W. Andrew Jackson, PhD, FAAAS, BCEE, PE

Contact Information

Texas Tech University
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Education

Ph.D.	Engineering Science (Environmental Engineering)	1996	Louisiana State University, Baton Rouge
M.S.	Engineering Science (Environmental Engineering)	1993	Louisiana State University, Baton Rouge
B.S.	Biology	1990	Rhodes College, Memphis, TN

Professional Experience

Position Title	Year	Location
Chair	2022-	Dept. of Civil, Environmental and Construction Engineering, Texas Tech University
Presidents Excellence in Research Professor	2018-2024	
Environmental Program Lead	2014-2024	
Associate Chair	2012-2017	
Professor	2010-	
Graduate Advisor	2004-2010	
Associate Professor	2004-2010	
Assistant Professor	1998-2004	
Postdoctoral Scientist	1996-1998	Department of Civil Engineering, LSU
Research Associate	1995-1996	Department of Civil Engineering, LSU

Professional Service

- Universities Space Research Association Institutional Representative (2020-2023)
- Vice-Chair Fluids Physics Workshop NASA Glenn Research Center (2019)
- Universities Space Research Association National Scholarship Selection Committee (2021,2022)
- American Academy of Environ. Engineers and Scientists Board Certified Environ. Engineer (2016-)
- Senior Associate Editor- ***Air Water and Soil Pollution***. (2012-2018)
- Associate Editor-***Air Water and Soil Pollution***. (2004-2012)
- Editorial Board Member-***Air Water and Soil Pollution***. (2002-2004)
- Editorial Board- ***Environmental Toxicology and Chemistry*** *(*2004-2007 and 2010-2013*)*
- Ad-Hoc Manuscript Review (*Environmental Science and Technology, Journal of Geotechnical and Environmental Engineering, Journal of Bioremediation, Journal of Environmental Quality, Journal of Environmental Engineering, Journal of Environmental Engineering Science, Journal of Ecological Engineering, Journal of Agricultural and Food Chemistry, Geochimica et Cosmochimica Acta, Antarctic Science*)
- Association of Environmental Engineering and Science Professors (2003-present)
    - Co-Chair ENVE Program Leaders Committee 2019-2023
    - Board of Directors 2024-
- Institute of Aeronautics and Astronautics (2004-2012)
    - Life Sciences and Systems Technical Committee
        - Vice Chair; 2008-2009
        - Chair; 2009-2010
- American Chemical Society (2000-)

    - Thematic Program Selection Committee, (2008)
    - Selection Committee Morgan Early Career Lectureship (2016-2017)
- International Conference on Environmental Systems
    - Steering Committee 2006-2015
    - Vice Chair 2012
    - Chair 2013
- Session Chair (*GSA, 2005; ICES, 2006, 2008, 2009, 2010, 2021); SETAC 2004, 2007; AGU 2008; Battelle 2010,2012; Goldschmidt 2010; Battelle Remediation and Management of Contaminated Sediments 2023*)
- Texas Department of Transportation (Environmental Technical Advisory Panel), 1999-2008
- Santa Clara Water District (Science Advisory Committee for EPA Funded Study), 2006
- Hill Air Force Base (Perchlorate Study Advisory Committee), 2006-2007

Honors

- 2023 AEESP Distinguished Service Award
- 2018 ICES Award (International Conference on Environmental Systems)
- Presidents Excellence in Research Professorship (2018)
- Most Influential Faculty Member (WCOE 2018)
- Campus Diversity Award (2017) - Latino Faculty & Staff Assoc.
- AAAS Fellow (2016)
- Mortar Board Apple Polishing Award (2016)
- Barnie E. Rushing, Jr. Faculty Distinguished Research Award (2016) (**Highest University Research Award**)
- NASA Group Achievement Award (2016)
- Chair of 43rd International Conference on Environmental Systems
- Presidents Excellence in Teaching Award (2012)
- Provost's Integrated Scholar (2011)
- Most Influential Professor (2011) of the WCOE McCauley Winner (Highest award given to an undergraduate student).
- Inaugural Whitacre Faculty Research Fellow (2007-2010)
- Department of Defense Strategic Environmental Development Program, Project of the Year in the Environmental Restoration Category (2007)
- *Environmental Science and Technology,* Environmental Science Paper of the Year (2005) (39:1569-1575)
- *Research Highlighted on Cover of the Journal Environ. Sci. & Tech. three times (2005, 2006,2007)*
- Lockheed Martin College of Engineering Teaching Award (May 2002)
- Department of Civil and Environmental Engineering Louisiana State University, LSU Alumni Graduate Fellow (1990-1994)

Texas Tech University

Graduate Student Advisor *Co-Advised

1. Emily Gelbart (Ph.D. Civil and Environmental Engineering, December 2028) Annamox Reactors for High Strength Wastewaters
2. Jessica LaGrenada (Ph.D. Civil and Environmental Engineering, December 2027) Impact of Fireworks on Perchlorate
3. Sunday Adu (Ph.D. Civil and Environmental Engineering, December 2025) Hybrid Life Support Systems Coupling RO and Membrane Aerated Bioreactors.
4. Micaela Vavra (Ph.D. Civil and Environmental Engineering, December 2027) PFAS Passive Sampling
5. Jessica LaFond* (Ph.D. Civil and Environmental Engineering, May 2025) Cometabolism of PFAS.
6. Brennan Riley (MENVE Civil and Environmental Engineering, August 2023) Gas Emissions form Anammox Bioreactors
7. Morgan Eldridge* (Ph.D. Environmental Toxicology, December 2024) PFAS Ecotoxicology and Passive Sampling
8. Ghaem Hoosyari (Ph.D. Civil and Environmental Engineering, May 225) Hybrid Closed loop Life Support Systems.
9. Kaylin McDermett (Ph.D. Civil and Environmental Engineering, December 2022) Trophic transfer of PFAS.

