

**Subject:** APL Advances — April 2023  
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# APL ADVANCES

Critical Contributions to Critical Challenges • April 11, 2023

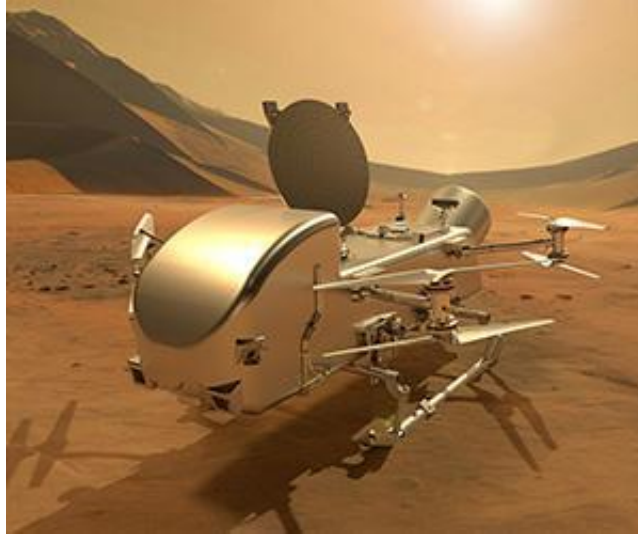


## Top Stories



### Johns Hopkins APL Installs First Hybrid Metal 3D Printer Onboard Naval Ship

Engineers at APL, in partnership with the Naval Surface Force Atlantic and Naval Sea Systems Command (NAVSEA) Technology Office, installed the first hybrid metal 3D printer onboard a Navy ship. 3D printing, technically referred to as additive manufacturing (AM), enables efficient and timely production of mission-critical components while out at sea.



## Dragonfly Team Soars Through Major Design Review

Before it can fly its revolutionary rotorcraft over the organic dunes of Saturn's moon Titan, NASA's Dragonfly team needs to navigate several independent reviews to demonstrate the flight project is on track. Led by APL, the team recently passed the first of those evaluations, the Preliminary Design Review.



## Johns Hopkins Scientists Leverage AI to Discover Climate 'Tipping Points'

Researchers from APL and the Johns Hopkins Department of Earth and Planetary Sciences are

developing a modeling tool to predict climate “tipping points,” critical thresholds that, when crossed, can lead to large and often irreversible changes in the climate system.

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## Training Algorithms to Sniff Out Sneaky Fentanyl Clones

Chemists and computer scientists at APL are teaming up to use machine-learning algorithms to spot fentanyl analogs – molecules designed to mimic the deadly drug’s effects while evading detection.

[Read More Stories](#)



## Upcoming Events

**GOALS. GAPS. GAME CHANGERS.**

**JUNE 8, 2023**



Research Frontiers Forum  
**Climate Change +  
National Security**

## Research Frontiers Forum

June 8, 2023 • Johns Hopkins APL

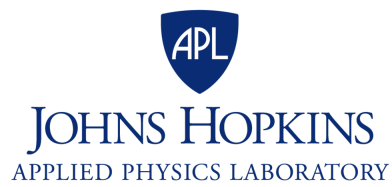
The Research Frontiers Forum will be held at APL on June 8, with a goal of aligning on national security priorities, identifying the major gaps threatening progress and exploring the frontiers of potentially game-changing research. Attendees will join a conversation featuring a range of perspectives on climate science, technology application and policy, followed by an exploration of a brighter, climate-secure future through cutting-edge research demonstrations.



## Staff Spotlights

### ‘Pathfinder’ Mulé Honored for Missile Defense Contributions

For a career of leadership and technical contributions to the nation’s missile defense programs, Joseph Mulé has earned the Missile Defense Agency’s Aegis Ballistic Missile Defense Pathfinder Award. He is the sixth APL staff member to receive the prestigious honor.



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