

# MILESTONES 2020

803



PAPERS  
PUBLISHED

284



PRESENTATIONS  
GIVEN

37



U.S. PATENTS  
AWARDED

31



U.S. PATENT  
APPLICATIONS  
FILED



48

INVENTION DISCLOSURES  
SUBMITTED

2,714  
EMPLOYEES



272  
DOCTORATES

552  
MASTERS

849  
BACHELORS

240  
ASSOCIATES

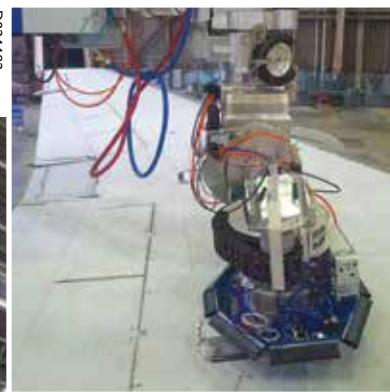
Two Southwest Research Institute-developed technologies won 2020 R&D 100 Awards. The first addresses how military planes use electronic countermeasure defense (ECM) systems to thwart enemy radar and deny targeting. SwRI developed the SPARTA system to evaluate ECM technologies, ensuring that they send the correct countersignal for a given radar cue. The second deals with stripping paint and other coatings from full-body aircraft, a costly, time-consuming and potentially hazardous process. The Laser Coating Removal (LCR) Robot, the world's largest robot system developed by SwRI engineers and XYREC, uses machine vision and intelligent processing to precisely and safely ablate aircraft coatings.



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IMAGE COURTESY BLUE ORIGIN

## HONORS

**Dr. Robin Canup:** Co-chair, Planetary Science and Astrobiology Decadal Study for the National Academies of Sciences, Engineering and Medicine

**Graham Conway:** Editorial Board for Transportation Engineering

**Walt Downing, P.E.:** Institute of Electrical and Electronics Engineers Distinguished Lecturer and IEEE Aerospace and Electronic Systems Society President

**Adam L. Hamilton, P.E.:** Associate Fellow, American Institute of Aeronautics and Astronautics

**Dr. Peter Lee:** Elected as a Director of the Society of Tribologists & Lubrication Engineers

**Dr. J. Hunter Waite:** Presented the American Geophysical Union Shoemaker Lecture

## AWARDS

**Michael Quinn:** National Association of Old Crows (AOC) Joseph W. Kearney Pioneer Award

**Dr. Vicky Z. Poenitzsch:** The Academy of Medicine, Engineering and Science of Texas (TAMEST) 2020 Protégé

**C. Nils Smith:** Stanley B. Hall Executive Management Award for AOC Dixie Crow Chapter

**Dr. Danielle Wyrick:** Ronald Greeley Distinguished Service Award, Planetary Geology Division of the Geological Society of America

**New Horizons Mission:** NASA Group Achievement Award and Sir Arthur Clarke Award from the British Interplanetary Society



D024611

In late 2020, SwRI conducted two microgravity experiments on Blue Origin's New Shepard rocket. Engineers tested a tapered liquid acquisition device (above) designed to passively remove problematic bubbles and safely deliver fuel from spacecraft storage tanks to the rocket engine, particularly important for long spaceflights.

Below, tetrahedrons with magnetized sides successfully gathered meteorite-like materials in low gravity, demonstrating how these small devices could passively gather asteroid surface materials and then turn themselves inside out to store the samples for transport.



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D024614



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D024621



D024631