Curriculum Vitae

Tobias Niederwieser | PhD Aerospace Engineering Sciences

PROFESSIONAL EXPERIENCE

2022-Present	Assistant Research Professor, **University of Colorado**, Boulder, BioServe Space Technologies
2018-2022	Research Associate, **University of Colorado**, Boulder, BioServe Space Technologies
2013-2018	Graduate Research Assistant, **University of Colorado**, Boulder, BioServe Space Technologies
2012-2013	Research Assistant, **Technical University Munich**, Institute of Astronautics
2012-2012	Internship, **University of Colorado**, Boulder, research
2011	Internship, **BMW AG**, Munich, chassis development
2010	Internship, **Porsche AG**, Weissach, prototype development
2008	Internship, **Lufthansa Technik AG**, Hamburg, aircraft overhaul and maintenance
2007-2008	Cooperation, **BMW AG**, Leipzig, development of the Neige-Rodel (tilting sled)

EDUCATION

Ph.D.	2018	University of Colorado Boulder	Aerospace Engineering Sciences
SSP	2016	International Space University	Space Studies Program, Technion - Israel Institute of Technology, Haifa, Israel (Final Grade: A)
M.S.	2015	University of Colorado Boulder	Aerospace Engineering Sciences (GPA: 4.0)
B.Sc.	2013	Technische Universität München	Aerospace Engineering (Grade: 2,4)
Abitur	2010	Thomasschule zu Leipzig Gymnasium	Mathematics and Physics Focus (Grade: 1,0)

AWARDS & SCHOLARSHIPS

Grant Winner, **Future Space Leaders Foundation**, 2023
Finalist, **International Astronautical Federation**, Luigi G. Napolitano Award, 2021
20 under 35 Award, **Space and Satellite Professionals International**, 2021
Life Sciences in Space Research Most Cited Article in 2018 and 2019, **Elsevier**, 2020
Johnson Space Center Group Achievement Award, **NASA**, Expedition 59 Team Awards, 2019
Finalist, **International Astronautical Federation**, Luigi G. Napolitano Award, 2018
Orville and Wilbur Wright Graduate Award, **AIAA**, 2018
Fellowship, **German Academic Scholarship Foundation**, 2016-2018
Sponsorship, **Austrian Research Promotion Agency**, 2016
Sponsorship, **European Space Agency**, 2016
Best-in-Theme Award, **NASA**, RASC-AL Competition, Cocoa Beach, 2015
Criterion Recognition for Intent, **NASA**, 2014 Humans in Space Art Competition, 2015
Twenty20s Award, **Aviation Week**, Phoenix, 2014
First Prize graduate division, **NASA,** RASC-AL Competition, Cocoa Beach, 2014
Sponsorship, 2014, **Association of Austrian Space Industries**, 2014
Bronze Medal, "**Ideas-Inventions-New Products**" international trade fair, Nuremberg, 2008
Heinz and Gisela Friederichs Foundation Award, **German youth science national competition**, 2008
Second Prize, **German youth science state competition**, Chemnitz, 2007

RESEARCH

RESEARCH FUNDING

Co-I	ISS National Lab, ISS Flight Study, “In-space biomanufacturing induced pluripotent stem cell derived hemogenic endothelium”, 10/2023-09/2025
PI	NASA STTR Phase II, Ground Study, “REALISE - Remote Experimentation and Analysis Laboratory onboard the Lunar Gateway”, 10/2022-09/2024
PI	ISS National Lab, ISS Flight Study, “In-Space Production of Induced Pluripotent Stem Cells for Clinical Application”, 06/2022-05/2024

Co-I	NASA InSPA, ISS Flight Studies, "Expansion of Hematopoietic Stem Cells for Clinical Application", 06/2022-05/2025
PI	NASA REMIS, Conceptual Study with Gateway Flight Option, "Gateway Payload Enclosure", 04/2022-08/2025
PI	NASA STTR Phase I, Ground Study, "REALISE - Remote Experimentation and Analysis Laboratory onboard the Lunar Gateway", 05/2021-06/2022
Institutional PI	NASA STTR Phase II, Ground Study, "A Robust Biofilm-Biomat Reactor for Conversion of Mission-Relevant Feedstocks to Products", 01/2020-07/2022
Co-I	NASA Ames Research Center, ISS Flight Study, "BioSentinel ISS Payload", 06/2019-08/2022
Collaborator	NASA ROSBio, ISS and Artemis-1 Flight Study, "Multi-Generational Genome-Wide Yeast Fitness Profiling Beyond and Below Earth's van Allen Belts", 03/2019-Present

