

WISCONSIN SPACE GRANT CONSORTIUM

32ND ANNUAL WISCONSIN SPACE CONFERENCE

DRONES IN SPACE FRIDAY, AUGUST 12, 2022

Hosted by the Carroll University College of Arts and Sciences



The Wisconsin Space Grant Consortium (WSGC) is a joint effort between NASA and organizations statewide. WSGC is dedicated to helping provide Wisconsin students, researchers, educators, businesses, not-for-profit organizations and other stakeholders with the tools, connections and resources needed to make the aerospace community in the state of Wisconsin thrive and grow.

CONSORTIUM OFFICE/LEAD INSTITUTION

Wisconsin Space Grant Consortium Carthage College 2001 Alford Park Drive Kenosha, WI 53140 262.551.6054 www.spacegrant.carthage.edu spacegrant@carthage.edu University of Wisconsin – Superior University of Wisconsin – Whitewater Western Technical College Wisconsin Department of Transportation Wisconsin Lutheran College

WSGC PARTNERS

Aerogel Technologies, LLC Wisconsin Department of Public Instruction

WSGC AFFILIATE MEMBERS

Aerogel Technologies, LLC AIAA – Wisconsin Section Alverno College **Biopharmaceutical Technology Center Institute** Carroll University Carthage College College of Menominee Nation Fox Valley Technical College Gateway Technical College Lawrence University Marquette University Medical College of Wisconsin Milwaukee School of Engineering **Ripon College** St. Norbert College Sierra Space Spaceport Sheboygan University of Wisconsin – Green Bay University of Wisconsin – Green Bay, Sheboygan Campus University of Wisconsin – La Crosse University of Wisconsin – Madison University of Wisconsin – Milwaukee University of Wisconsin - Milwaukee at Washington County University of Wisconsin – Oshkosh University of Wisconsin - Oshkosh Fox Cities University of Wisconsin – Parkside University of Wisconsin – Platteville University of Wisconsin – River Falls University of Wisconsin – Stevens Point



Brochure Design by Sydni Villanueva, Student, Carroll University

Schedule at a Glance

| PRE-SESSION | | |
|--------------------|--------------------------------------------------------------|------------------------------|
| 7:30 | Registration | CC Stackner Ballroom: 150 |
| | Presenter Check-in | CC Stackner Ballroom: 150 |
| | Breakfast | Main Dining Room |
| | Individual Photos | CC MacAllister Boardroom: 28 |
| 8:15 | Welcome & Introductions | CC Stackner Ballroom: 150 |
| SESSION 1 | Plenary Speaker | CC Stackner Ballroom: 150 |
| 8:30 | Tim Canham | |
| SESSION 2 | Program Highlights | CC Stackner Ballroom: 150 |
| 9:15 | | |
| SESSION 3 | Posters & Networking | PIT, Lower Level: 100 |
| 10:00 | | |
| SESSION 4A | Higher Education Faculty Programs | Hastad Hall 145: 100 |
| 11:00 | | |
| SESSION 4B | Aerospace Outreach Programs | Hastad Hall 160: 64 |
| 11:00 | | |
| LUNCH | | Main Dining Room |
| 12:00 | | |
| GROUP PHOTO | | Main Lawn |
| 1:00 | | |
| | Student Scholarship, Fellowship, and Internships | |
| SESSION 5A | Programs | Hastad Hall 145: 100 |
| 1:15 | | |
| SESSION 5B | Student Scholarship, Fellowship, and Internships Programs | Hastad Hall 160: 64 |
| 1:15 | riograms | |
| BREAK | | |
| 3:00 | | |
| Session 6A | Research Infrastructure Faculty Programs | Hastad Hall 145: 100 |
| 3:15 | | |
| Session 6B | Special Initiatives Programs | Hastad Hall 160: 64 |
| 3:15 | | |
| SESSION 7 | Posters & Networking | PIT, Lower Level: 100 |
| 4:30 | | |
| Session 8 | Plenary Speaker | CC Stackner Ballroom: 150 |
| | DINNER | |
| 5:30 | Christine Bolz | |
| 6:00 | Matthew Wallace | |
| 6:50 | Christopher Stockdale | |
| | Kevin Crosby | |
| | I | |

