

CURRICULUM VITAE

Dr. Ruth-Sophie Taubner

Academic Degrees: Dr. Mag. MSc. Bakk. BSc

Citizenship: Austria

SPECIALISATION: Astronomy and Microbiology (Astrobiology)

ACADEMIC WORK EXPERIENCE

- since 02/2022 - Scientific Coordinator at the Space Research Institute, Austrian Academy of Sciences (OeAW), Graz, Austria
- 10/2020 - 12/2021 - Postdoctoral Researcher at the Institute for Chemical Technology of Organic Materials, Johannes Kepler University (JKU) Linz, Austria
Project: *FEL-CO₂Hy-OÖ – Herstellung höherer Kohlenwasserstoffe unter Einbeziehung von CO₂ aus industriellen Prozessen und grünem Wasserstoff am Standort Oberösterreich*
- 04/2019 - 02/2020 - University assistant (PostDoc) at the Archaea Ecology and Evolution Group, Archaea Biology and Ecogenomics Division, Department of Ecogenomics and Systems Biology, University of Vienna, Austria.
Project: *TACKLE - TACK Superphylum and Lokiarchaeota Evolution* (ERC Advanced Grant 2015, Univ.-Prof. Dipl.-Biol. Dr. Christa Schleper)
- 02/2019 - 03/2019 - Project Team Member (PostDoc) at the Archaea Ecology and Evolution Group, Archaea Biology and Ecogenomics Division, Department of Ecogenomics and Systems Biology, University of Vienna, Austria.
Project: *TACKLE - TACK Superphylum and Lokiarchaeota Evolution*
- 10/2018 - 01/2019 - Project Team Member (PostDoc) at the Archaea Physiology & Biotechnology Group, Archaea Biology and Ecogenomics Division, Department of Ecogenomics and Systems Biology, University of Vienna, Austria.
Project: *NitroFix: Prototypenentwicklung zur mikrobiologischen Stickstofffixierung* (Development of Prototypes for Microbiological Nitrogen Fixation; Industry Project)
- 07/2014 - 09/2018 - Project Team Member (PraeDoc) at the Archaea Physiology & Biotechnology Group, Archaea Biology and Ecogenomics Division, Department of Ecogenomics and Systems Biology, University of Vienna, Austria.
Projects: - *NitroFix: Prototypenentwicklung zur mikrobiologischen Stickstofffixierung*
- *An interdisciplinary Approach: On the Habitability of Enceladus' Potential Subsurface Water Reservoir*
- 01/2013 - 12/2015 - University assistant (PraeDoc) at the Research Platform: ExoLife, research collaboration between the Institute of Aerosol Physics and Environmental Physics and the Department of Astrophysics, both University of Vienna, Austria.
Project: *An interdisciplinary Approach: On the Habitability of Enceladus' Potential Subsurface Water Reservoir*

RESEARCH FUNDING

- 2018 - Short Term Scientific Mission (STSM) grant for a three weeks stay at the Open University, Milton Keynes (UK), February 3 – 23; provided by the European Cooperation in Science and Technology (COST) Action TD1308 (“Origin and Evolution of Life on Earth and in the Universe”).
- 2016 - L'ORÉAL Austria [Fellowships for Young Female Scientists in Basic Research], financed by L'ORÉAL Austria within the initiative “For Women in Science” and by the Austrian Federal Ministry for Science, Research and Economy.

- 2009 - ERASMUS grant support for the mobility of students, 2009 (Exchange semester at the University of Uppsala, Sweden).
- since 2009 - More than 15 travel grants to attend conferences, symposia, and summer schools all over the world (e.g., IAU's Astrobiology 2017 in Chile, several EANA (European Astrobiology Network Association) and EPSC (European Planetary Science Congress) events, XIIth Rencontres du Vietnam, ESA Alpbach Summer School, etc.).