10. Uriel Garza-Rubalcava* (Ph.D. Chemical Engineering, August 2022) High resolution sampling in support of contaminated sediment evaluation.
11. Behnaz Jalili (Ph.D. Civil and Environmental Engineering, December 2022) Use of Anammox for treatment of high strength N wastewater.
12. Maryam Salehi (Ph.D. Civil and Environmental Engineering, May 2022) Control of nitritation for high strength N wastewaters.
13. Haley Schneider (Ph.D. Civil and Environmental Engineering, May 2018) Delineation of groundwater velocity, contaminant concentrations, geochemistry, and microbial communities in the saturated subsurface using a high resolution passive profiler.
14. *Dylan Christenson (Ph.D. Civil and Environmental Engineering, December 2017) Investigation of Membrane-Aerated Biological Reactors Treating a High Strength Waste Stream
15. Megan Brundrett (Ph.D. Civil and Environmental Engineering, May 2018) Investigations into the Fate and Occurrence of Chlorate in the Environment: *Implications for Oxy-Chlorine Species on Mars and Earth*
16. Ritesh Sevanthi (Ph.D. Civil and Environmental Engineering, December 2018) Sustainable Resource Recovery in Closed Loop Systems
17. Nubia Estrada (Ph.D. Civil and Environmental Engineering, December 2015) Effects of plant uptake and UV and O_3 production mechanism on perchlorate isotopic composition and possible implications to natural perchlorate.
18. Matt Dane (M.S. Civil and Environmental Engineering, December 2013) Photochemical transformation of Chlorate.
19. *Kyle Kubista (M.S. Civil and Environmental Engineering, May 2012) Comprehensive Trade Study of Bioreactors and Advancement of Membrane-aerated Biologic Reactors for Treatment of Space Based Waste Streams.
20. Sixuan Wang (M.S. Civil and Environmental Engineering Expected, August 2011) Heterogeneous Perchlorate Production.
21. Phani Ponnado (M.S. Civil and Environmental Engineering, May 2011) Determination of Groundwater Velocity in-situ by using Passive Samplers at the Sediment Water Interface.
22. Balaji Rao (Ph.D. Civil and Environmental Engineering, December 2010), Production of Perchlorate in the Atmosphere.
23. *Nick Landes (Ph.D. Civil and Environmental Engineering December 2010), Modeling of Simultaneous Nitrification-Denitrification Reactors.
24. Kristin Peterson (M.S. Civil and Environmental Engineering August 2010), Design and Construction of a TRL 5 Bioreactor for a Lunar Base Waste Stream.
25. Suhas Suhas (M.S. Civil and Environmental Engineering Expected August 2010), Atmospheric Generation of Perchlorate by Electrical Discharge.
26. Sameera Sanka (M.S. Civil and Environmental Engineering -May 2009), Uptake Kinetics of RDX in Wetland Plants.
27. *Jason Crawley (M.S. Civil and Environmental Engineering-December 2007), Impact of Biological Pretreatment on Reverse Osmosis Performance in Space Flight.
28. Nick Landes (M.S. Civil Engineering- August 2007)
29. Balaji Rao (M.S. Civil and Environmental Engineering -December 2006), A Reservoir of Perchlorate in the Unsaturated Zone of Arid and Semi-arid Lands.
30. Srinath Rajagopalan (Ph.D. Civil and Environmental Engineering-December 2005), Distribution and Source Evaluation of Perchlorate in Arid and Semi-Arid Regions.
31. Patil Laxman (M.S. Civil Engineering-May 2005). Perchlorate Distribution in Unsaturated Sediments of the HP.
32. Santosh Nishtala (M.S. Civil Engineering December 2005). Characterization of Bridge Discharge to Receiving Streams.
33. Sangeetha Balakrishnan (M.S. Civil Engineering -December 2005), Perchlorate Production from Anodic Protection Systems.
34. Aniruddha Dhutta (M.S. Civil Engineering- May 2004)
35. Joseph Prethi (M.S.-August 2004). Uptake of Perchlorate in Forage Crops.
36. Sangeetha Arunagiri, (M.S.-August 2004). Electrochemical Generation of Perchlorate from Chlorinated Drinking Water.
37. Kui Tan (Ph.D. Civil Engineering -August 2003). Fate of Perchlorate in Natural Systems: Intrinsic Biodegradation, Plant Uptake, and Remediation Potential of Wetlands.
38. Audra Morse (Ph.D. Civil Engineering -May 2003). Fate of Amoxicillin in a Water Recycling System.

39. Tony Rector (M.S. Civil Engineering -December 2003). Determination of the Fate of an Alternate Surfactant in Water Recycle Systems.
40. Srinath Rajagopalan (M.S. Civil Engineering -December-2002). Use of Alternative Water Sources in Construction Applications.
41. Kishor Kotha (M.S. Civil Engineering -December 2001). Use of Geotextiles in Wastewater Applications.
42. Mi-ae Jeon (M.S. Civil Engineering -August 2001). Remediation of Perchlorate Using Electrokinetic Injection.
43. Wesley Ingram (M.S. Civil Engineering -May 2000). Evaluation of Septic System Drainfields.
44. Amandeep Kang (M.S. Civil Engineering -December 2000). Assessment of the Potential for the Natural Attenuation of Chlorinated Solvents in Contaminated Groundwater in the Texas High Plains.

Post Doctoral Advisees

- Dr. Sepideh Sadeghi, Ph.D. from South Dakota state University (2020-2022)
- Dr. Srinath Rajagopalan, Ph.D. from Texas Tech University (2006-2009)
- Dr. Namgoo Kang, Ph.D. from Purdue University (2005-2006, co-advised with Todd Anderson)
- Dr. Kui Tan, Ph.D. from Texas Tech University (2003-2004)

Visiting Scientist

- Ling Fang, PhD. Student China University (2016-2017)
- Dr. Zhen Zhang, Associate Professor Taizhou University (2018-2019)

Undergraduate Researchers (only those with publications listed)

Juliet Owour (McNair Scholar)
Litzy Guevara (McNair Scholar)
Ophelie Messan
Skye Mason
Maria Velazquez
Daniela Ducon
Bret Thompson
Elizabeth Cummings
Dannia Wilson
Tania Ho
Greg Collins

University Committee Assignments

- University Administrative Appointments (2024-2025)
- University Workload Policy (2024-2025)
- University Budget Committee (2024-25)
- Faculty Academic Integrity Investigative Committee (Chair) 2019
- Faculty Grievance Committee, 2005-2008
- Faculty Senate, 2003-2006; 2022-2025
- Committee to Rewrite the University Research Strategic Plan, 1999
- Chemical Engineering Graduate Program Review (Chair), 2014
- WCOE Dean of Engineering 5 Year Performance Review, 2016

College and Department Committee Assignments

- Graduate Advisor 2011-2013 (Department)
- Maddox Chair Search Committee, 2012-2013 (College)
- Research Awards Committee, 2003-2007
- Chair-Space Committee, 2003-2013(Department)
- Chair-HEAF Committee, 2007-2009 (Department)
- Undergraduate Advisor (~20 per year)
- Promotion and Tenure Committee, 2006-2014; 2016-2019 (College)

- Strategic Planning Committee, 2005- 2007 (College)
- Research Awards Committee, 2001-2002; 2011-2013; 2016-2019 (College).
- Faculty Advisor for Society of Environmental Professionals, 1999-2014
- Chair-Faculty Search Committee, (2016, 2014, 2011)

Honors by Students Under My Supervision

1. Emily Gelbart- 2024 1st Place Poster Competition 51st International Conference on Environmental Systems
2. Jessica LaFond- 2024 Geosyntec Student Paper Competition 2nd Place
3. Jessica LaFond-2022 NSF Graduate Fellowship
4. Kaylin McDermett-2021 Geosyntec Student Paper Competition 2nd Place
5. Uriel Garza-Rubalcava-2019 Geosyntec Student Paper Competition 3rd Place
6. Haley Schneider 2018-Geosyntec Student Paper Competition 2nd Place
7. Maeghan Brundrett- NASA Planetary Science Fellowship
8. Dylan Christenson- OCT NASA Fellowship
9. Balaji Rao, Best Student Paper Award. 2010 *Remediation of Chlorinated and Recalcitrant Compounds Seventh International Conference.* Monterey, CA
10. Nick Landes, 2nd Place Student Poster Competition. 38th International Conference on Environmental Systems (2008)
11. *Jason Crawley, 1st Place Student Poster Competition. 37th International Conference on Environmental Systems (2007)
12. Morse, A., Jackson, A., Rainwater, K., and Pickering, K. 2002. Membrane Aerated Reactors for the Treatment of Simulated Wastewater, WEFTEC 2002, Chicago, IL, September 28-October 3. *Awarded Second Place in the WEFTEC 2002 Poster Symposium.*

Research Grants Funded (PI Listed First, Funding Shown is Total Award)