KEYNOTE SPEAKERS



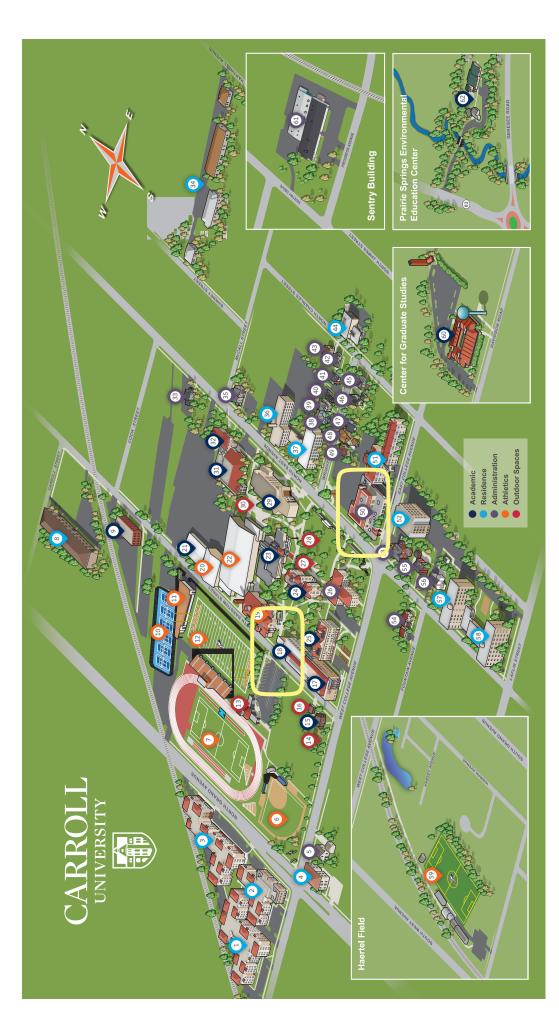
TIM CANHAM

Tim Canham is the Software and Operations Lead for Mars Helicopter for NASA/JPL, which was deployed as part of the Perseverance Rover project. Tim has 30 years of software experience at JPL with a number of projects including the Deep Space Network, Cassini, Curiosity, and the VITAL COVID ventilator. Tim is also the architect for the Prime flight software framework available on GitHub.

MATTHEW WALLACE

Matt Wallace is the Deputy Director for Planetary Science at NASA's Jet Propulsion Laboratory. Prior to this role, he served as the Mars 2020 Project Manager. He initiated the concept work for the Mars 2020 mission, and has led the development and implementation team since 2013. The spacecraft and Perseverance rover launched in July of 2020 and landed in February 2021, beginning its surface mission of in-situ science and technology experiments, and collecting samples for return to Earth by a future mission.





Campus Map

- 10. Jean Kilgour-Trailblazer Tennis Center Education Hall

 - 11. Quad/Graphics Team Center
 - 12. Schneider Stadium
- 13. Crofts Morava Pavilion

1. Pioneer Hall Prairie Hall

2 с.

- 14. Community Garden
- Frontier Hall

15. Mathematics

16. Bike Shop

- 4. College Avenue Apartments

 - 5. Richard Smart House
- Jean Kilgour Field . 0
- 7. Dennis Punches Track and Field Complex
- 8. Carroll Street Apartments
- 19. Ganfield Gymnasium
- 23. Todd Wehr Memorial Library 29. Shattuck Music Center 22. Van Male Field House 31. Otteson Theatre 27. Medallion Plaza 30. Van Male Plaza 26. Voorhees Hall 25. Rankin Hall 28. Main Lawn 24. Main Hall 18. Doug and Nancy Hastad Hall 17. Michael and Mary Jaharis Science Laboratories
- 32. Humphrey Memorial Chapel and Art Center 41. Public Safety 21. Physical Therapy Building 20. Van Male Natatorium
- 34. Hartwell Avenue Apartments 38. A. Paul Jones Scholars Hall 33. College of Health Sciences 39. Betty Lou Tikalsky House 40. Enterprise House 36. Swarthout Hall 35. Business Hall 37. Steele Hall
- 45. Student Health Services 49. Walter Young Center 44. Charles Street Hall 51. Shirley Hilger Hall 46. Discovery House 53. MacAllister Hall 50. Campus Center 47. Voyager House 43. Explorer House 48. Wright House 52. Kilgour Hall
- 62. Paul Fleckenstein Research Laboratory 60. Center for Graduate Studies 61. Sentry Building
- 58. South Bergstrom Hall 57. North Bergstrom Hall 56. Sneeden House 59. Haertel Field

55. President's House

carrollu.edu/map Explore online at

54. Student Affairs

42. Human Resources

| August 12 | 2, 2022 | | | | |
|-----------------|-------------------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------|-------------------|------------------------------------------------------------------------|
| PRE- SESSION | | | | | |
| 7:30 | Registration | | | | CC Stackner Ballroom: 150 |
| | Presenter Check-in | | | | CC Stackner Ballroom: 150 |
| | Breakfast | | | | Main Dining Room |
| | Individual Photos | | | | CC MacAllister Boardroom: 28 |
| 8:15 | Welcome & Introductions | | | | CC Stackner Ballroom: 150 |
| | | Kareem Muhammad | Welcome | | |
| | | Kevin Crosby/Christine Bolz | WSGC Opportunities Highlighted | | |
| SESSION 1 | Plenary Speaker | Michael Mortensen | | | CC Stackner Ballroom: 150 |
| 8:30 | | Tim Canham | Drones on Mars: The Ingenuity Mars Helicopter | | |
| SESSION 2 | Program Highlights | William Farrow | | | CC Stackner Ballroom: 150 |
| 9:15 | Special Initiatives Program: | Amy Prevost | Launching a Career in Biotechnology: A Laboratory-Based Introduction to the Field | Molecular Biology | BTC Institute |
| 9:30 | Women in Aviation: | Laurel Lindemann, Emily Rose Yank | Women in Aviation Experience | Aviation | Fox Valley Technical College, Gateway Technical College |
| 9:45 | Industry Internship | Bryce Vieth | Test Engineering at Sierra Space | Engineering | University of Wisconsin - Madison |
| 10:00 | Undergraduate Research/Aerospace | | Zero-Gravity | - | Zero-Gravity |