ACADEMIC EDUCATION

- 10/2013 - 10/2020 - Teacher Education Diploma programme (for the General Secondary Education; subjects: Physics and Mathematics), University of Vienna, Austria.
Diploma thesis: *Unterrichtskonzept zum Thema Klimawandel im Physikunterricht der elften Schulstufe*
Supervisors: Univ.-Prof. Dr. Martin Hopf
Prof. Mag. Dr. Ilse Bartosch
- 03/2013 - 09/2018 - Doctoral Programme Natural Sciences: Astronomy (with distinction), University of Vienna, Austria.
Doctoral thesis: *An interdisciplinary Approach: On the Habitability of Enceladus' potential subsurface water reservoir*
Supervisors: Univ.-Prof. Dr. Maria G. Firneis
Univ.-Prof. Dipl.-Biol. Dr. Christa Schleper
- 11/2012 - 04/2021 - Bachelor's degree programme in Physics, University of Vienna, Austria.
Bachelor thesis: *The Plumes of Enceladus*
Supervisor: Univ.-Prof. Dr. Regina Hitzenberger
- 10/2009 - 11/2012 - Master's degree programme in Astronomy (with distinction), University of Vienna, Austria.
Master thesis: *The possibility of the existence of a nitrogen cycle within Enceladus*
Supervisor: Univ.-Prof. Dr. Maria G. Firneis
- 10/2006 - 09/2009 - Bachelor's degree programme in Astronomy (with distinction), University of Vienna, Austria.
Bachelor thesis: *Satellitenmissionen zur Auffindung von extrasolaren Planeten – Unter Berücksichtigung der Methoden und bisherigen Erkenntnisse*
Supervisor: Privatdoz. Mag. Dr. Gerald Handler

HONOURS AND AWARDS

- 2019 - Gertrud Pleskot Award 2019, awarded by the Dean's team of the Faculty of Life Sciences, University of Vienna.
- 2015 - Second prize in the EANA 2015 student contest "Space Factor", held in Noordwijk (The Netherlands), October 6-9; awarded by EANA, for the talk "A new method for quantification of methane production of hydrogenotrophic methanogens".
- First prize in the EPSC 2015 science flash contest, held in Nantes (France), September 27 - October 2; awarded by the Early Career Scientists of the European Geosciences Union Division on Planetary and Solar System Sciences (ECS-EGU-PS), for the talk "When Astronomers try to be Microbiologists...".
- 2013 - "Würdigungspreis des Bundesministers für Wissenschaft und Forschung" (Award of Excellence), "Staatspreis für die besten Diplom- und Masterabschlüsse an allen österreichischen Universitäten und Fachhochschulen" (State Prize for the best diploma- and master-graduates of all Austrian universities and colleges); awarded by the Austrian Federal Ministry of Science and Research.
- Poster Award at EANA 2013, held in Szczecin (Poland), July 22-25; awarded by EANA, for the poster "Estimations on the physical conditions at the sea floor of the potential subsurface water reservoir of Enceladus".
- 2009-2013 - Performance Scholarships ("Leistungsstipendium") of the University of Vienna (awarded five times).

TEACHING EXPERIENCE

- since 03/2024 Co-Lecturer of “Special Topics of Technical Physics: Exoplanets and our place in the universe - an interdisciplinary approach”, TU Graz, Austria.
- 03/2021 - 01/2022 Lecturer of “From the Origin of Life to the Search for Exoplanets - Introduction to Astrobiology”, JKU Linz, Austria.
- 10/2020 - 06/2022 Co-Supervision of undergraduates and PhD students, Institute for Chemical Technology of Organic Materials, JKU Linz, Austria.
- 11/2015 - 02/2019 Lecturer in teacher training at the University Colleges of Teacher Education (PH Wien, PH NÖ), Vienna/Baden, Austria.
- 11/2014 - 02/2020 Co-Supervision of undergraduates, Department of Ecogenomics and Systems Biology, University of Vienna, Austria.
- 10/2014 - 09/2021 Co-Supervision of undergraduates, Department of Astrophysics, University of Vienna, Austria.
- 10/2014 - 01/2016 Co-Lecturer of the Consolidation module “Astrobiology”, University of Vienna, Austria.

ADDITIONAL INFORMATION

Member of more than 25 (scientific) organizing committees, including:

- Chair of EANA 2024, Graz (Austria), September 3-6, 2024.
- EANA International Spring School 2021: Hydrothermal Vents, held online, May 17-21, 2021.
- First General Assembly of the European Astrobiology Institute (EAI), held in Liblice (Czechia), May 28-30, 2019.
- IAU GA.

