nationally for his work in STEM teaching, learning, and curriculum design.

Upon retirement, he continued to write scholarly manuscripts on science learning and taught courses like his “Biology in the City.” Funded by the Hewlett Foundation, this student-centered course allowed students the opportunity to work through big idea problems within biology while exploring resources in the Washington, DC area.

Terry epitomized what it meant to be a leader in life science education and was a beloved mentor and friend.

Teacher Enrichment Program
Teachers can join us this year in our Virtual Bite of Science and College & Career Panels to learn about new cutting-edge research and technology.

STEM Lyceums
Students can join this virtual club to build STEM communities and engage in discussions and explorations of STEM concepts and STEM career pathways.

Partner Opportunities
2024 Congressional App Challenge

The Congressional App Challenge’s mission is to inspire, include, and innovate efforts around STEM, Coding, and Computer Science Education. Every year students in congressional districts are challenged to create and submit their original apps for a chance to win the Congressional App Challenge (CAC). Each challenge is district specific. U.S. Representatives publicly recognize the winning teams, and each winning app may be put on display in the U.S. Capitol Building for one year. Click Here to Register!
Genome editing with CRISPR RNA-guided endonucleases generates DNA breaks that are resolved by cellular DNA repair machinery. However, analogous methods to manipulate RNA remain unavailable. Within the research, it is shown that site-specific RNA breaks generated with type III CRISPR complexes are repaired in human cells, and this repair can be used for programmable deletions in human transcripts to restore gene function. Collectively, this work establishes a technology for precise RNA manipulation with potential therapeutic applications: bit.ly/3zQRQP9

Biology:
What makes the soil in tropical rainforests so rich?

Chemistry
What makes a "fluorescent" highlighter marker so bright?

Human Anatomy and Physiology
How do nerves control every organ and function in the body?

STEM Scholarships/Internships

Students
The Gates Scholarship
GE-Reagan Foundation Scholarship Program
Ron Brown Scholarship
Sierra Nevada Corporation Women in STEM Scholarship
Amazon Future Engineer Scholarship Program
Foot Locker Scholar Athletes Program
McDonald’s Hacer National Scholarship
United States Senate Youth Program

Teachers
Albert Einstein Distinguished Educator Fellowship (AEF) Program
McCarthey Dressman Teacher Development Grants
NEA Foundation Learning and Leadership Grants
NEA Foundation Envision Equity Grants

Classroom Activities
Explore the various standards-based classroom lessons from FutureU.

- Long-Endurance Space Flight
- Space Ergonomics
- Ocean Eco-Exploration
- Bioremediation
- Cabin Redesign
- Cargo Air Vehicle (CAV) Aid
- Future of Satellites