Total Funding: 68 grants >$ 25,000,000; 43 grants as PI $ ~15,800,000

1. 2024-2027, EPA (1,600K) Jen Guelfo (**PI**), Todd Anderson, Evan Grey, Jordan Crago, **W. Andrew Jackson**. Evaluating and mitigating bioaccumulation of PFAS in plant, mammalian, and aquaculture systems.
2. 2023-2027, EPA (2,500K) **W. Andrew Jackson (PI)**, Todd Anderson, Balaji Rao, J. Coates, S. Ledford, N. Sturchio, K. Van Meter, J. Batista, N. Sturchio. Assessing Perchlorate Occurrence in Ambient Waters Following the Usage of Fireworks EPA-G2022-STAR-I1
3. 2021-2024, NASA, (840K) **W. Andrew Jackson (PI)**, E. Gray, L. Song. Biological Treatment for Wastewater Stabilization in Support of Manned Space Exploration: Partial Gravity Water Recovery System Architecture
   Studies
4. 2022-2024, SERDP (124K) Jennifer Guelfo and **Jackson, W.A.** Cometabolic Transformation and Treatment of PFAA Precursors in PFAS-Impacted Soils and Aquifer Sediments.
5. 2022-2024, NASA-Phase IIX, III (175K) **Jackson, W.A. (PI**) Second Stage Biological Processor.
6. 2021-2022 NASA (5K) **Jackson, W.A. (PI**) Heterogeneous Electrochemical Process Induced by Energetic Electrons on Planetary Bodies.
7. 2021-2025, ESTCP (820K) **Jackson, W.A. (PI**), Todd Anderson, Jennifer Guelfo, Paul Hatzinger. Demonstration of a High Resolution Passive Profiler (HRPP) for Characterizing the Distribution of PFASs in Groundwater.
8. 2021-2024, Oregon Dept. of Env. Quality (144K) Reible, D, **Jackson W.A.** and Deonarine, A. Evaluation of Contaminant Mobility and Availability - Armstrong World Industries, St. Helens, OR
9. 2021-2022, NASA (420K) **Jackson, W.A. (PI)**., Evan Grey, Lianfa Song. Biological Treatment for Wastewater Stabilization in Support of Manned Space Exploration Partial Gravity Water Recovery System Architecture
10. 2020-2021, Oregon Dept. of Env. Quality (98K) Reible, D, **Jackson W.A.** Evaluation of Contaminant Mobility and Availability - McCormick and Baxter, Portland, OR
11. 2019-2021, NASA SBIR (279K) **Jackson, W.A**. **(PI)**., Second Stage Biological Wastewater Processor Phase II

12. 2019-2020, Battelle (102 K) **Jackson, W.A**. **(PI)**., Battelle, High Resolution Passive Profilers to Aid in the Evaluation of Seepage Zones and the Natural Attenuation Capacity at the Groundwater-Surface Water Interface
13. 2019-2021, DOE, (400K to TTU) J. Coates, A. Davila, and **W.A. Jackson**. Using a systems biology approach to describe the role of dissimilatory phosphite oxidation in the global phosphorus cycle.
14. 2017-2021, DOD-ESTCP, (1000K) **Jackson W.A. (PI)**, and Reible D. High Resolution Passive Profiling to Monitor Contaminated Sediments in Support of Remediation., (2017-2021) 1000K
15. 2018-2020, NASA (780K) **Jackson, W.A. (PI)** NASA, Biological Treatment for Wastewater Stabilization in Support of Manned Space Exploration: Flight Experiment Development and Ground Protocol Verification and Bioreactor Maturation Studies.
16. 2017, Ministry of Environment and Climate Change, Canada (45K) Danny Reible and **W. Andrew Jackson**. Passive Sampling for Mercury in a Sediment Environment - Jellicoe Cove, Ontario
17. 2016-2019, NASA (295K) **W. Andrew Jackson (PI)**, and A. Morse. STTR: Phase I and II Sustainable Wastewater treatment for long term space habitation using coupled biological and Ionomer technologies
18. 2014-2018, SERDP (1,300K) **W. Andrew Jackson (PI)**, S. Morse, P. Hatzinger, and C. Schaeffer. High Resolution Delineation of Contaminant Concentrations, Biogeochemical Processes, and Microbial Communities in Saturated Subsurface Environment.
19. 2015-2017, NASA **(466K) W. Andrew Jackson (PI)**, and A. Morse. Biological Treatment for Wastewater Stabilization in Support of Manned Space Exploration: Further Research Needs.
20. 2013-2014, Paragon Space Development Corp. (15K) **W. Andrew Jackson (PI)**,. ICES Organizational Support.
21. 2013-2104, UTC Aerospace (5K) **W. Andrew Jackson (PI)**,. ICES Organizational Support.
22. 2013-2014, European Space Agency (13K) **W. Andrew Jackson (PI)**,. ICES Organizational Support
23. 2012-2014, NASA (250K) **W. Andrew Jackson (PI)**, and A. Morse. Optimization and Evaluation of a Membrane Aerated Nitrification/denitrification Bioreactor for Sustainable Human Habitation.
24. 2012-2014, Louisiana Oil Spill Coordinators Office/LSU (50,000) **W. Andrew Jackson (PI)**, T. Anderson, and J Horita. BP Oil Spill Research.
25. 2012-2013, B&W Pantex, LLC (70K) Ken Rainwater and **W. Andrew Jackson (PI)**, High Plains Aquifer Chromium Investigation.
26. 2012-2015, TxDOT (550K) **W. Andrew Jackson (PI)**, William Lawson, Sanjay Sendaheera, Audra Morse, Ken Rainwater, Daan Lang. Snow and Ice Chemicals for Texas Roads.
27. 2009-2013, EPA (55K) K. Rainwater, A. Morse, T. Anderson, and **W. Andrew Jackson**. City of Lubbock Canyon Lakes Water Reuse Project.
28. 2010-2010, DOD (67K) M. Pantoya, **W. Andrew Jackson**, T. Anderson, G. Cobb, et al. Synthesis characterization and environmental impact studies of advanced energetic materials.
29. 2010-2010, NASA/Lynntech (16K) A. Morse and **W. Andrew Jackson**. SBIR Novel Self-cleaning Surfaces for Biofouling Prevention in Wastewater Lines of Space Systems.
30. 2010-2012, NASA (100K) **W. Andrew Jackson (PI)**, and Audra Morse Engineering Support for Extended Human and Robotic Space Flight Missions.
31. 2009-2010, NASA. (214K) **W. Andrew Jackson (PI),** Steven Morse, and Audra Morse. Development and testing of a TRL 5 Bioreactor for Pretreatment of a Lunar Surface Wastewater
32. 2009-2010, NASA (70K) W**. Andrew Jackson (PI)**, Audra Morse, and Lianfa Song. A Sustainable Water Treatment System for Long Term Space Habitation.
33. 2008-2014; SERDP. ($560K) **Andrew Jackson (PI)**, Todd Anderson, and Ken Rainwater. Research Needs Related to Natural Perchlorate.
34. 2008-2009, B&W Pantex LLC. ($127K) **Andrew Jackson (PI)**, Todd Anderson, and Ken Rainwater, Laboratory Demonstration of In Situ Treatment Effectiveness for Reduction of Perchlorate, TCE, and Chromium at Pantex Plant.
35. 2008-2009, U.S. Department of Energy. ($688K) Ken Rainwater, Audra Morse, **Andrew Jackson (PI)**, Lianfa Song, and Phil Nash. Great Plains Wind Power Test Facility.
36. 2008-2009, NASA ($150K) Audra Morse**, Andrew Jackson (PI),** and Todd Anderson. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications.
37. 2008, Lynntech Inc. ($25K) Audra Morse and **Andrew Jackson(PI).** Evaluation of Water Quality Benefits and Reduced RO Cost.