TECHNOLOGY DEVELOPMENT FUNDING

Advisor	Northrop Grumman, HLS Project Support Gift Fund, 02/2022-05/2022
Project Manager	BioServe Internal Funding, VGM Development, 03/2021-Present
Project Manager	BioServe Internal Funding, Centrifuge Development, 11/2020-Present
Advisor	SpaceLab Technologies, uG-LilyPond - Floating Plant Pond for Microgravity, 12/2018-06/2020
Project Manager	NASA, FRIDGE Development and Flight, 11/2018-12/2023
Lead Engineer	Northrop Grumman, AEM-E Development and Flight, 03/2017-09/2023
Engineer	NASA, SABL Development and Flight, 10/2011-03/2015

INTEGRATION WORK FUNDING

Project Manager	NASA REMIS, ISS Flight Study Integration, "Megakaryocyte Flying -1 (MeF1)", 06/2023-09/2024
Project Manager	Yuri, ISS Flight Study Integration, "HepaWell-1", 01/2022-01/2023
Project Manager	Yuri, ISS Flight Study Integration, "Cellbox-3", 12/2021-12/2022
Project Manager	LifeShip, ISS Flight Study Integration, "LifeShip Genetic Capsule", 09/2021-08/2023
Project Manager	NASA EPSCoR, ISS Flight Study Integration, "Microgravity Demonstration of a Novel In-Space Food Production System", 08/2021-08/2022
Project Manager	Seed Health, ISS Flight Study Support, "Plastic Cleaning Microbes", 03/2021-11/2022

SPACEFLIGHT SUPPORT

Cygnus NG-20	Launch of SABL-4 as a new space science laboratory to the ISS, 01/2024(exp.)
Cygnus NG-19	Launch of StemCellEx-H Pathfinder experiment to the ISS, 08/2023
SpaceX CRS-27	Launch of SALI-1 as a new space science laboratory to the ISS, 03/2023
SpaceX CRS-26	Launch of Plastic Cleaning Microbes (MIT Media Lab/Seed Health) to the ISS, 11/2022
NASA Artemis-I	Launch of PLASM as autonomous deep space radiation laboratory in Lunar orbit, 11/2022
Cygnus NG-18	Launch of Cellbox-3 (Yuri) experiment to the ISS as well as Centrifuge as new space science facility to the ISS, 11/2022
SpaceX Crew-5	Launch of commercial LifeShip Genetic Capsule Payload (LifeShip) to the ISS, 09/2022
SpaceX CRS-25	Launch of Protein Manufacturing Food Production Demonstrator (Nature's Fynd/Montana State University) to the ISS, 07/2022
SpaceX Crew-4	Launch of commercial LifeShip Genetic Capsule Payload (LifeShip) to the ISS, 04/2022
SpaceX CRS-24	Launch of FRIDGE-3 as the new crew refrigerator to the ISS, 12/2021
SpaceX CRS-24	Launch of BioSentinel Yeast Radiation (NASA Ames) experiment to the ISS, 12/2024
SpaceX CRS-23	Launch of SALI-1 as a new space science laboratory to the ISS, 08/2021
Cygnus NG-16	Launch of SABL-4 as a new space science laboratory to the ISS, 08/2021
Cygnus NG-14	Launch of FRIDGE-1 and FRIDGE-2 as the new crew refrigerator to the ISS, 09/2020
Cygnus NG-12	Launch of AEM-E as life support system to transport 40 rodents to the ISS, 11/2019
Cygnus NG-11	Launch of AEM-E as life support system to transport 40 rodents to the ISS, 04/2019