| | Posters & | Christopher | | | PIT, Lower |
|---------------|--------------------------------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------|
| | Networking | Stockdale | | | Level: 100 |
| 10:15 | Individual Awardee Photos | | | | |
| 10.15 | 11000 | | Predicting Performance and Roll Rate | | |
| Poster | Collegiate Rocket | | Minimization of a High Powered Model | | Marquette |
| #1 | Launch: | Nicole Schilder | Rocket | Engineering | University University of |
| Poster #2 | Collegiate Rocket Launch: | Jordan Cioni, Ellyssa Purdy | Phantastic Pheonoms | Engineering | , Wisconsin – Green Bay |
| Poster #3 | Collegiate Rocket | Alexander Hornung | Roll Stabilized Rocket – Sialia | Engineering | University of Wisconsin – Platteville |
| Poster | Midwest Rocket | | UW Madison Midwest Rocket | | University of Wisconsin – |
| #4 | Launch: | Suhrer Elizabeth Bohlman, | Launch Team Pioneer Rocketry | Engineering | Madison University of |
| Poster #5 | Midwest Rocket Launch: | , | MRL 2022 Competition | Engineering | Wisconsin – Platteville |
| Poster | | Emmett Marinic, | MARS: NASA Lunabotics | | Marquette |
| #6 | NASA Competition: | Jillian Stinehart | Competition | Engineering | University |
| Poster #7 | Unmanned Aerial Vehicle Research: | , | Delineating wetland vegetation species using a UAV- mounted multi- spectral camera and computer-aided classification | Geoscience | Lawrence University, University of Wisconsin – La Crosse, University of Wisconsin – Whitewater |
| Poster | STEM Bridge | | Promoting STEM to the Greater Green | | University of Wisconsin – |
| #8 | Undergraduate | Ellyssa Purdy Caleb Collar, Angelica Cuevas, | Bay Area Carthage Space Sciences: Canopy | Engineering | Green Bay |
| Poster #9 | | Riley Johnson, Carissa Kiehl | Near-IR Observing Project | Engineering | Carthage College |
| Poster #10 | | Kevin Totts, Sydney Pelnar, Caleb Collar, Andrew Valentini, Hector Rauda | Carthage Space Sciences: Fiber Optic Sensing System | Engineering | Carthage College |
| Poster | Undergraduate | Justin Wheeler, | Carthage Space Sciences: Microgravity Ullage | | Carthage |
| #11 | Scholarship: | Gabriela Carranza | Detection | Engineering | College |
| | Undergraduate | | | | |

| | | Kaasia | | | |
|----------|----------------------|--------------------|-----------------------|--------------------|---------------------|
| | | Kassia | | | |
| | | Schraufnagel, | | | |
| | | Gabriela Carranza, | | | |
| | | Dalton Callow, | Carthage Space | | |
| | | Ayushi Chandel, | Sciences: MPG- | | |
| | Undergraduate | Angelica Cuevas, | Propellant Refueling | | |
| Poster | - | Alec DiGirolamo, | and On-Orbit | | Carthage |
| #13 | | Callie Koenig | Transfer Operations | Engineering | College |
| #15 | Scholarship. | | EXCLAIM – Novel line | Lingineering | concec |
| | | | | | 11 |
| <u> </u> | | | intensity mapping on | | University of |
| Poster | | | a balloon-borne | | Wisconsin – |
| #14 | Research Fellowship: | Faizah Siddique | telescope | Physics | Madison |
| | | | SOApp (Simple | | |
| | | | Online Automated | | |
| | | | Plant Phenomics): | | |
| | | | Application for | | |
| | | | measuring plant | | University of |
| Poster | Undergraduate | | vegetative | Biological | Wisconsin – |
| #15 | Research Fellowship: | Lucas Bauer | phenotypes | Sciences/Medicine | Madison |
| Poster | Higher Education | | Microscopy of | , | Lawrence |
| #16 | • | Andrew Shanahan | Brownian Motion | Physics | University |
| | | | Synthesis of | | onversity |
| | | | Nanofluidic | | |
| | | | | | |
| | | | Suspensions With | | |
| | | | High Solid Loading | | |
| | | | and Low Viscosity | | |
| | Research | | For Energy Storage | | University of |
| Poster | Infrastructure | | and Conversion | | Wisconsin – La |
| #17 | Program: | Elijah Behnke | Applications | Chemistry | Crosse |
| | | | Towards Machine | | |
| | | | Learning (ML)-based | | |
| | | | Modeling of Wireless | | |
| | | | Signal Degradation | | |
| | | | while Transmitting | | |
| | | | from Base-stations | | University of |
| Poster | Early-Stage | | to LEO Satellites and | Computer | , Wisconsin – La |
| #18 | Investigator: | Eric Jahns | Vice-versa. | Sciences/Physics | Crosse |
| | | | Extended, high- | ,, | |
| | | | temperature cooling | | |
| | Research | | of lava tube | | University of |
| Dector | | | | | Wisconsin – |
| Poster | Infrastructure | Lorgo Acosta | interiors: Analog for | Consigned | |
| #19 | Program: | Jorge Acosta | Venus | Geoscience | Milwaukee |
| | | | Modal Propellant | | |
| Poster | NASA Internship | | Gauging at Johnson | Physics / Computer | Carthage |
| #20 | Program: | Amanda Strebe | Space Center | Science | College |
| | | | Satellite-HAND | | |
| | | | dataset to predict | | University of |
| Poster | NASA Internship | Rohan | accurate flood | | Wisconsin – |
| #22 | | Ramachandran | inundations | Data Science | Madison |
| | | | AI/ML | | University of |
| Poster | NASA Internship | | Transformation | | Wisconsin – |
| #21 | • | Caitlin Kitchen | Thrust Initiative | Computer Science | Milwaukee |
| #Z1 | Flugram: | | in use initiative | computer science | winwaukee |