38. 2005-2008, SERDP ($570K) **Andrew Jackson (PI),** Ken Rainwater, Todd Anderson, Sandy Dasgupta, and Moira Ridley. Identification and Characterization of Natural Sources of Perchlorate.
39. 2007-2008 NASA. ($217K) **Andrew Jackson (PI)**, Audra Morse, Todd Anderson, and Darryl James. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications.
40. 2006-2007 SERDP ($110K) Todd Anderson and **Andrew Jackson (PI),** Continuation of an Integrated Field and Laboratory Investigation with Wildlife: Ecological Risk Assessment of Military Energetic Residues Associated with Live Fire Ranges-Phase 9.
41. 2005-2006. SERDP ($90K) Todd Anderson and **Andrew Jackson (PI)**, Continuation of an Integrated Field and Laboratory Investigation with Wildlife: Ecological Risk Assessment of Military Energetic Residues Associated with Live Fire Ranges-Phase 8.
42. 2005-2006, US Bureau of Reclamation ($99K) Andrew Swift, Ken Rainwater, and **Andrew Jackson,** Efficient and Cost Effective Combination of Wind Power and Desalination Technology.
43. 2003-2004, TNRCC ($532K) **Andrew Jackson (PI),** Ken Rainwater, Todd Anderson, Thomas Lehman, and Moira Ridley, Perchlorate Assessment in the Southern High Plains.
44. 2005-2006, NASA. ($428K) **Andrew Jackson** (**PI),** Audra Morse, Todd Anderson, and Darryl James, Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications, Year 5.
45. 2004-2005, SERDP ($900K). Todd Anderson, Phil Smith, multiple others and **Andrew Jackson** Continuation of the Ecological Risk Assessment of Perchlorate and Explosives in Avian Species, Rodents, Reptiles, Amphibians, and Fish: An Integrated Laboratory and Field Investigation (Phase VII).
46. 2001-2004, SERDP ($2,000K) Todd Anderson, Phil Smith, multiple others and **Andrew Jackson** Continuation of the Ecological Risk Assessment of Perchlorate and Explosives in Avian Species, Rodents, Reptiles, Amphibians, and Fish: An Integrated Laboratory and Field Investigation (Phase VI).
47. 2003-2005, NASA. ($620K) **Andrew Jackson** (PI), Audra Morse, Ken Rainwater, Ted Wiesner, and Todd Anderson. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Application.
48. 2002-2004, Texas Department of Transportation. ($109K) Cliff Fedler, Dean Muirhead, Cary Green, **Andrew Jackson**, and John Borrelli., Utilizing Compost as an Alternative Method to Standard Seeding.
49. 2002-2005, Texas Department of Transportation. ($168K) **Andrew Jackson (PI)**, Dean Muirhead, and David Thompson., Bridge Run-off Characterization.
50. 2002-2003, TNRCC. ($410K) **Andrew Jackson (PI),** Ken Rainwater, Todd Anderson, Thomas Lehman, Moira Ridley, and Tony Mollhagen., Perchlorate Assessment in the Southern High Plains.
51. 2002-2003. USGS/TWRI, ($5K) Audra Morse, and **Andrew Jackson**, Fate of Representative Pharmaceutical in the Environment.
52. 2002-2003, Texas On-Site Wastewater Treatment Research Council. ($200K) Lloyd Urban, Ken Rainwater, and **Andrew Jackson**. Effects of Combining Absorbic and Evaporative Disposal Methods on Drainfield Sizing in Arid and Semiarid Areas.
53. 2001-2003, US Department of Agriculture ($180K) Phil. Smith, **Andrew Jackson**, and Todd Anderson. Risks from Food Crops Grown with Perchlorate-Contaminated Irrigation Water.
54. 2002-2003, NASA. ($389K) **Andrew Jackson** (PI), Ken Rainwater, Audra Morse, Dean Muirhead, and Lloyd Urban. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications. Year 2.
55. 2001-2003 Brazos River Authority/U.S. Army Corps of Engineers. ($1,860K) Todd Anderson, Phil Smith, Scott McMurry, Jim Carr, Chris Theodorakis, George Cobb, **Andrew Jackson**, and Ken Dixon. Ecological Risk Assessment of Ammonium Perchlorate on Fish, Amphibian, and Mammals in the Lake Belton and Lake Waco Watersheds: An Integrated Laboratory and Field Investigation.
56. 2001-2003, Texas Department of Transportation. ($155K) **Andrew Jackson (PI)**, Priyantha Jayawickrama, Cliff Fedler, M. Darwish, and John Borrelli. Use of Alternative Water Sources in Construction Applications.

57. 2001-2002, Water Resources Center. ($12K) **Andrew Jackson** and Audra Morse. Use of Advanced Membrane reactors for Perchlorate Degradation.
58. 2000-2002, NASA. ($290K) Lloyd Urban, **Andrew Jackson**, and Ken Rainwater. Evaluation of NASA's Advanced Life Support Integrated Water Recovery System for Non-Optimal Conditions and Terrestrial Applications.
59. 2000-2001, Environmental Institute of Houston. ($15K) Chunglong Zang, Dean Muirhead, and **Andrew Jackson.** The color of total suspended solids: A New Tool for Assessing Water Quality and Improving Environmental Education Efforts in Texas.
60. 2000-2001, Water Resources Center. ($12K) **Andrew Jackson**. Enhanced Natural Attenuation of Perchlorate in Soils Using Electrokinetic Injection.
61. 1999-2000, Texas Tech University Seed Grant. ($10K) M. Akram and **Andrew Jackson**. Modification of Wastewater Treatment Process Using Geotextiles.
62. 1999-2001, Water Resources Center. ($12K) **Andrew Jackson** and Ken Rainwater. Potential for In-Situ Remediation of Perchlorate Contamination in Sediments and Groundwater.
63. 1999-2000, Texas Department of Transportation. ($165K) Phil Nash, **Andrew Jackson** , Sanjaya Senadheera, and Jeremy Leggoe Environmental Assessment of Traditional Construction and Maintenance Materials.
64. 1998-1999, Water Resources Center. ($12K) **Andrew Jackson** and Ken Rainwater. Assessment of the Potential for Natural Attenuation of Chlorinated Solvents in Contaminated Groundwater in the Texas High Plains.
65. 1998-2001, Texas On-Site Wastewater Treatment Research Council. ($300K) Lloyd Urban, Heyward Ramsey**, and Andrew Jackson**. Effects of Combining Absorbic and Evaporative Disposal Methods on Drainfield Sizing in Arid and Semiarid Areas.

Projects Below Conducted at LSU-BR

66. 1997-1998, Louisiana Applied Oil Spill Research and Development Program. ($47K), John Pardue**,** **Andrew Jackson**, and Dean Adrian. Engineered Application of Bioremediation To Oil Spills In Coastal Wetlands: A Field Trial.
67. 1996-1997, Louisiana Applied Oil Spill Research and Development Program. ($25K), John Pardue **and Andrew Jackson**, Potential For Enhanced Anaerobic BTEX Degradation At The Blind River Spill.
68. 1996-1997, Louisiana Applied Oil Spill Research and Development Program. ($50K), John Pardue**,** **Andrew Jackson**, and Dean Adrian. Engineered Application Of Bioremediation To Oil Spills In Coastal Wetlands.