SpaceX CRS-11	Launch of SABL-3 as a new space science laboratory to the ISS, 06/2017
Cygnus OA-4	Launch of SABL-1 and SABL-2 as a new space science laboratory to the ISS, 12/2015

PUBLICATIONS

JOURNAL ARTICLES

1. L. Zea, S. Piper, H. Gaikani, M. Khoshnoodi, **T. Niederwieser**, A. Hoehn, M. Grusin, J. Wright, P. Flores, K. Wilson, A. Lutsic, L. Stodieck, C. Carr, R. Moeller, C. Nislow, "Experiment verification test of the Artemis I 'Deep Space Radiation Genomics' experiment", *Acta Astronautica*, 198, pp. 702–706, 2022.
2. **T. Niederwieser**, R. Aaron, S. Countryman, S. Doraisingam, H. Fultz, R. Griffith, A. Hoehn, M. Rupert, J. Wright, L. Stodieck, "FRIDGE – The Next Generation Freezer / Refrigerator / Incubator for Food and Experiment Conditioning Onboard the ISS", *The Journal of Space Safety Engineering*, 9, pp. 291-297, 2022.
3. **T. Niederwieser**, P. Kociolek, and D. Klaus, "Effect of altered nitrogen partial pressure on Chlorellaceae for spaceflight applications," *Algal Research*, 41, 101543, 2019.
4. **T. Niederwieser**, P. Kociolek, and D. Klaus, "A review of algal research in space," *Acta Astronautica*, 146, pp. 359–367, 2018.
5. **T. Niederwieser**, D. Klaus, P. Kociolek, "Spacecraft Cabin Environment Effects on the Growth and Behavior of Chlorella Vulgaris for Life Support Applications", *Life Sciences in Space Research*, 16, pp. 8-17, 2018.
6. **T. Niederwieser**, "Konstruktion und Bau einer Neige-Rodel", (Construction and Build of a Tilting-Sled) *Junge Wissenschaft*, 85, pp. 24–32, 2010.

CONFERENCE PAPERS (REFEREED)

1. T. Ruck, D. Pütz, **T. Niederwieser**, "Dynamic Simulation of Performance and Mass, Power, and Volume prediction of an Algal Life Support System;" in *49th Int. Conf. Environ. Syst.*, Boston, MA, 2019 (ICES-2019-207).
2. J. Anthony, A. Hoehn, **T. Niederwieser**, L. Stodieck, and S. Tozer, "Implementation of Lithium Hydroxide as a Dual CO2/H2O Scrubber for a Rodent Research Life Support System;" in *48th Int. Conf. Environ. Syst.*, Albuquerque, NM, 2018 (ICES-2018-229).
3. T. Bennet, C. Cain, N. Campbell, A. Gemer, J. Marino, **T. Niederwieser**, and A. Rao, "The CENKI Space Economic Simulator: Analytical Verification of an Agent-Based Modeling Engine;" in *IEEE Aerosp. Conf.*, Big Sky, MT, 2018 (2020 2).
4. T. Bennet, C. Cain, N. Campbell, A. Gemer, J. Marino, **T. Niederwieser**, and A. Rao, "The CENKI Space Economic Simulator: Demonstrating Agent-Based Modeling on Satellite Market Data;" in *IEEE Aerosp. Conf.*, Big Sky, MT, 2018 (2344 2).
5. **T. Niederwieser**, R. Wall, J. Nabity, and D. Klaus, "Development of a testbed for flow-through measurements of algal metabolism under altered pressure for bioregenerative life support applications;" in *47th Int. Conf. Environ. Syst.*, Charleston, SC, 2017 (ICES-2017-23).
6. **T. Niederwieser**, J. Anthony, A. Darnell, G. King, P. Koenig, L. Stodieck, and J. Wright, "SABL – An EXPRESS locker-sized incubator for performing biological experiments onboard the ISS;" in *45th Int. Conf. Environ. Syst.,* Bellevue, WA, 2015 (ICES-2015-081).
7. **T. Niederwieser**, R. Gerren, P. Koenig, S. Tozer, L. Stodieck, S. Rieger, and A. Hoehn, "AEM-E – A small life support system for the transport of rodents to the ISS;" in *44th Int. Conf. Environ. Syst.,* Tucson, AZ, 2014 (ICES-2014-101).
8. S.D. Tozer, P. Koenig, **T. Niederwieser**, and L. Stodieck, "Design and Flight - Qualification of an Oxygen Resupply System to Support the Transport of Live Rodents to the ISS;" in *44th Int. Conf. Environ. Syst.,* Tucson, AZ, 2014 (ICES-2014-155).
9. J. Holquist, P. Koenig, S. Tozer, A. A. Williams, D. M. Klaus, L. Stodieck, **T. Niederwieser**, C. T. Olthoff, and A. Hoehn, "Atmosphere Regeneration to enable Life Support for the Transport of Rodents to and from the ISS - Design Trades and Test Results;" in *43rd Int. Conf. Environ. Syst.,* Vail, 2013 (AIAA-2013-3461).