| Poster #26 | Special Initiatives | Chelsea Cook, Olivia Smithmier | Plate for Further Learning | Astronomy | GLAS Educatio |
|---------------|-------------------------------------|-----------------------------------|-------------------------------------|---------------------|------------------------|
| | | | Spectroscopic Plug | | |
| #25 | Research Fellowship: | | hydrogen Revitalizing the SDSS | Astronomy | IVIAUISOII |
| Poster #25 | Professional Bosoarch Followshin | Danial Dubarcould | multi-phase neutral | Actronomy | Wisconsin – Madison |
| D + | WSGC Graduate & | | medium: the role of | | University of |
| | | | diffuse interstellar | | Linio and the f |
| | | | molecular gas in the | | |
| | | | From atomic to | | |
| #24 | Research Fellowship: | Lucia White | for space agriculture | Sciences/Medicine | Madison |
| Poster | Clark Memorial | | Arabidopsis thaliana | Biological | Wisconsin – |
| | Dr. Laurel Salton | | response of | | University of |
| | | | the oxidative stress | | |
| | | | on gravitropism and | | |
| | | | organic compounds | | |
| | | | harzianum volatile | | |
| | | | Trichoderma | | |
| | | | The effects of | | |
| #23 | • | Laura Jones | Migration Plan | Technology | Milwaukee |
| Poster | NASA Internship | | Institutional | Science/Information | Wisconsin – |
| | | | Challenges of Creating an Inter- | Archival | University of |
| | | | Misadventures: The | | |
| | | | Migration | | |

| SESSION | Higher Education | | | | Hastad Hall 145: |
|---------|-------------------|-----------------|----------------------------|-------------------|------------------|
| 4A | Faculty Programs | Lindsay McHenry | | | 100 |
| | | | A Community of | | |
| | | | Practice Focusing on | | |
| | | | Grit and Self- | | |
| | | | regulation in | | |
| | Higher Education | | Engineering | | Marquette |
| 11:00 | Incentives: | Somesh Roy | Education | Engineering | University |
| | | | Taking Zebrafish for | | |
| | | | a Spin: Establishing | | |
| | | | Experimental | | |
| | | | Parameters for | | |
| | | | Simulated | | |
| | Higher Education | | Microgravity with | Biological | Carthage |
| 11:15 | Incentives: | Andrea Henle | Zebrafish | Sciences/Medicine | College |
| | | | Nanostructured Zinc | | |
| | | | Oxide Gas Sensors | | |
| | | | for Space Travel: | | |
| | | | Development of a | | |
| | | | Course-Based | | |
| | | | Undergraduate | | University of |
| | Higher Education | | Research Experience | | Wisconsin – |
| 11:30 | Incentives: | Steven Girard | (CURE) | Chemistry | Whitewater |
| | | | Student Design of a | | |
| | | | 10,000 ft Altitude | | |
| | | | Commercial Off-The- | | Marquette |
| 11:45 | NASA Competition: | John Moore | Shelf Rocket | Engineering | University |

