

# HEATHER ANN ORAVEC

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## BIOGRAPHY

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Dr. Heather Oravec is a researcher in the diverse fields of aerospace and geotechnical engineering, with an emphasis in the respective areas of advanced aerospace seals and lunar soil mechanics. A native of Cleveland, Ohio, Dr. Oravec studied at Case Western Reserve University earning her doctorate in 2009. Dr. Oravec has over seven years of professional experience and currently holds a position with the University of Akron as a Research Associate Professor. Under the multi-million dollar Advanced Research & Technology Support contract, Dr. Oravec works as a federal contractor to NASA Glenn (69(c)-9(ont)3(a)-15(ct))TJETBT1 0 6f1 0 0 1 54 wnn)9( )TJETBT1 0 0 1 545.02 ote[,T1 0 1 0 5(os)-12(pa)-2(ce)-9( )-9

January, 2018

January, 2018

Managed operation of test equipment, documentation of safety permits and standard operating procedures in the Soils Design Laboratory at the NASA Glenn Research Center including table bevameter, triaxial test apparatus, cone penetrometer, and mechanical sieve shaker.

Contributed to the research and development of the GRIP rig small-scale traction testing device used to compare the visual performance of various tread patterns on a wheel.

ENGINEERING INTERN, URS Corporation

January, 2018

January, 2018

CASE WESTERN RESERVE UNIVERSITY	Teaching Assistant, Spring 2005 ENGR 200: Statics and Introductory Strength of Materials Course Instructor: Dr. Xiangwu Zeng
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#### ACADEMIC OUTREACH ACTIVITIES

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2017 NASA HIGH SCHOOL SHADOW DAY, NASA Glenn Research Center



January, 2018

4. Oravec, H. A.

January, 2018

PUBLISHED ARTICLES



January, 2018

88. (2015, June) Adhesion Force Measurement of Fourth Generation Medium-Scale Silicone Elastomer Seals After Mechanical Removal of Santovac 5GB and Braycote Micronic 601 EF Coating
87. (2015, May) Results of Compression and Adhesion Tests on Fourth Generation Medium-Scale Silicone Elastomer (S0383-70) Seals with TiO<sub>2</sub> Additive After Exposure to Atomic Oxygen and Ultraviolet Radiation
86. (2015, May) Results of Adhesion tests on Fourth Generation Medium-Scale Silicone Elastomer Seals Treated with Santovac 5GB and Braycote Micronic 601 EF Coating and Exposed to Atomic Oxygen and Ultraviolet Radiation
85. (2015, April) Results of Compression and Adhesion Tests on Hollow O-rings at Various Temperatures for the Multi-Purpose Crew Vehicle Docking Hatch
84. (2015, Feb) Results of Compression and Adhesion Tests on Hollow and Solid O-Rings for the Multi-Purpose Crew Vehicle Docking Hatch
83. (2015, Jan) Results of Compression and Adhesion Tests on Fourth Generation Medium-Scale Silicone Elastomer (S0383-70) Seals with TiO<sub>2</sub> Additive
82. (2014, June) Results of Baseline Adhesion Tests on Fourth Generation Medium-Scale Silicone Elastomer Seals Treated with Braycote Micronic 601 EF Coating
81. (2014, May) Results of Adhesion Screening Tests on Fourth Generation Medium-Scale Silicone Elastomer Seals for the Evaluation of Potential Ultraviolet Radiation Resistant Seal Coatings
80. (2013, Jan) Analysis of the Cyclic Compression Testing on the Seal Bulbs of UV/AO Pretreated Medium-Scale Two-Piece Generation 4 S0383-70 Material Seals
79. (2013, Jan) Analysis of the Room Temperature Compression Tests on Fourth Generation Medium-Scale S0383-70 Material Engineering Demonstration Unit Engineering Sample Seals
78. (2013, Jan) Compression Analysis and Process Control of the Test Data from Fourth Generation Medium-Scale S0383-70 Material Seals
77. (2013, Jan) Analysis of the Cooling Rate of a Fourth Generation Medium-Scale S0383-70 Material Seal Compared to the cooling Rate of the Metal Platens and Environmental Chamber
76. (2013, Jan) Analysis of the Compression Tests on Fourth Generation Medium-Scale S0383-70 Material Seals at -50°C with Temperature Soak Times of Three Hours and 16 Hours