CONFERENCE PAPERS (NON-REFEREED)

1. **T. Niederwieser**, M. Beck, S. Countryman, R. Griffith, M. Grusin, M. Hirsch, A. Hoehn, J. Wright, L. Stodieck, "VGM – A Novel Centrifuge for Partial Gravity Experiments and Cell Seeding in Microgravity" in Int. Astronaut. Congr., Baku, Azerbaijan, 2023 (IAC-23-A2.7.1x75989)
2. **T. Niederwieser**, M. Beck, C. Monks, A. Barazia, G. Redford, "REALISE – Automated Payload Operations onboard the Lunar Gateway" in Int. Astronaut. Congr., Baku, Azerbaijan, 2023 (IAC-23-A1.8.9x75957)
3. L. Zea, **T. Niederwieser**, A. Hoehn, M. Grusin, J. Wright, G. Stanish, S. Piper, P. Flores, R. Griffith, H. Gaikani, M. Khoshnoodi, K. Siems, M. Cortesão, V. Bernstein, D. Knipp, K. Wilson, K. Scott, A. Lutsic, M. Soler, K. Sato, A. Viau, R. Aragón, L. Stodieck, S. Countryman, C. Carr, R. Moeller, C. Nislow, "From Idea to Lunar Orbit Flight Readiness – Implementation of the Artemis I 'Deep Space Radiation Genomics' (DSRG) Yeast Experiment", in American Society for Gravitational and Space Research Conf., Baltimore, MD, 2021.
4. **T. Niederwieser**, R. Aaron, S. Countryman, S. Doraisingam, H. Fultz, R. Griffith, A. Hoehn, M. Rupert, J. Wright, L. Stodieck, "FRIDGE – The Next Generation Freezer / Refrigerator / Incubator for Food and Experiment Conditioning Onboard the ISS" in Int. Astronaut. Congr., Dubai, UAE, 2021 (IAC-21-A1.3.6x61857)
5. L. Zea, S. Piper, H. Gaikani, M. Khoshnoodi, **T. Niederwieser**, A. Hoehn, M. Grusin, J. Wright, P. Flores, K. Wilson, A. Lutsic, L. Stodieck, C. Carr, R. Moeller, C. Nislow, "Experiment Verification Test of the Artemis-I 'Deep Space Radiation Genomics' Experiment" in Int. Astronaut. Congr., Dubai, UAE, 2021 (IAC-21-A2.7.1x65012)
6. **T. Niederwieser**, L. Zea, L. Stodieck, "Enabling High-Throughput and High-Impact Space Life Science Research on the Lunar Surface" in Lunar Surface Workshop, Virtual, 2020
7. L. Zea, **T. Niederwieser**, L. Stodieck, C. Carr, R. Moeller, C. Nislow, "Experiment Design for a Genome-Wide Yeast Fitness Profiling Experiment on Board Orion's Exploration Mission 1" in Int. Astronaut. Congr., Washington, D.C., 2019 (IAC-19-A2.7.9x51501).
8. A. Jurga, J. Kuźma, K. Janiak, **T. Niederwieser**, "Experiment design to investigate the possibility of using grey water in aeroponic cultivation of various crops for future long-term space missions" in *11th Conf. on Interdisc. Probl. in Environ. Protect. and Engin. EKO-DOK*, Dolny Śląsk, Poland, 2019 (00031).
9. **T. Niederwieser**, "Feasibility study of an algal-based life support system" in *Int. Astronaut. Congr.,* Bremen, Germany, 2018 (IAC-18.A1.7.9x43517).
10. **T. Niederwieser**, D. Klaus, "Algal research in space" in *Int. Astronaut. Congr.,* Adelaide, Australia, 2017 (IAC-17.A1.7.7x36885).
11. M. Ahmad, A. Atary, J. Bai, D. Begun, E. Burger, D. Catanoso, L. Dao, M. Foster, R. Gandam, M. Grialou, Z. Gu, H. Li, M. Langer Appel, B. Lombard, A. McSweeney, N. Meirhaeghe, M. Nestoridi, **T. Niederwieser**, J. Norheim, E. Orlova, H. Petersson, H. Price, J. Rabineau, J. Richards, N. Romero, D. Shmuel, M. Soumagnac, Z. Song, G. Tang, L. Yekui, B. Zhang, and J. Cohen, "Implications of New Discoveries in the Martian Environment" in *Int. Astronaut. Congr.* Guadalajara, Mexico, 2016 (IAC-16.A5.2.7x34276).
12. T. Bennett, C. Cain, N. Campbell, A. Gemer, T. Green, and **T. Niederwieser**, "Engineering the Cis-lunar economic system based on ULA's Cis-Lunar-1000 Vision" in *AIAA Space Forum*, Long Beach, CA, 2016 (10.2514/6.2016-5305).