| SESSION | Aerospace Outreach | | | | Hastad Hall 160: |
|---------|--------------------------------|-----------------|-----------------------------------------------------------------------------|------------------|-----------------------------------------------------------|
| 4B | Programs | Brian Ewenson | | | 64 |
| | Aerospace Outreach | | | | Central High |
| 11:00 | Program: | James Senft | Youth In Aviation | Aviation | School |
| 11:15 | Aerospace Outreach Program: | Coggin Heeringa | Bringing Back the "Oh, Wows!" | Astronomy | Crossraods at Big Creek, Inc. |
| 11:30 | Aerospace Outreach | Stephen Myers | Getting an aviation scholarship program off the ground. | Aviation Careers | EAA Chapter 838 Foundation Aviation Scholarships |
| | Aerospace Outreach | | Rocket Science for | | |
| 11:45 | Program: | Todd Treichel | Future Engineers | Engineering | AIAA |
| Lunch | | | | | Main Dining Hall |
| 12:00- | - - | | | | |
| 1:00 | Table Talks: | | | | |
| | | Cassi Bassong | Conducting Research in Micro-gravity | | |
| | | Nathan Salowitz | Leveraging Local Industry for Fundamental Research through WSGC | | |
| | | Lindsay McHenry | Planetary Geology | | |
| | | Robert Morrow | Plants in Space,Advanced Life Support, Environmental Systems | | |
| | | Beth Johnson | Things to consider when thinking about graduate school | | |
| | | Brian Ewenson | Training Space Shuttle Astronauts | | |
| | | William Farrow | WSGC Team and Summer Project Opportunities | | |
| 1:00 | Group Photo | | | | Main Lawn |

| | Student Scholarship, | | | | |
|------|-----------------------------|--------------------|----------------------------------|-------------------|------------------|
| | Fellowship, and | | | | Hastad Hall 145: |
| 5A | Internships Programs | | | | 100 |
| | | Justin Wheeler, | | | |
| | | Callie Koenig, | | | |
| | | Kassia | | | |
| | | Schraufnagel, | Carthage Space | | |
| | Undergraduate | Carrisa Kiehl, | Sciences: Modal | | Carthage |
| 1:15 | | Andrew Valentini | Propellant Gauging | Engineering | College |
| | | | External Testing for | 00 | |
| | | | the Dream Chaser [®] | | University of |
| | Industry Internship | | Program – EMC/EMI | | Wisconsin – |
| 1:30 | | Conner Bellile | and Pyroshock | Engineering | Madison |
| | | | Exploring | | |
| | | | rhizosphere | | |
| | | | microbial | | |
| | | | communities in | | |
| | | Amber Newman, | hydroponically | | Lawrence |
| 1:45 | Investigator: | Madeline Taylor | grown leafy greens | Geoscience | University |
| | | | Studying the | | |
| | | | Corrosion | | |
| | | | Characteristics of | | |
| | | | Electrogalvanized | | |
| | | | Carbon Steel | | |
| | Research | | Substrates Using | | University of |
| 2.00 | Infrastructure | | Simplified Plating | Chausiatur (| Wisconsin – La |
| 2:00 | Program: | Ella Mack | Chemistry Timing Pulsars with | Chemistry | Crosse |
| | WSGC Graduate & | | CHIME and the | | University of |
| | Professional | | NANOGrav 15yr | | Wisconsin – |
| 2.15 | Research Fellowship: | Gabriella Agazie | Dataset | Physics | Milwaukee |
| 2.15 | nesed on renowship. | | Robust Foreground | | |
| | WSGC Graduate & | | Removal for 21cm | | University of |
| | Professional | | Intensity Mapping | | Wisconsin – |
| 2:30 | Research Fellowship: | John Podczerwinski | | Physics | Madison |
| | | | Spaceflight Changes | , | |
| | | | Ion Transport: The | | |
| | | | Role of the Cyclic | | |
| | WSGC Graduate & | | , Nucleotide Gated | | University of |
| | Professional | | Channels in Rapid | Biological | Wisconsin – |
| 2:45 | Research Fellowship: | Johnny Johns | Plant Signaling | Sciences/Medicine | Madison |