January, 2018

68. (2012, June) Analysis of Additional Adhesion Tests Supporting the Selection of Adhesion Reduction Specification Atomic Oxygen Pretreatment Levels for Medium-Scale Two-Piece Generation 4 S0383-70 Material Seals at Refrigerated Temperatures
67. (2012, June) Analysis of Adhesion Tests Supporting the Selection of Adhesion Reduction Specification Atomic Oxygen Pretreatment Levels for Medium

January, 2018

50. (2011, Oct) Analysis of a Long Duration Adhesion Test on Two-Piece Gen 2 Momentive 70 Material





January, 2018

AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS (2011-Present)

Member

CLEVELAND STATE UNIVERSITY ALUMNI ASSOCIATION (2004-2006)

Co-President and Treasurer for the Engineering Alumni Association (2005-2006)

Member of the Events and Activities Committee (2005-2006)

Secretary for the Engineering Alumni Association (2004-2005)

TAU BETA PI ENGINEERING HONOR SOCIETY (2002-Present)

Cleveland State University Chapter President (2003-2004)

AMERICAN SOCIETY OF CIVIL ENGINEERS (2000-2009)

2005 Regional Steel Bridge Competition Participant (Ann Arbor, Michigan)

2003 National Steel Bridge Competition Participant (San Diego, California)

2003 Regional Steel Bridge Competition Participant (Lexington, Kentucky)

SOCIETY OF WOMEN ENGINEERS (2000-2008)

Member

CLEVELAND STATE UNIVERSITY JOINT ENGINEERING COUNCIL (2000-2004)

President (2003- 2004)

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## HONORS AND AWARDS

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### SPACE FLIGHT AWARENESS TEAM AWARD (2017)

In recognition of excellent contributions as a valued team member in support of NASA's human spaceflight programs.

### AMERICAN SOCIETY OF MECHANICAL ENGINEERS PROPULSION BEST PAPER (2016)

Co-authored technical paper titled, " Leak Rate Quantification Method for Gas Pressure Seals with Controlled Pressure Differential," awarded the American Society of Mechanical Engineers Propulsion Best Paper by the ASME Liquid Propulsion Committee at the 52<sup>nd</sup> AIAA/SAE/ASEE Joint Propulsion Conference in Salt Lake City, UT.

### NINE SIGMA NASA CHALLENGE I: TEXTILE TEST METHOD (2016)

Co-mentored The University of Akron student team that submitted a winning proposal on how to test spacesuit material for performance in different kinds of planetary environments.

### THE UNIVERSITY OF AKRON FIVE YEAR SERVICE AWARD (2015)

Awarded to an employee after five years of continuous service and dedication to The University of Akron.

### NASA POSTDOCTORAL PROGRAM FELLOWSHIP RECIPIENT (2009-2010)

A one to three year fellowship offering research opportunities to highly talented individuals to engage in ongoing NASA research programs.

### CRAIG J. MILLER MEMORIAL AWARD (2009)

Awarded to a student who has shown outstanding academic achievement in civil engineering.

### CLOVERLEAF ACADEMIC HALL OF FAME (2009)

Recognizes a student from Cloverleaf High School who has earned an advanced degree.

### SAADA FAMILY GRADUATE FELLOWSHIP RECIPIENT (2006-2009)

A three year fellowship awarded to a most deserving graduate student pursuing an advanced degree in one of the disciplines in civil engineering.

## COMMUNITY SERVICE

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### LEWIS LITTLE FOLKS, CLEVELAND, OH (July 2017–present)

Board of Trustees Member-at-Large.

### LEWIS LITTLE FOLKS, CLEVELAND, OH (2016–present)

Member of the Staff Appreciation Committee.

### REVOLUTION THREE TRIATHLON, NATIONAL (2011–2014)

Member of the national amateur age group triathlon team.

January, 2018

MACEDONIA GIRLS FASTPITCH SOFTBALL U9, MACEDONIA, OH (2010)  
Pitching coach.

MC2STEM HIGH SCHOOL, CLEVELAND, OH (2010)  
Math tutor for high school students preparing for the Ohio Graduation Test.

SAINT COLUMBKILLE CATHOLIC CHURCH, PARMA, OH (2007)  
Youth retreat volunteer.