PRESENTATIONS

1. 74th International Astronautical Congress (IAC), "VGM – A Novel Centrifuge for Partial Gravity Experiments and Cell Seeding in Microgravity" Baku, Azerbaijan, 2023.
2. 74th International Astronautical Congress (IAC), "REALISE – Automated Payload Operations onboard the Lunar Gateway" Baku, Azerbaijan, 2023.
3. AIAA RMS Annual Technical Symposium, "Space Experiments: From LEO Biomanufacturing to Protecting Humans during Deep Space Exploration", Fort Collins, 2023

4. ISSRDC Conference, “In-Space Expansion of Hematopoietic Stem Cells: Technical Progress, Economic Potential, and Commercialization Challenges, Seattle, 2023
5. Launching Space Biology, Invited Talk, Boulder, 2023
6. International Space Convention, Invited Talk, Virtual, 2023
7. HRP Conference, “Expansion of Hematopoietic Stem Cells”, Galveston, 2023
8. NASA STAR Program, Invited Talk, Virtual, 2023
9. AIAA RMS Annual Technical Symposium, “Challenges and Future Need for Human Space Exploration”, Boulder, 2022
10. Department Seminar, University of Colorado Boulder, Aerospace Engineering Sciences, 2022
11. GeneLab’s Meet the Expert Session, Invited Talk, Virtual, 2022
12. Improving Space Operations Workshop (ISOW), Invited Talk, Virtual, 2022
13. IAF Space Habitats Committee Meeting, “Building a Science Laboratory in Space”, Virtual, 2022
14. 72nd International Astronautical Congress (IAC), “FRIDGE – The Next Generation Freezer / Refrigerator / Incubator for Food and Experiment Conditioning Onboard the ISS” Dubai, UAE, 2021.
15. Space Symposium, Panel Member, New Generation Space Leaders Panel – Engineering a Launch, Virtual, 2021
16. ASGSR-Webinar, Invited Talk, Virtual, 2021
17. Ramon Foundation Webinar, Invited Talk, Virtual, 2021
18. 3rd STARTECH Conference, Invited Talk, Virtual, 2020
19. Bioastronautics Seminar, Invited Talk, Virtual, 2020
20. 71st International Astronautical Congress (IAC), Panel Member, “Public Private Partnerships as a Catalyst for the Next Generation”, Virtual, 2020
21. 69th International Astronautical Congress (IAC), “Feasibility study of an algal-based life support system” Bremen, Germany, 2018.
22. NASA Deep Space Gateway Science Workshop, “Basic and Applied Algal Life Support System Research on Board the Deep Space Gateway” Denver, CO, 2018.
23. 68th International Astronautical Congress (IAC), “Algal Research in Space” Adelaide, Australia, 2017.
24. 47th International Conference on Environmental Systems (ICES), “Development of a testbed for flow-through measurements of algal metabolism under altered pressure for bioregenerative life support applications” Charleston, SC, 2017.
25. 45th International Conference on Environmental Systems (ICES), “SABL – An EXPRESS locker-sized incubator for performing biological experiments onboard the ISS” Bellevue, WA, 2015.
26. 44th International Conference on Environmental Systems (ICES), “AEM-E – A small life support system for the transport of rodents to the ISS” Tucson, AZ, 2014.