Total Publications 124 (Researcher ID B-8999-2009)
Total Citations [3681; H Index=33, (Web of Science); 6483; H Index 41 (Google Scholar)]

Perchlorate Related Publications

My group has published 67 journal articles relating to (per)chlorate. This accounts for the most (5.6%) publications by an author in the combined areas of Environmental Science, Environmental Engineering, Geosciences, Geochemistry according to ISI

Journal Articles: (Peer Reviewed) **corresponding author; [P]Post Doc, [S]Graduate Student under my supervision*

1. Yuk-Chun Chan, Lyatt Jaeglé, Pedro Campuzano-Jost, David C. Catling, Vasile I. Furdui, **W. Andrew Jackson**, Jose L. Jimenez, Dongwook Kim, Becky Alexander (2025) Global Model of Atmospheric Chlorate on Earth. JGR Atmospheres. 130:5 **https://doi.org/10.1029/2024JD042162**
2. Y. Chan, P., Campuzo-Jost, D. Catling, J. Cole-Dai., V., Furdui, Andrew Jackson, J. Jimenez, D. Kim, A., Wedum, B. Alexander (2023) Stratospheric Gas-Phase Production Alone Cannot Explain Observations of Atmospheric Perchlorate on Earth. Geophysical Research Letters. 50:9 DOI: 10.1029/2023GL102745
3. A. Wang, A. Jackson, N. Sturchio, J. Houghton, C. Yan, K. Quincy, H. Qu. (2023) Quantification of carbonates, oxychlorines, and chlorine generated by heterogeneous electrochemistry induced by Martian dust activity. Geophysical Research Letters. 50:4 DOI: 10.1029/2022GL102127

4. Paul B. Hatzinger*, J.K. Böhlke, **W. Andrew Jackson**, Baohua Gu, Stanley Mroczkowski, Neil C. Sturchio. (2022) Isotopic discrimination of natural and anthropogenic perchlorate sources in groundwater in a semi-arid region of northeastern Oregon (USA). Applied Geochemistry. 105232 https://doi.org/10.1016/j.apgeochem.2022.105232
5. Zhen Zhang, Weile Yan, Ophelie Messan[s], Jian Fang, **William Andrew Jackson*** (2021) Abiotic Reduction of Nitrate and Chlorate by Green Rust. ACS Earth and Space Chemistry, 5(8)2042-2051 https://doi.org/10.1021/acsearthspacechem.1c00121
6. Nubia Estrada[s], Todd A. Anderson, J. K. Böhlke, Baohua Gu, Paul B. Hatzinger, Stanley J. Mroczkowski, Balaji Rao, Neil C. Sturchio, and **W. Andrew Jackson*** (2021) Origin of the Isotopic Composition of Natural Perchlorate: Experimental Results for the Impact of Reaction Pathway and Initial ClO_x Reactant . *Geochemica Cosmochemica Acta*. **https://doi.org/10.1016/j.gca.2021.06.039**
7. Shuai-Yi Qu, Yu-Yan Sara Zhao*, He Cui, Xiu-Zhen Yin, **W. Andrew Jackson**, Xin Nie, Zhong-Chen Wu. (2022) Preferential Formation of Chlorate over Perchlorate on Mars Controlled by Iron Mineralogy *Nature Astronomy*. https://doi.org/10.1038/s4 1550-021-01588-6
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Space Habitation Life Support Publications

Journal Articles: (Peer Reviewed) **corresponding author; [P]Post Doc, [S]Graduate Student under my supervision*

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108. Maryam Salehi Pourbavarsad[s], Behnaz Jalalieh[s], Nick Landes, and **W. Andrew Jackson*** (2022) Impact of free ammonia and free nitrous acid on nitritation in membrane aerated bioreactors fed with high strength nitrogen urine dominated wastewater. J. of Env. Chem. Eng., 10: https://doi.org/10.1016/j.jece.2021.107001
109. Maryam Salehi Pourbavarsad[s], Behnaz Jalalieh[s], Christian Harkins[s], Ritesh Sevanthi[s], and **W. Andrew Jackson***. 2021 Nitrogen oxidation and carbon removal from high strength nitrogen habitation wastewater with nitrification in membrane aerated bioreactors. J. of Env. Chem. Eng., 9:106271 https://doi.org/10.1016/j.jece.2021.106271
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122. Diaz[S], T.*, **W. Andrew Jackson,** , and Audra Morse. (2007). Alleviating Carbon Limitations of the Early Planetary Base Wastestream. *SAE 2006 Transactions Journal of Aerospace,* March: 518-523.
123. McLamore, Eric*[S], **W. Andrew Jackson** and Audra Morse. (2007) Abiotic Transport in a Membrane Aerated Bioreactor. *Journal of Membrane Science***,** *298 (1-2): 110-116.*
124. McLamore*[S], Eric, Audra Morse, and **W. Andrew Jackson**. (2007) Dynamics of Human Urine Storage in an Early Planetary Base Wastestream., *HABITATION*, 11(3).
125. [*S]Morse, A. and **W. A. Jackson**. (2004) Antibiotic Resistance in Three Water Reclamation Systems. Air *Water and Soil Pollution*. 159:277-289.
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Book Chapters

1. Sturchio NC, Böhlke JK, Gu B, Hatzinger PB, **Jackson WA**, (2011). Isotopic tracing of perchlorate in the environment. In: Baskaran M (Ed.), Handbook of Environmental Isotope Geochemistry, Springer-Verlag.
2. Gu, B., Böhlke, J.K., Sturchio, N.C., Hatzinger, P.B., **Jackson, W.A**., Beloso, A.D., Heraty, L.J., Bian, Y., Jiang, X., and Brown, G.M. (2011) Applications of selective ion exchange for perchlorate removal, recovery, and environmental forensics. in SenGupta, A. K., ed., Ion Exchange and Solvent Extraction: A Series of Advances: 20. Taylor & Francis.
3. J. Coates and **W.A. Jackson** (2009) Development of *In Situ* Bioremediation Technologies for Perchlorate in In Situ Bioremediation of Perchlorate in Groundwater. Hans F. Stroo and Herb Ward, (Eds.) 2009, XLVI, PP. 29-53.
4. **W. Andrew Jackson**, Todd Anderson, Greg Harvey, Greta Orris, Srinath Rajagopalan, and Namgoo Kang. (2006). Occurrence and Formation of Non-Anthropogenic Perchlorate. In Baohua Gu and John Coates (eds). Perchlorate Environmental Occurrence, Chemistry, Toxicology, and Remediation Technologies. Springer-Kluwer. PP 49-70.
5. Neil C. Sturchio, John K. Böhlke, Baohua Gu, Juske Horita, Gilbert M. Brown, Abelardo D. Beloso, Jr., Paul B. Hatzinger, **W. Andrew Jackson**, and Jacimaria Batista. (2006). Stable Isotopic Compositions Of Chlorine And Oxygen In Anthropogenic And Natural Perchlorates. In Baohua Gu and John Coates (eds). Perchlorate

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6. **W. Andrew Jackson,** Todd A. Anderson, Jaclyn E. Canas, Shane Snyder, and Kui Tan, (2006). Environmental Fate of Perchlorate. In Ron Kendall and Phil Smith (eds). Perchlorate Ecotoxicology. Society of Environmental Toxicology and Chemistry Press. PP.1-20.
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Peer Reviewed Proceeding Papers

Papers below were all published in the Proceedings of the International Conference on Environmental Systems. These proceedings are full papers and are externally peer reviewed. The proceedings is the main outlet for NASA related life support development and research.