| | Student Scholership | | | | |
|---------|-----------------------------------------|--------------------------------------|---------------------------------------------|---------------------------------|---------------------------------|
| SESSION | Student Scholarship, Fellowship, and | | | | Hastad Hall 160: |
| 5B | Internships Programs | John Borg | | | 64 |
| JD | internships Programs | JOHIN BOLK | | | 04 |
| | | | Developing Vision- | | |
| | | | based Object | | |
| | - · | | Detection and | | |
| | Research | | Localization System | | University of |
| 4.45 | Infrastructure | | for Robot Object | _ | Wisconsin - |
| 1:15 | Program: | Md Tanzil Shahria | Manipulation | Engineering | Milwaukee |
| | | | Low-Latency | | |
| | | | Searches for Gravitational Waves | | |
| | WSGC Graduate & | | | | Liniversity of |
| | Professional | | using the GstLAL | | University of Wisconsin - |
| 1.20 | | Amanda Davlar | Data Analysis | Dhusies | Milwaukee |
| 1:30 | Research Fellowship: | Amanda Baylor | Pipeline | Physics | willwaukee |
| | WSGC Graduate & | | Numerical Simulations of White | | Liniversity of |
| | | | | | University of |
| 1.45 | Professional | Circus al Uluma a bases | Dwarf Tidal | A | Wisconsin - |
| 1:45 | Research Fellowship: | Sinead Humphrey | Disruption Events | Astronomy | Milwaukee |
| | | | Sierra Space | | University of |
| 2.00 | Industry Internship | Deniemin Chanal | Propulsion | Fraincarina | Wisconsin - |
| 2:00 | Program: | Benjamin Chapel | Engineering | Engineering | Madison |
| | | | Exploring | | |
| | | | rhizosphere | | |
| | | | microbial | | |
| | Foulst Dessearch | | communities in | | |
| 2.45 | - | Madeline Taylor, | hydroponically | C | Lawrence |
| 2:15 | initiative: | Amber Newman | grown leafy greens | Geoscience | University |
| | | Angelica Cuevas, | Carthage Space | | |
| | | Riley Johnson, | Sciences: Canopy | | |
| | | Sydney Pelnar, Héctor Rauda, Joey | Near-IR Observing | | Carthaga |
| 2:30 | Scholarship: | - | Project Revival & | Engineering | Carthage College |
| 2.30 | Scholarship. | Sachtieben | Progress A Datailed | Lingineering | College |
| | | | A Detailed | | University of |
| | Undergraduate | | Photometric Analysis | | Wisconsin - |
| 2.45 | Research Fellowship: | Miranda Corsuch | of Early-Type Spiral Galaxies in Pairs | Astronomy | Steven's Point |
| 2.45 | Research | Will anua Gorsuch | Galaxies III Palls | Astronomy | Stevens Point |
| Session | Research Infrastructure Faculty | | | | Hastad Hall 145: |
| 6A | Programs | Robert Morrow | | | 100 Hastad Hall 145: |
| | _ | | | | 100 |
| 3:00 | Break | | Analis C.I. | | |
| | | | Analysis of shape- | | |
| | D ' | | memory-alloy fiber | | |
| | Research | | interface strength for | | University of |
| 2.1 | Infrastructure | Nathan Salowitz | optimization of self- healing composites | Engineering | Wisconsin - |
| 3:15 | Program: | INALIIAII SAIUWILZ | . . | Engineering | Milwaukee |
| | Decem-l- | | Spectral characterization of | | Linivorsity of |
| | Research | | | | University of |
| 2.20 | Infrastructure | Pocio Duchasna | urban trees in | Goossionse | Wisconsin - |
| 3:30 | Program: | Rocio Duchesne | Southern Wisconsin | Geoscience | Whitewater |
| | Research | | Effect of X-Ray and Neutron Radiation | | University of |
| | Infrastructure | | | Piological | University of Wisconsin - La |
| 2.45 | | Alder Vu | Exposure on Circadian Rhythms | Biological Sciences/Medicine | |
| 3:45 | Program: | AIUEI TU | | Sciences/Medicine | Crosse |

| | Research Infrastructure | | Ultrasonic Inspection | | University of Wisconsin - |
|--------------|----------------------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------|
| 4:00 | | Nathan Salowitz | of Liquid Filled Pressure Vessels | Engineering | Milwaukee |
| 4.00 | Program. | Nathan Salowitz | Detection of Aquatic | Engineering | willwaukee |
| 4:15 | Research Infrastructure Program: | Gargi Chaudhuri | Invasive Plants Using Deep Learning Based Semantic Segmentation Approach | Geoscience | University of Wisconsin - La Crosse |
| Session | Special Initiatives | J | | | Hastad Hall 160: |
| 6B | Programs | Daniel Rust | | | 64 |
| 3:00 | Break | | | | |
| 3:15 | Special Initiatives | Amy Prevost | Engaging Young Learners and Teachers with Active Learning for STEM Literacy | Biological Sciences/Medicine | BTC Institute |
| 5.15 | r togrann | | Literacy | Selences, weaterine | Women in |
| 3:30 | Special Initiatives Program: | Meredith Alt | Madison Youth Aviation Club Filling STEM pipeline | Youth education outreach | Aviation International& Partners |
| 3:45 | Special Initiatives Program: | Chelsea Cook, Olivia Smithmier | Revitalizing the SDSS Spectroscopic Plug Plate for Further Learning | Astronomy | GLAS Education |
| 4:00 | Special Initiatives Program: | Fareed Guyot | Willa Flies Again: Connecting Underserved Youth to Aviation | Youth education | Willa Brown Aviation Academy |
| 4:15 | Special Initiatives | Wayne Vohnoutka | Planetarium Curriculum Alignment and Dual Language | Astronomy | Horwitz- DeRemer Planetarium |
| | | | | | |
| | Posters & | Christopher | | | PIT, Lower |
| 7 | Networking | Stockdale | T | | Level: 100 |
| 4:30 | Poster | | | | |
| Poster #1 | Collegiate Rocket Launch: | Nicole Schilder | Predicting Performance and Roll Rate Minimization of a High Powered Model Rocket | Engineering | Marquette University |
| | Eddifell. | | | | University of |
| Poster #2 | Collegiate Rocket Launch: | Jordan Cioni, Ellyssa Purdy | Phantastic Pheonoms | Engineering | Wisconsin - Green Bay |
| Poster #3 | Collegiate Rocket Launch: | Alexander Hornung | Roll Stabilized Rocket - Sialia | Engineering | University of Wisconsin - Platteville |
| Poster #4 | Midwest Rocket Launch: | | UW Madison Midwest Rocket Launch Team | Engineering | University of Wisconsin - Madison |