THESES

1. **T. Niederwieser**, Ph.D. Thesis, “Analysis of factors affecting the implementation of an algal photobioreactor into a spacecraft life support system” University of Colorado, Boulder, CO, 2018.
2. **T. Niederwieser**, M.S. Thesis, “Evaluation of a flow-through test bed for algal atmosphere revitalization in spaceflight applications;” University of Colorado, Boulder, CO, 2015.
3. **T. Niederwieser**, B.Sc. Thesis, “Feasibility of polyamide gears for use in high performance space flight mechanisms;” Technical University Munich, Germany, 2013.

PATENTS

1. **T. Niederwieser**, Die Neige-Rodel/Der Neige-Schlitten (The Tilting-Sled); DE202007004158 U1, 2007.

POSTERS

1. **T. Niederwieser** and D. Klaus, "Optimization of algal photobioreactor concepts for implementation into spacecraft life support systems;" in *48th Int. Conf. Environ. Syst.* Albuquerque, NM, 2018.
2. R. Wall, **T. Niederwieser**, D. Klaus, and J. Nabity, "Evaluation of Agar-Grown Algae for Environmental Control and Life Support Systems in Spacecraft Applications;" in *47th Int. Conf. Environ. Syst.* Charleston, SC, 2017.
3. **T. Niederwieser**, R. Wall, and D. Klaus, "Design consideration of an algal photobioreactor for implementation into a spacecraft environmental control and life support system;" in *7th Int. Conf. Algal Biomass, Biofuels, Bioprod.* Miami, FL, 2017.
4. **T. Niederwieser**, "Recreating Earth in space: Spacecraft life support using algae;" in *Austrian Res. Innov. Talk*. Toronto, Canada, 2016.
5. J. Anthony, K. Brissenden, A. Darnell, T. Sparks, G. Hale, R. Huang, E. Kowalski, **T. Niederwieser**, and K. Rosario, "Experimental Test Facility for Environmental Control and Life Support Systems Research for Human Spaceflight;" in *44th Int. Conf. Environ. Syst.*, Tucson, AZ, 2014.
6. J. Anthony, K. Brissenden, A. Darnell, G. Hale, T. Sparks, R. Huang, E. Kowalski, **T. Niederwieser**, and K. Rosario, "Experimental Test Facility for Environmental Control and Life Support Systems for Human Spaceflight Research;" in *CU Aerosp. Eng. Sci. Student Des. Symp.*, Boulder, CO, 2014.