1. G. Hooshyari, Arpita Bose, J. La-Grenade, Sidhi Kad, Callahan, W**. Andrew Jackson**. (2023) Hybrid Life Support System Full Scale Testing: Integrated Bioreactor-Desalination Long Term Testing. *Proceedings of the 2023 International Conference on Environmental Systems*. Paper number 175
2. **W. Andrew Jackson**, Ghaem Hooshyari[s], Evan Gray, Michael Callahan, Maryam Bavarsad[s], "Hybrid Life Support System FullScale Testing: Integrated bioreactor-desalination for an early planetary base." *Proceedings of the 51st International Conference on Environmental Systems*. ICES-2022-112.
3. Behnaz Jalalieh[s], Maryam Bavarsad[s], Ophelie Messan[s], **W. Andrew Jackson**, and Bill Cumbie. Organic Carbon and Nitrogen Removal in a Two-Stage Nitrification-Anammox (MABR-PAX) System Treating High Strength Nitrogen Wastewater" *Proceedings of the 51st International Conference on Environmental Systems*. ICES-2022-112.
4. Michael Ewert, Mark Sivik, Kristi Niehaus, William Shearouse, Jessica Zinna, Steven Patterson, Dean Muirhead, **W. Andrew Jackson**. Clothes Cleaning Research for Space Exploration. *Proceedings of the 51st International Conference on Environmental Systems*. ICES-2022-391.
5. Ghaem Hooshyari, **W. Andrew Jackson**, Evan Gray, Lianfa Song, Arpita Bose, and Michael Callahan. (2022) Demonstration of a Full Scale Integrated Greywater Recycling System Combining Biological Pretreatment with Reverse Osmosis. *Proceedings of the 51st International Conference on Environmental Systems* ICES 2022-279
6. Behnaz Jalili Jalalieh, Maryam Salehi Pourbavarsad, W**. Andrew Jackson***,* Bill Cumbie, "Organic Carbon and Nitrogen Removal in a Single-Stage Nitrification-Denitrification/Anammox (NDX) System Treating Early Planetary Base (EPB) Wastewater *Proceedings of the 50th International Conference on Environmental Systems*. ICES-2021-367
7. Maryam Salehi Pourbavarsad , Behnaz Jalili Jalalieh , Juliet Owuor, **W. Andrew Jackson**, Dean Muirhead, "Humidity Condensate Stabilization Using an Engineered Biologically Active Storage Tank", *Proceedings of the* 50th International Conference on Environmental Systems, ICES-2021-442
8. **W. Andrew Jackson**, Christian Harkins, Barry Finger. "Demonstration of a Full Scale Integrated Membrane Aerated Bioreactor-Ionomer-Membrane Water Purification System for Recycling Early Planetary Base Wastewater. *Proceedings of the* 50th *International Conference on Environmental Systems*. ICES-2021-265
9. **W. Andrew Jackson** and Robert Morrow. Conceptual Development of a Hybrid Life Support System Integrating a Biological Wastewater Processor with a Plant Growth Unit. *Proceedings of the 49th International Conference on Environmental Systems*, ICES-2019-210
10. Finger, Barry; **Jackson, Andrew**; Pasadilla, Patrick; Zimmerman, Brittany. Development of a Hybrid Integrated Water Recovery Assembly for Exploration Habitats. *Proceedings of the 48th International Conference on Environmental Systems*, ICES 2018-269.
11. Salehi Pourbavarsad, Maryam; Sevanthi, Ritesh; Ducon, Daniela; Morse, Audra; **Jackson, Andrew**; Callahan, Michael. A Two-Stage Biological Reactor for Treatment of Space Based Waste Waters *Proceedings of the 48th International Conference on Environmental Systems*, Paper Number 2018-275.
12. Sevanthi, Ritesh; Salehi Pourbavarsad, Maryam; Morse, Audra; **Jackson, Andrew**; Callahan, Michael. (2018) Long Term Biological Treatment of Space Habitation Waste Waters in a One Stage MABR: Comparison of

Operation for N and C Oxidation With and Without Simultaneous Denitrification. *Proceedings of the 48th International Conference on Environmental Systems,* Paper Number 2018-274

13. **W. Andrew Jackson**, Bret Thompson[s], Ritesh Sevanthi[s], Audra Morse, Caitlin Meyer, Michael Callahan. Biologically pre-treated habitation waste water as a sustainable green urine pre-treat solution. *Proceedings of the 46th International Conference on Environmental Systems*, ICES-2017-299
14. Ritesh Sevanthi[S], Dylan Christenson [S], Audra Morse and **W. Andrew Jackson**, Caitlin Meyer, Leticia Vega. Impact of Waste Stream Composition and Loading Regime on the Performance of a New Flight Compatible Membrane-Aerated Biological Reactor. *Proceedings of the 46th International Conference on Environmental Systems*, ICES-2016-413
15. Leticia Vega, Caitlin Meyer, Sarah Shull, Stuart Pensinger, **W. Andrew Jackson**, Dylan Christenson, Nik Adam, Kevin Lange. Hollow fiber membrane bioreactor systems for wastewater Processing: Effects of environmental stresses including dormancy cycling and antibiotic dosing. *Proceedings of the 46th International Conference on Environmental Systems*, ICES-2016-229
16. Christenson, D., Sevanthi, R., Baldwin, D., Morse, **A., Jackson**, A., Meyer, C., Vega, L., Pickering, K., Barta, D. Further Investigations into the Performance of Membrane-Aerated Biological Reactors Treating a Space Based Waste Stream. *Proceedings of the 45th International Conference on Environmental Systems*, ICES-2015-279
17. **W. Andrew Jackson**, Daniel J. Barta, Molly S. Anderson, Kevin E. Lange, Anthony J. Hanford, Sarah A. Shull, and Layne Carter.. Water Recovery form Brines to Further Close the Water Recovery Loop in Human Spaceflight. *Proceedings of the 44th International Conference on Environmental Systems*. ICES-2014-186
18. Dan Barta, Cinda Chullen, Caitlin Meyer, Marlon Cox, Lindsay Aitchison, Michael Flynne, Raymond Wheeler, **W. Andrew Jackson**, Morgan Abney, Kevin Lange, Leticia Vega, Stuart Pensinger, Tra-My Richardson, Michele Birmele, and Griffin Lunn. Next Generation Life Support Status. *Proceedings of the 44th International Conference on Environmental Systems*. ICES-2014-253
19. Ritesh Sevanthi[s], Audra Morse, Dylan Christenson[s], **W. Andrew Jackson,** Elizabeth Cummings, and Kevin Nguyen. Performance of a full scale MABR for pretreatment of a habitation waste stream prior to desalination. *Proceedings of the 44th International Conference on Environmental Systems*. ICES-2014-237
20. Christenson, D[s]., Morse, A., **Jackson, W. A**., Pickering, K. D., and Barta, D. J. Optimization of a Membrane-Aerated Biological Reactor in Preparation for a Full Scale Integrated Water Recovery Test. *Proceedings of the 43rd International Conference on Environmental Systems*, AIAA-2013-3335.
21. Pickering, K., Mitchell, J., Vega, L., Wheeler, R., Flynn, M., Lunn, G., **Jackson, W.A.** Alternative Water Processor Test Development. *Proceedings of the 43rd International Conference on Environmental Systems*, AIAA-2013-3401.
22. Kyle Kubista[s], **W. Andrew Jackson**, and A. Morse. *(2012) Comprehensive Trade study of Biological Systems for Primary Treatment in an Integrated Water Processing System.* Proceedings of the 42nd International Conference on Environmental Systems, AIAA-2012-3401
23. Audra Morse, Tony Vercellino, Dylan Christenson[s], Stephen Morse, Kyle Kubista[s], Dannia Wilson[s] and W. **Andrew Jackson**. Biological Pre-Treatment of a Space Based Waste Stream to Improve Distillation Treatment Efficiency. *Proceedings of the 41st International Conference on Environmental Systems*, AIAA-2011-5146-6239,
24. **W. Andrew Jackson**, Dylan Christenson, Kyle Kubista[s] , Audra Morse, Stephen Morse, Tony Vercellino, and Dannia Wilson[s]. Performance of a TRL 5 Bioreactor for Pretreatment of an Extended Habitation Wastestream. *Proceedings of the 41st International Conference on Environmental Systems*, AIAA-2011-5132,
25. Tony Vercellino, **W. Andrew Jackson**, Dylan Christenson, Kyle Kubista[s] , Audra Morse, Stephen Morse, and Dannia Wilson[s]. Biological and Physical Polishing of a Space Based Waste Stream. *Proceedings of the 41st International Conference on Environmental Systems*, AIAA-2011-5144
26. **W.A. Jackson,** K. Peterson[s], A. Morse, and N. Landes[s] (2010). "Development and Testing of a TRL 5 Bioreactor for Pretreatment of a Lunar Surface Wastestream" *Proceedings of the 40th International Conference on Environmental Systems*, AIAA-2010-6239, Barcelona, Spain.
27. Morse, W. A. Jackson, D. Wilson[s], F. Loko[s], K. Peterson[s]. (2010). "Evaluation of Alternative Urine Pre-Treatment Strategies" *Proceedings of the 40th International Conference on Environmental Systems*, AIAA-2010-6096.
28. **W.A. Jackson,** N. Landes[s], D. Low and A. Morse. "An Optimum Biological Reactor Configuration for Water Recycling in Space" *International Conference on Environmental Systems*, Paper 2009-09-0049,
29. Landes[s], N., **W.A. Jackson** and A. Morse "The Analysis of a Modified Membrane-Aerated Biofilm Reactor for Space Flight Applications " *International Conference on Environmental Systems*, Paper 2008-01-2016

