

**24th Annual Wisconsin Space Conference**  
***Commercial Space Flight***

**August 15, 2014**

BioPharmaceutical Technology Center  
Promega Corporation Campus  
Fitchburg, Wisconsin

**Presented by:**

**Wisconsin Space Grant Consortium**  
**BioPharmaceutical Technology Center Institute**  
**Orbital Technologies Corporation**

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**CONFERENCE PROGRAM**

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7:30-8:15am **Registration & Continental Breakfast**  
**Poster Drop Off** (formal poster session at 12:00-1:30pm)  
Bring posters to registration and staff will set them up.

**\*\*\* Plenary Session \*\*\***

8:15-8:30am **Welcome and Introduction**  
**Kevin Crosby**, Director of WSGC; Chair, Natural Science Division, Professor of Physics, Astronomy and Computer Science, Carthage College

8:30-9:15am **Session 1: Keynote Address**  
**Introduction: Michael LeDocq**, Chair, WSGC Advisory Council; Instructor, Department of Natural Science, Western Technical College

**Keynote Speaker: Jeff Johnson**, Environmental Control & Life Support Systems (ECLSS) Program Manager for SNC Dream Chaser

**\*\*\* Plenary Session \*\*\***

9:15-10:00am **Session 2: Team Projects**  
**Moderator: William Farrow**, WSGC Associate Director for Student Satellite Initiatives; Assistant Professor, Milwaukee School of Engineering

**Simpson Street Free Press**, *After-school Academic Newspaper*, **Mckenna Kohlenberg**, Assistant Editor; **Taylor Kilgore**, Assistant Editor; **Alex Lee**, Teen Editor; **Robin Mwai**, Teen Editor

**Balloon Payload Team**, *The Elijah Project - 2014 High Altitude Balloon Payload*

**Madeline Lambert**, University of Wisconsin-La Crosse  
**Jadee Kellogg**, Ripon College  
**Daniel Ochoa**, Milwaukee School of Engineering  
**Evan Schilling**, Milwaukee School of Engineering  
**Michael Stefik**, University of Wisconsin- Milwaukee  
**Michael Wiznitzer**, Milwaukee School of Engineering

**Balloon Launch Team**, *2014 Elijah High Altitude Balloon Launch Team Flight Results*

**Rachel Beyer**, Marquette University  
**Amber Koeune**, Milwaukee School of Engineering  
**Jordan Petrie**, Milwaukee School of Engineering  
**Leeta Russell**, Milwaukee School of Engineering  
**Michael Stefik**, University of Wisconsin- Milwaukee  
**Alana Tirimacco**, Milwaukee School of Engineering

10:00-10:15am **Morning Break**

**\*\*\* Concurrent Sessions -- Research Stream \*\*\***

10:15-11:45am

**Session 3R: Physical Sciences (Auditorium)**

**Moderator: Leah Simon**, Assistant Professor of Physics, Ripon College

**Madeline Wade**, *Searching for Gravitational Waves from Sub-Solar Mass Black Holes*, Graduate Student, Department of Physics, University of Wisconsin- Milwaukee

**Sydney Chamberlin**, *Black Holes, Lasers, and Data Analysis: Contributions to Gravitational Wave Searches with the Excess Power Pipeline*, Graduate Student, Department of Physics, University of Wisconsin- Milwaukee

**Colin Egerer**, *Clarifying the Role of Thermodynamics in Self-gravitating Dark Matter Systems*, Undergraduate Student, Department of Physics, University of Wisconsin- La Crosse

**Sean DuBois**, *Assessment of Ecosystem Photosynthetic Parameters Along Two California Climate Gradients*, Graduate Student, Nelson Institute for Environmental Studies, University of Wisconsin- Madison

**David Helminiak**, *Simulations of Granular Material Motion*, Undergraduate Student, Department of Computer Engineering, Marquette University

**Nathaniel Helminiak**, *Experiments with Granular Material Motion*, Undergraduate Student, Department of Mechanical Engineering, Marquette University

**\*\*\* Concurrent Sessions -- Education Stream \*\*\***

10:15-11:45am

**Session 3E: K-12 Education and General Public Outreach (Room 122)**

**Moderator: Carol Lutz**, Co-chair for Rockets for Schools, Sheboygan, WI

**Todd H. Treichel**, *Rocket Science for Educators Using Rocket Design and Simulation Software*, Senior Systems Engineer, Orbital Technologies Corporation; American Institute of Aeronautics and Astronautics (WI)

**Barbara Bielec**, *Science Outreach at the BTC Institute - Aerospace Outreach Program & Special Initiatives Program*, K-12 Program Director, BTC Institute

**Daniel Bateman**, *Teacher Workshop on Rocksim*, Executive Director, Spaceport Sheboygan

**John Heasley**, *Driftless Dark Skies Initiative: Training Astronomy Educators*, Space Science Educator, Star Stories

**Coggin Heeringa**, *Teaching Teachers*, Director, Crossroads at Big Creek

**Shelly Leshner**, *Promoting Women in Physics and Astronomy through a Distinguished Lecture Series*, Assistant Professor, Department of Physics, University of Wisconsin- La Crosse