POPULAR PRESS

1. Barbara O'Neil, The Best Cancer Care in Colorado Keeps Getting Better", 5280 Magazine, https://www.5280.com/the-best-cancer-care-in-colorado-keeps-getting-better/, 08/01/2023
2. Conor McCue, "How would human DNA do in deep space? Experiments from Artemis I being studied at University of Colorado", CBS Colorado, https://www.cbsnews.com/colorado/news/radiation-deep-space-artemis-i-experiments-university-colorado-boulder-bioserve-space-technologies-lab/?intcid=CNM-00-10abd1h, 01/31/2023
3. Geoff Brumfield, "How yeast will teach NASA about the dangers of space", NPR, https://www.npr.org/2022/12/05/1140671226/how-yeast-will-teach-nasa-about-the-dangers-of-space, 12/05/2022.
4. Conor McCue, "After several delays, Artemis I finally launches, thanks, in part, to Colorado", CBS Colorado, https://www.cbsnews.com/colorado/news/after-several-delays-artemis-i-finally-launches-thanks-in-part-to-colorado/, 11/16/2022.
5. Annie Mehl, „CU Boulder yeast experiment targets impact of radiation on humans during NASA mission", Daily Camera, https://www.dailycamera.com/2022/09/12/cu-boulder-yeast-experiment-targets-impact-of-radiation-on-humans-during-nasa-mission/, 09/12/2022
6. Conor McCue, "Artemis set to blast off into space Saturday after delay", CBS Colorado, https://www.cbsnews.com/colorado/news/artemis-blast-off-into-space-saturday-after-delay/, 09/02/2022.
7. Daniel Strain, "Yeast bound for moon will provide clues on how radiation impacts astronauts", Phys.org, https://phys.org/news/2022-08-yeast-bound-moon-clues-impacts.html, 08/30/2022.
8. Judith Kohler, „ After scrubbed blast-off, Lockheed Martin in Jeffco looks to next launch window for made-in-Colorado spacecraft", The Denver Post, https://www.denverpost.com/2022/08/29/artemis-lockheed-colorado-launch-scrubbed/, 08/29/2022
9. Shi En Kim, "The Quest to Build a Functional, Energy-Efficient Refrigerator That Works in Space", Smithsonian Magazine, https://www.smithsonianmag.com/innovation/quest-to-build-functional-energy-efficient-refrigerator-that-works-in-space-180978281/, 07/27/2021.
10. N/A, „Deep Space Radiation Genomics (DSRG)", NASA Science, https://science.nasa.gov/biological-physical/investigations/dsrg, 05/01/2021.

11. C. Reppenhagen, “A refrigerator from CU Boulder could change the future of astronaut food”, 9News, https://www.9news.com/video/news/local/next/a-refrigerator-from-cu-boulder-could-change-the-future-of-astronaut-food/73-78e2ae29-d78f-4cb3-9a83-a9600d7f8964, 10/06/2020.
12. D. Gruber, M. Röggla, “Algen im Weltall?”, IschGleich Podcast, https://ischgleich.podigee.io/28-tobias-niederwieser, 08/31/2020.
13. J. Zehnder, “New FRIDGE could bring real ice cream to space”, University of Colorado Boulder, https://www.colorado.edu/aerospace/2020/04/23/new-fridge-could-bring-real-ice-cream-space, 04/23/2020.
14. T. Mayer, “Der große Traum vom Abheben”, Leipziger Volkszeitung, p.19, 10/19/2018.
15. **T. Niederwieser**, “Using algae to support astronauts on deep space missions”, *ROOM – The Space Journal*, 16(2), pp. 45-49, 2018.
16. E. Stanzl,”Wir alle wollen Astronauten werden”, Wiener Kurier, p.25, 10/21/2017.
17. J. Beals, “Tobias Niederwieser: Growing Little Green Algae in Space”, Office of Science and Technologies, Austria, https://www.ostaustria.org/bridges-blog/categories/arit-poster-session-osta-showcase, 05/26/2017.
18. D. Volkert, “Stay ahead of the Curve“, Technical University Munich, https://www.tum.de/en/global/international-locations/san-francisco-news/news-detail/article/33407, 08/15/2016.
19. A. Sandberg, “Student Profile: Tobias Niederwieser”, University of Colorado Boulder, https://www.colorado.edu/aerospace/student-profile-tobias-niederwieser, 2015.