30. Low, D., Jackson, W., Morse, A., Mosley, T. et al., "Selenium Coating of Water Distribution Tubing to Inhibit Biofilm," SAE Technical Paper 2008-01-2158, doi:10.4271/2008-01-2158.
31. Low, Darryl, **W**. **A. Jackson,** and A. Morse. Determining the Effect of Usage and Biota Upon Oxygen Flux Across Tubular Silicone Membranes. *Proceedings of the International Conference on Environmental Systems* Paper 2006-01-3092
32. Ruiz, N., **W. A. Jackson,** and A. Morse. Transport Processes within a Hollow Fiber Membrane Reactor: Mass Transfer and Hydrodynamics. Paper 2007-01-3093 *Proceedings of the International Conference on Environmental System*, *Chicago, IL*.
33. Landes. N[s], **W. A. Jackson,** and A. Morse. Evaluation of a Microgravity Compatible Membrane Bioreactor for Simultaneous Nitrification/Denitrification. *Proceedings of the International Conference on Environmental System*, Paper 2007-01-3094
34. Diaz[s], T., **W. A. Jackson**, and A. Morse Alleviating Carbon Limitations of the Early Planetary Base Wastestream. *Proceedings of the International Conference on Environmental Systems* Paper 2006-01-2887.
35. **Jackson, W. Andrew** and Audra Morse (2005). Optimum Loading Rates and Design Limitations of Biological Reactors for Long-Term Space Habitation Waste Streams. *Proceedings of the 35th International Conference on Environmental Systems* SAE Paper Number ICES 2005-01-2979
36. Vairavan**,** Bala[s], Audra Morse, and **W. Andrew Jackson,** and Cary Green *Proceedings of the 35th International Conference on Environmental Systems* Chive Growth in Biologically Treated Early Planetary Base Wastewater. SAE Paper Number ICES 2005-01-2822
37. McLamore[s], Eric, Audra Morse, and **W. Andrew Jackson (2004)** Incorporation of a membrane-Aerated Bioreactor in a Water Recovery System. *Proceedings of the 34th International Conference on Environmental Systems* SAE Paper Number ICES 2004-1-2461
38. Morse, Audra, S. Karparthi, and **W. Andrew Jackson (2004)** Biological Treatment of a Urine Humidity Condensate Waste Stream. *Proceedings of the 34th International Conference on Environmental Systems* SAE Paper Number ICES 2004-1-2462
39. Wiesner, Theodore, Shu Xia, and **W. Andrew Jackson (2004)** Modeling a Biological Closed Loop Water Recycling System for Prolonged Manned Space Flight. *Proceedings of the 34th International Conference on Environmental Systems* SAE Paper Number ICES 2004-1-2511
40. **Jackson**, **W. Andrew,** Audra Morse, Tania Ho[s], and Greg Collins[s] (2004) Effect of Recycle Ratio on the Performance of Biological Water Recovery System. *Proceedings of the 34th International Conference on Environmental Systems* SAE Paper Number ICES 2004-1-2511
41. Rector[s], T., **W. A. Jackson**, K. Rainwater, and K. Pickering. Determination of the Fate and Behavior of a Commercial Surfactant in a Water Recycle System (WRS). *Proceedings of the 33rd International Conference on Environmental Systems* SAE Paper Number 2003-01-2558
42. Begeer[s], A., **W. A. Jackson**, and Audra Morse. (2003) Biologically Treated Wastewater for NFT Plant Production in Space. SAE Paper Number 2003-01-2681*, Proceedings of the 33rd International Conference on Environmental Systems (ICES), Vancouver, BC.*
43. Morse, A., **W.A. Jackson**, K. Rainwater. (2003) Nitrification Using a Membrane-Aerated Biological Reactor. *Proceedings of the 33rd International Conference on Environmental Systems* SAE Paper Number 2003-01-2559,
44. Muirhead, D., T. Rector, **W.A. Jackson**, H. Keister[s], A. Morse, K. Rainwater, and K. Pickering. (2003) Performance of a Small Scale Biological Water Recovery System. *Proceedings of the 33rd International Conference on Environmental Systems* SAE Paper Number 2003-01-2557

Invited Presentations

1. ***W. Andrew Jackson**. Microbiology as the solution to extraterrestrial sustainable human habitation. Gordon Conference Microbiology of the Built Environment. May 2022
2. ***W. Andrew Jackson,** H. Schneider, B. Rao, and D. Reible. The Use of Spatially Discrete Passive Sampler to Simultaneously Evaluate Contaminant Transport and Impacts of Biogeochemical Processes in Dynamic Systems. University Consortium for Field-Focused Groundwater Contaminant Research 2017. University of Guelph
3. ***W. Andrew Jackson**. High Resolution Delineation of Chlorinated Solvent Concentrations, Biogeochemical Processes, and Microbial Communities in Saturated Subsurface, SERDP-ESTCP Webinar May 2017