| Poster | Midwest Rocket | Elizabeth Bohlman, Brian Lee | Pioneer Rocketry MRL 2022 | | University of Wisconsin - |
|------------|-----------------------------|---------------------------------|------------------------------|-------------------|------------------------------|
| #5 | | Jacqueline Muller | Competition | Engineering | Platteville |
| #5 | Launen. | | MARS: NASA | Lingineering | Thatteville |
| Poster | | Emmett Marinic, | Lunabotics | | Marquette |
| #6 | NASA Competition: | | Competition | Engineering | University |
| #0 | NASA competition. | Jillan Stinenart | competition | Lingineering | - |
| | | | Delineating wotland | | Lawrence |
| | | | Delineating wetland | | University, |
| | | 6 | vegetation species | | University of |
| | | Addison | using a UAV- | | Wisconsin - La |
| | | DeShambo, Ellie | mounted multi- | | Crosse, |
| . . | | Stewart, Sophie | spectral camera and | | University of |
| Poster | Unmanned Aerial | | computer-aided | | Wisconsin - |
| #7 | Vehicle Research: | Williams | classification | Geoscience | Whitewater |
| | | | Promoting STEM to | | University of |
| Poster | STEM Bridge | | the Greater Green | | Wisconsin - |
| #8 | Scholarship: | Ellyssa Purdy | Bay Area | Engineering | Green Bay |
| | | Caleb Collar, | Carthage Space | | |
| | | Angelica Cuevas, | Sciences: Canopy | | |
| Poster | Research | Riley Johnson, | Near-IR Observing | | Carthage |
| #9 | Scholarship: | Carissa Kiehl | Project | Engineering | College |
| | | Kevin Totts, | | | |
| | | Sydney Pelnar, | | | |
| | Undergraduate | | Carthage Space | | |
| Poster | | Andrew Valentini, | Sciences: Fiber Optic | | Carthage |
| #10 | | Hector Rauda | Sensing System | Engineering | College |
| | o cho chi o hipi | | Carthage Space | | concec |
| | Undergraduate | | Sciences: | | |
| Poster | - | Justin Wheeler | | | Carthago |
| | | Justin Wheeler, | Microgravity Ullage | Fraziraanina | Carthage |
| #11 | - | Gabriela Carranza | Detection | Engineering | College |
| _ . | Undergraduate | | | | C 11 |
| Poster | Research | | Carthage Space | _ | Carthage |
| #12 | Scholarship: | Callie Koenig | Sciences: MPG-ISS | Engineering | College |
| | | Kassia | | | |
| | | Schraufnagel, | | | |
| | | Gabriela Carranza, | | | |
| | | Dalton Callow, | Carthage Space | | |
| | | Ayushi Chandel, | Sciences: MPG- | | |
| | - | Angelica Cuevas, | Propellant Refueling | | |
| Poster | | Alec DiGirolamo, | and On-Orbit | | Carthage |
| #13 | Scholarship: | Callie Koenig | Transfer Operations | Engineering | College |
| | | | EXCLAIM - Novel line | | |
| | | | intensity mapping on | | University of |
| Poster | | | a balloon-borne | | Wisconsin - |
| #14 | Research Fellowship: | Faizah Siddique | telescope | Physics | Madison |
| | •• | | SOApp (Simple | | |
| | | | Online Automated | | |
| | | | Plant Phenomics): | | |
| | | | Application for | | |
| | | | measuring plant | | University of |
| Poster | Indorgraduate | | | Biological | Wisconsin - |
| | Undergraduate | Lucas Paular | vegetative | Biological | |
| #15 | Research Fellowship: | | phenotypes | Sciences/Medicine | Madison |
| Poster | Higher Education | • | Microscopy of | | Lawrence |
| #16 | Initiativo | Andrew Shanahan | Brownian Motion | Physics | University |