11:45-1:15pm

**Lunch and Poster Session**

### \*\*\* Poster Session \*\*\*

**Facilitator: Mike LeDocq**, Chair, WSGC Advisory Council; Instructor, Department of Natural Science, Western Technical College

**Brian Harvey**, *Burn me Twice, Shame on Who? Testing for Wildfire Feedbacks in Forests of the US Northern Rocky Mountains*, Graduate Student, Department of Zoology, University of Wisconsin-Madison

**Michael Brusich**, *CAERENet*, Undergraduate Student, Department of Physics, Carthage College

**Justin Collins**, *Engineering Sustainable Space Nutrition Modules for Classroom Spiral Insertion*, Undergraduate Student, Department of Mechanical Engineering, Milwaukee School of Engineering and Sweet Water Foundation

**David Helminiak**, *Simulations of Granular Material Motion*, Undergraduate Student, Department of Computer Engineering, Marquette University

**Nathaniel Helminiak**, *Experiments with Granular Material Motion*, Undergraduate Student, Department of Mechanical Engineering, Marquette University

**Tyler Laszczkowski**, *Expanding Our Knowledge of Interstellar Neutral Hydrogen Shells*, Undergraduate Student, Department of Physics, University of Wisconsin- La Crosse

**Brendan Krull, Tessa Rundle, Kevin LeCaptain, Amelia Gear**, *The Onset of Normal Field Instability in a Ferrofluid in a Reduced Gravity Environment*, Undergraduate Students, Department of Physics, Carthage College

**Jon Woods and Luke Goetsch**, *Spatial ID Environmental Reader (SPIDER)*, High School Students, Software and Hardware Engineering, East Troy High School

**Balloon Payload Team**, *The Elijah Project - 2014 High Altitude Balloon Payload*

**Rachel Beyer**, Marquette University

**Amber Koeune**, Milwaukee School of Engineering

**Jordan Petrie**, Milwaukee School of Engineering

**Leeta Russell**, Milwaukee School of Engineering

**Michael Stefik**, University of Wisconsin- Milwaukee

**Alana Tirimacco**, Milwaukee School of Engineering

1:15-1:30pm

**Group Photograph (Atrium)**

### \*\*\* Research Stream \*\*\*

1:30-2:45pm

**Session 4R: Space Systems Engineering (Auditorium)**

**Moderator: Kevin Crosby**, Chair of Natural Science, Professor of Physics and Computer Science, Carthage College

**Aaron Olson**, *Implantation and Extraction of Helium from Lunar Regolith Simulant*, Graduate Student, Department of Engineering Physics, University of Wisconsin- Madison

**Jalal Nawash**, *Efficiency of Select Solar Cells at High Altitudes Using a Weather Balloon*, Assistant Professor, Department of Physics, University of Wisconsin- Whitewater

**Todd Treichel**, *Design and Development of LED Lighting System for Human Spacecraft*, Senior Systems Engineer, Orbital Technologies Corporation; American Institute of Aeronautics and Astronautics (WI)

**Jeff Clark**, *Remote Sensing of Physical Models in the Laboratory*, Professor, Department of Geology, Lawrence University

**Trent Cybela**, *Fire in Orbit: Equipping Commercial Spaceflight for Fighting Fires beyond Earth*, Undergraduate Student, ECLSS (Environmental Control and Life-Support Systems), Orbital Technologies Corporation & University of Wisconsin- Platteville

2:45-3:00pm

**Afternoon Break**

**\*\*\* Plenary Session \*\*\***

3:00-4:00pm

**Session 5: Rocket Teams**

**Moderator: William Farrow**, WSGC Associate Director for Student Satellite Initiatives; Assistant Professor, Milwaukee School of Engineering

**Rocket Team: First Place – Non-Engineering Division - Team Night Skies**

*The Flight of Wombat I*, **Christine Sutherland, Aaron Jarosh and Grace Zeit**, Undergraduate Students, University of Wisconsin-Sheboygan

**Rocket Team: Third Place – Engineering Division – Team Rocket**

**Alex Folz, Collin Matthews and Justin Collins**, Undergraduate Students, Department of Mechanical Engineering, Milwaukee School of Engineering (non-presenting team members: Garrett Sauber and Roberto Fernandez)

**Rocket Team: Second Place – Engineering Division – Woosh Generator**

**Eric Johnson and Leeta Russell**, Undergraduate Students, Milwaukee School of Engineering, Department (non-presenting team members: James Ihrcke, Kathryn Baisley, Kirsti Pajunen, Stephan Skibinski)

**Rocket Team: First Place – Engineering Division - Pioneer Rocketry**

**Trent Cybela, Luke Sackash, Andrew Heindl, Jacob Ellenberger and Maria Smiles**, *High Aspirations: Rocketry at the University of Wisconsin–Platteville*, Undergraduate Students, Multiple-Discipline Engineering (Mechanical, EP, Software, Electrical)

4:00-4:30pm

**Awards Ceremony and Closing Remarks**

4:30-5:30pm

**Reception**