TEACHING

SUPERVISED STUDENTS

Supervisor	Graduate Research Assistant, Matthew Beck, VGM Development, 08/2023-Present
Supervisor	Graduate Research Assistant, Michael Hirsch, VGM Development, 08/2021-08/2023
Supervisor	Graduate Research Assistant, Ryan Griffith, FRIDGE/VGM Development, 06/2020-08/2021
Supervisor	Graduate Research Assistant, Ben Wexler, PLASM Development, 08/2020-02/2021
Supervisor	Graduate Research Assistant, Robby Aaron, FRIDGE Development, 04/2019-08/2020
Local Advisor	TU Munich, Thomas Ruck, Master Thesis “Dynamic simulation of algal photobioreactors in spaceflight life support systems”, 07/2018-11/2018
Mentor	The BOLD Center, Spring Break for Research (Undergraduate), Emily Weidenfeller, 03/2018
Mentor	CU Boulder, Undergraduate Research Opportunities Program (UROP), Ryan Wall, 05/2016-08/2017
Local Advisor	TU Munich, PROMOS Scholarship, Sina Kaufmann, Master Thesis “Spacecraft Closed Loop Life Support System Testbed”, 10/2015-05/2016

SERVICE

VOLUNTEER POSITIONS

Organizing Team	**Launch Space Biology Workshop**, Boulder, 2023
Organizing Team	**4th Space Travel**, Virtual, 2021
Session Chair	**2021 ISSR&D Conference**, Virtual, 2021
Organizing Team	**Space Foundation**, New Generation Team, Space Symposium, Colorado Springs, 2021
Member	**International Astronautical Federation,** Space Habitats Committee, 2020-Present
Panelist	**International Astronautical Federation,** IAC 2020 Next Generation Plenary, 2020
PR&Com Team	**Space Generation Advisory Council**, Space Generation Congress, Washington, 2019
Logistics Team	**Space Generation Advisory Council**, Fusion Forum, Colorado Springs, 2018-2019
Moderator	**Space Generation Advisory Council**, Space Generation Congress, Bremen, 2018

Program Team	**Space Generation Advisory Council**, Fusion Forum, Colorado Springs, 2017-2018
National PoC	**Student European Low Gravity Research Association,** 2017-2018
Design Judge	**NASA HUNCH Program**, Denver, 2017
PR Officer	**Committee for Expansion into Key Space Industries**, Boulder, 2016-2018
Delegate	**Space Generation Advisory Council**, Space Generation Congress, Adelaide, 2017
Attendee	**United Launch Alliance** , 8th Emerging Space Industry Leaders Workshop, Denver, 2016
Fundraising Team	**University of Colorado Boulder**, CU International Festival, 2015-2016
Student Guide	**University of Colorado Boulder**, International Office, 2014-2017
Tennis trainer	**Technical University Munich**, University Sports Center (ZHS), 2013
Stem cell courier	**University of Leipzig**, Institute of Hematology, 2010-2013
Scholar	**Fraunhofer**, Fraunhofer-Talent-School, Munich, Germany, 2008
Delegate	**EWHA University**, International Science and Engineering Camp, Seoul, South Korea, 2008

PEER-REVIEWER

1. Acta Astronautica 2020, 2022
2. Astrobiology 2019 and 2020
3. International Conference on Environmental Systems 2016, 2017, 2018, 2019, 2020, 2021, 2022, and 2023
4. ISSRDC Conference 2020, 2021, 2022, 2023
5. Life Science in Space Research 2019, 2020, and 2021
6. Life 2022
7. Journal of Space Safety Engineering 2022, 2023

MEMBERSHIPS

AIAA	American Institute for Aeronautics and Astronautics
ELGRA	European Low Gravity Research Association
IAF	International Astronautical Federation
SGAC	Space Generation Advisory Council
SSPI	Space & Satellite Professionals International

GENERAL

TRAINING

Office	Microsoft Office, Open Office, Google Docs, Teams
CAD	CATIA, SolidWorks
Programming	Microsoft Visual Studio, National Instruments LabVIEW, MATLAB, Ansys Systems Tool Kit STK
Tennis	Association-trained C-Trainer
Research	IACUC Rodent Research Training
	Human Pluripotent Stem Cell Culture Training
	Engineering Graduate Student Mentor
Mobility	EU Driving License Class B
	US FAA Private Pilot Certificate - Airplane Single Engine Land
	NAUI Scuba Diver Open Water Certified
	VDWS International Basic Windsurf License
	VDWS International Basic Sailing License
	Colorado Mountain Club 14er Finisher
First Aid	Wilderness First Aid
Languages	German (native), English (fluent), French (intermediate)