| | | | Synthesis of Nanofluidic | | |
|---------------|----------------------|------------------|---------------------------------------------|---------------------|------------------|
| | | | | | |
| | | | Suspensions With | | |
| | | | High Solid Loading | | |
| | | | and Low Viscosity | | |
| | Research | | For Energy Storage | | University of |
| Poster | Infrastructure | | and Conversion | | Wisconsin - La |
| #17 | Program: | Elijah Behnke | Applications | Chemistry | Crosse |
| | | | Towards Machine | | |
| | | | Learning (ML)-based | | |
| | | | Modeling of Wireless | | |
| | | | Signal Degradation | | |
| | | | while Transmitting | | |
| | | | from Base-stations | | University of |
| Poster | Early-Stage | | to LEO Satellites and | Computer | Wisconsin - La |
| #18 | Investigator: | Eric Jahns | Vice-versa. | Sciences/Physics | Crosse |
| | | | Extended, high- | | |
| | | | temperature cooling | | |
| | Research | | of lava tube | | University of |
| Poster | Infrastructure | | interiors: Analog for | | Wisconsin - |
| #19 | Program: | Jorge Acosta | Venus | Geoscience | Milwaukee |
| | | | Modal Propellant | | |
| Poster | NASA Internship | | Gauging at Johnson | Physics / Computer | Carthage |
| #20 | Program: | Amanda Strebe | Space Center | Science | College |
| | | | Satellite-HAND | | |
| | | | dataset to predict | | University of |
| Poster | NASA Internship | Rohan | accurate flood | | Wisconsin - |
| #22 | | Ramachandran | inundations | Data Science | Madison |
| | | | AI/ML | | University of |
| Poster | NASA Internship | | Transformation | | , Wisconsin - |
| #21 | | Caitlin Kitchen | Thrust Initiative | Computer Science | Milwaukee |
| | | | Migration | - | |
| | | | Misadventures: The | | |
| | | | Challenges of | | |
| | | | Creating an Inter- | Archival | University of |
| Poster | NASA Internship | | Institutional | Science/Information | Wisconsin - |
| #23 | Program: | Laura Jones | Migration Plan | Technology | Milwaukee |
| | | | The effects of | | |
| | | | Trichoderma | | |
| | | | harzianum volatile | | |
| | | | organic compounds | | |
| | | | on gravitropism and | | |
| | | | the oxidative stress | | |
| | Dr. Laurel Salton | | response of | | University of |
| Poster | Clark Memorial | | Arabidopsis thaliana | Biological | Wisconsin - |
| #24 | Research Fellowship: | Lucia White | for space agriculture | Sciences/Medicine | Madison |
| | | | From atomic to | | |
| | | | molecular gas in the | | |
| | | | diffuse interstellar | | |
| | WSGC Graduate & | | medium: the role of | | University of |
| Poster | Professional | | multi-phase neutral | | Wisconsin - |
| #25 | Research Fellowship: | Daniel Ryharczyk | hydrogen | Astronomy | Madison |
| #ZJ | Research renowship: | | | Astronomy | |
| | | | Revitalizing the SDSS Spectroscopic Plug | | |
| . . | Special Initiatives | Cholcon Cook | Plate for Further | | |
| | | n neisea Look | reale for Further | | |
| Poster #26 | | Olivia Smithmier | Learning | Astronomy | GLAS Education |

| Session 8 | Plenary Speaker | Michael Mortenson | | |
|----------------------|-----------------|--------------------------|-------------------------------------------------------------------------------------------------------------|------------------------------|
| NETWORKING/RECEPTION | | | | CC Stackner Ballroom: 150 |
| 5:30 | | Christine Bolz | Welcome/Dinner Served | |
| 6:00 | | Matthew Wallace | The Search for Ancient Life: Getting the Perseverence Rover and Ingenuity Helicopter to Mars | |
| 6:50 | | Christopher Stockdale | Poster Session Award Winner | |
| 6:55 | | Kevin Crosby | Closing Remark | |



CREATE a WSGC account *spacegrant.carthage.edu/about/login/* APPLY to WSGC programs of interest prior to application deadline *spacegrant.carthage.edu/apps/account/login/*

STUDENT PROGRAMS

SCHOLARSHIPS

Undergraduate Scholarship (UGS) Two-year Academic Institutions STEM Bridge Scholarship (SBS) Women in Aviation Scholarship (WAI) Application Deadline: October 3, 2022

Undergraduate Scholarship (UGS) Undergraduate Research Scholarship(UGR) Application Deadline: March 6, 2023

FELLOWSHIPS

Dr. Laurel Salton Clark Graduate & Professional Research Fellowship (LSC) WSGC Graduate & Professional Research Fellowship (GPP) Application Deadline: March 13, 2023

SUMMER RESEARCH PROGRAMS

Undergraduate Aerospace Design Program (UAD) Work period: June 1, 2023 – September 15, 2023 Application Deadline: February 13, 2023

Unmanned Aerial Vehicle Program (UAV) Work period: June 12, 2023 – September 15, 2023 Application Deadline: February 20, 2023

ROCKET PROGRAMS

Collegiate Rocket Launch (CRL) First Nations Launch (FNL) WSGC Notice of Intent (NOI) to compete due: Application Deadline: October 21, 2022 Launch Competition: April 29, 2023

Midwest Rocket Launch (MRL) WSGC Notice of Intent (NOI) to compete due: Application Deadline: (TBD)

FACULTY PROGRAMS

Early Stage Investigator Program (ESI) Higher Education Incentives (HEI) Research Infrastructure Program (RIP) Application Deadline: December 12, 2022 NASA Sponsored Competitions (OPP) Fall Application Deadline: November 14, 2022 Spring Application Deadline: February 6, 2023

OUTREACH & INDUSTRY PROGRAMS

Aerospace Outreach Program (AOP) Special Initiatives Program (SIP) Application Deadline: October 10, 2022