4. ***W. Andrew Jackson** (2016) [**Session Key Note**] Chlorate and Perchlorate Occurrence and Transformation: Implications to Terrestrial and Extra-Terrestrial Chlorine Cycling. Goldschmidt, Yokohama
5. ***W. Andrew Jackson**, Haley Schneider, and Stephen Morse. (2016) High Resolution Delineation of Chlorinated Solvent Concentrations, Biogeochemical Processes, and Microbial Communities in Saturated Subsurface Environments. Environmental Monitoring and Data Quality Workshop. St Louis MS.
6. ***W. Andrew Jackson**, J.K. Böhlke, N. C. Sturchio, Todd Anderson, Alfonso Davila, P. B. Hatzinger, B. Gu, Brian Andraski, Gregory J. Harvey (2015) Sources, Characterization, and Impact of Natural Perchlorate in the Environment and its Co-Occurrence with Nitrate. California Groundwater Resource Association Naturally Occurring Compounds of Regulatory Concern Symposium. Garden Grove, Ca.
7. ***W. Andrew Jackson**, J.K. Bohlke, A. Davila, B. Gu, P. Hatzinger, And N. Sturchio. (2014) Terrestrial Perchlorate and Chlorate: Origin and Production. NASA Ames Workshop- Perchlorate on Mars, Implications for Human Exploration and Astrobiology. NASA Research Park-Moffett Field, Ca.
8. ***W. Andrew Jackson**, P. Hatzinger, and S. Morse. (2014) High Resolution Delineation of Contaminant Concentrations, Biogeochemical Processes, and Microbial Communities in Saturated Subsurface Environments. SERDP Chlorinated Solvents in Groundwater Technical Exchange Meeting. Fort Myers, Arlington Va.
9. ***Jackson, W.A**., Bohlke, J., Sevanthi, R., Bexfield, L., Fahlquist, L., Andraski, B., Gates, J., Eckardt, F., Davila, A., Sturchio, N., Hatzinger, P., Gu, B., Harvey, G. (2013) Perchlorate Occurrence and Relationship with Nitrate in Arid and Semi-Arid Areas . presented at 2013 Fall Meeting, AGU, San Francisco, Calif., 9-13 Dec
10. ***Jackson, W. A.** (2009) Perchlorate in Atmospheric Deposition. *21st International Ion Chromatography Symposium*, Dublin. Ireland.
11. ***Jackson, W. A**. and Greta Orris. (2009) Occurrence of perchlorate across the world and the implication for human health impact. *American Chemical Society Fall Meeting*, Washington D.C.
12. ***Jackson, W.** A. (2008) Partners in Environmental Technology Technical Symposium and Workshop Short Course "In Situ Bioremediation of Perchlorate in Groundwater". Washington D.C.
13. ***W. Andrew Jackson,** Balaji Rao, Todd A. Anderson, Greta J. Orris, Ken A. Rainwater, Srinath Rajagopalan, Renee M. Sandvig, Bridget R. Scanlon, David A. Stonestrom, Michelle A. Walvoord, Greg Harvey, Lynne Fahlquist, and Brian Andraski (2008) Background Concentrations of Perchlorate in Arid and Semi-Arid Regions of North America and its Impact on Site Assessment. *International Conference on Remediation of Chlorinated and Recalcitrant Compounds Sixth International Conference.* Monterey, CA.
14. ***Jackson, W.A**.,S. Rajagopolan, B. Rao, T. Anderson, K. Rainwater, D. Stonestrom, L. Fahlquist, G. Orris, and G. Harvey. (2006) Occurrence of Atmospherically Generated Perchlorate in Arid and Semi-Arid Regions of North America., The 16th Symposium in GRA's Series on Groundwater Contaminants, Perchlorate 2006 Santa Clara CA. January26..
15. ***W. Andrew Jackson** (2005) Electrochemical Generation of Perchlorate Ions in Chlorinated Drinking Water. *International Society of Environmental Forensics: Focus on Perchlorate, September 21-22, Santa Fe, NM.*
16. ***W. Andrew Jackson** (2005) Using Multiple Approaches to Determine the Source of Perchlorate and Associated Challenges for Widespread Low Level Occurrences. *International Society of Environmental Forensics: Focus on Perchlorate, September 21-22, Santa Fe, NM.*
17. ***Jackson, W.A**., (2005) Perchlorate Origin and Occurrence in West Texas" Texas Commission on Environmental Quality Environmental Trade Fair and Conference. Austin TX, May 2.
18. ***Jackson, W.A**., G. Harvey, and G. Orris. (2004) Origin and Production of Naturally Occurring Perchlorate. SERDP Partners in Environmental Technology. Washington, D.C. November 30.
19. Jackson, W.A., K. Tan, C. Theodorikas, and T. Anderson (2004) Treatment of Perchlorate in Constructed Wetlands. Origin and Production of Naturally Occurring Perchlorate. SERDP Partners in Environmental Technology SERDP Washington, D.C. November 30.
20. ***Jackson, W.A**., Rainwater, K.A., Anderson, T., Lehman, T.M., Ridley, M., Walden, S., and Tock, W.R., (2004) "Occurrence and Source of Perchlorate in the High Plains Aquifer System of Texas" The 11th Symposium in GRA's Series on Groundwater Contaminants, Glendale Ca. August 4.
21. ***Jackson, W.A**., (2004) Spatial Variability and Diversity in Natural and Engineered Systems. Seminar at Kennedy Space Center, Space Life Sciences Lab. March 18.
22. ***Jackson, W. A.,** T. Anderson, and P. Smith, K. Tan, L. Yu, P. Joseph, and P. Laxman**.** . (2004) Uptake of Perchlorate Plants. *227th ACS National Meeting. Anahiem, CA.,* March 29-April 1.

23. ***Jackson, W. A., T. Anderson, and P. Smith** (2003) Plant Uptake of Perchlorate and Non-Industrial Occurrence. *Fall 2003 Federal-State Toxicology and Risk Analysis Committee Meeting.*, November3-5, Emeryville, CA.
24. ***Jackson, W. A.** (2003) Plant Uptake of Perchlorate and Non-Industrial Occurrence. *Perchlorate Review Scholars Committee.* Urban Water Resources Center, October 22, Irvine, CA.
25. *Jackson W.A. and J. Pardue. (2003) High Resolution Sampling Using Peepers or Dialysis Samplers. *Interstate Technology Regulatory Council.* September 29-October 1, Monterey CA.
26. ***Jackson, W. A.** and P. Smith. (2003) Plant Uptake of Perchlorate and Ecological Risk Assessment. *USDA ORACBA Risk Assesment Forum.* October 1, Washington, D.C.
27. ***Jackson, W. A.** and P. Smith. (2003) Plant Uptake of Perchlorate and Ecological Risk Assessment. *Tribal Concerns Perchlorate Contamination Conference.* September 9-10, Parker AZ
28. ***Jackson, W.A**. (2003) Large Scale Non-Industrial Occurrence of Perchlorate in the Texas Panhandle and Implications for Perchlorate Uptake by Crops. *The Seventh Symposium in GRA's Series on Groundwater Contaminants*. July 31, Sacramento, CA.
29. ***Jackson, W.A**., and A. Morse. (2003) Direct Recycling of Wastewater for Terrestrial and Space Applications. *Space Life Sciences Training Program*. Kennedy Space Center, FL.
30. ***Jackson, W. A**., P. Smith, and T. Anderson. (2003) Perchlorate Uptake by Plants. *Seminar EPA Region VI*. San Francisco, CA.
31. ***Jackson, W. A**., P. Smith, and T. Anderson. (2003) Perchlorate Uptake by Plants. *Santa Clara Valley Water District Irrigation and Fertilization Seminar*. San Martin, CA.
32. ***Jackson, W.A**., K. Rainwater, T. Lehman, and T. Anderson. (2003) Distribution of Perchlorate on the Southern High Plains. *Seminar to EPA Region IV*.
33. ***Jackson** and J. Pardue. (1999) Role of Hydrogen in Correlating Microcosm and Field-Derived Rate Constants for TCE. *Hazardous Waste Research,* St Louis, MO.
34. ***Jackson A.** and J. Pardue. (1997) Use of Stable Carbon Isotopes to Monitor Crude Oil Mineralization. *Annual Meeting of the Geological Society*. Salt Lake City, UT.

Invited University Seminars

Department of Geosciences, Washington University, St Louis (2020)
Department of Hydraulic Engineering, Tsinghua, China (2019)
College of Engineering, University of Guadalajara, Mexico (2015)
Department of Geosciences, University of Illinois at Chicago (2014)
Department of Civil and Environmental Engineering, University of Texas (2008, 2009)
Department of Biology, Rhodes College (2008)
Department of Environmental Engineering, Stanford University (2004)

Teaching Experience

Courses Taught

A variety of courses taught from freshman to graduate level, including graduate level design courses and capstone courses. Not included below is a number of special study courses offered to individual students participating in design competitions.

CE/ENVE 3309	Introduction to Environmental Engineering
ENVE 1301	Introduction to Environmental Systems
CE 5383	Bioremediation
CE 5393	Unit Processes
CE 5391/4391	Advanced Water Treatment
ENVE 5305	Environmental Systems Design I
ENVE 5306	Environmental Systems Design II
CE 5101	Graduate Seminar
ENVE 1101	Freshman Seminar
CE 5390	Water Quality Analysis
ENVE 5399/4399	Advanced Biological Waste Water Treatment