Member of several Professional Bodies:

- Member of the ESSC Panel “Life and Physical Sciences” (since 02/2025)
- EANA (member since 07/2013, council member since 09/2019, EANA Secretary since 09/2019, Austrian representative since 09/2022)
- AbGradE committee (10/2014-05/2023, president of AbGradE 09/2016-05/2023)
- EAI (interim board 02/2018-05/2019, board of trustees 03/2020-06/2020, management committee 05/2019 - 06/2022, co-organiser EAI Academy since 2021)
- Deputy leader of the European Astrobiology Campus (EAI, 05/2019 - 06/2022)
- Deutsche Astrobiologische Gesellschaft DAbG (German Astrobiology Society) (since 10/2018)

Co-editor of the special issues “Open Questions and Next Steps in Astrobiology in Europe - Celebrating 20 Years of EANA” (2022) and “Special Issue EANA 2024”, published in the International Journal of Astrobiology

Co-editor of the special issue “EANA 2024”, to be published in the International Journal of Astrobiology

Mentor at the mentoring program “Karriere:MINT” of the University of Applied Sciences Bremerhaven, Germany (2021)

Jury member of “VWA-MINT-Preise der ÖAW” for Physics, Astronomy, and Space Sciences (since 2022)

Jury member of “Jugend Forscht” for Geo- and Space Sciences (Federal Contest, since 2022)

Vice-chair of the YRP@Graz Board (Young Researcher Program in interdisciplinary space science and planetary research, since 2022)

SELECTED PUBLICATIONS

- PEER-REVIEWED ARTICLES:**
(out of 14)
- **Taubner R.-S.** & Baumann L. M. F., Steiner M., Pfeifer K., Reischl B. *et al.*, 2023, Lipidomics and Comparative Metabolite Excretion Analysis of Methanogenic Archaea Reveal Organism-Specific Adaptations to Varying Temperatures and Substrate Concentrations, *mSystems* **8**(2), e01159-22; doi:[10.1128/msystems.01159-22](https://doi.org/10.1128/msystems.01159-22).
 - **Taubner R.-S.**, Olsson-Francis K., Vance S. D., Ramkissoon N. K., Postberg F. *et al.*, 2020, Experimental and Simulation Efforts in the Astrobiological Exploration of Exo-oceans, *Space Science Reviews* **216**, 9; doi:[10.1007/s11214-020-0635-5](https://doi.org/10.1007/s11214-020-0635-5).
 - **Taubner R.-S.**, Pappenreiter P., Zwicker J., Smrzka D., Pruckner C. *et al.*, 2018, Biological methane production under putative Enceladus-like conditions, *Nature Communications*, **9**, 748; doi:[10.1038/s41467-018-02876-y](https://doi.org/10.1038/s41467-018-02876-y).
- INVITED TALKS:**
- **Taubner R.-S.**, 2019, Icy Moons – How Enceladus, Europa, and other Icy Worlds Changed our Idea of Habitability; 8th Astrobiology Society of Britain Conference, held in Newcastle, UK, April 25-26.
 - **Taubner R.-S.**, Pappenreiter P., Zwicker J., Smrzka D., Pruckner C. *et al.*, 2018, Biological methane production under putative Enceladus-like conditions; Workshop *ExoOceans: Space Exploration of the Outer Solar System Icy Moons Oceans* at the International Space Science Institute, Bern, Switzerland, June 18-22.
 - **Taubner R.-S.**, Pappenreiter P., Pruckner C, Zwicker J., Smrzka D. *et al.*, 2016, An interdisciplinary Approach: On the Habitability of Saturn's Icy Moon Enceladus; Astrobiology seminar at Stockholm University, held in Stockholm, Schweden, September 28.
- CONTRIBUTED TALKS:**
(out of >15)
- **Taubner R.-S.**, Rittmann S. K.-M. R, 2023, Why using (only) amino acids and lipids as biosignatures could be tricky - an example, Planetary research and the search for life beyond the Earth, held in Kiev (hybrid), Ukraine, October 23 – 26.
 - **Taubner R.-S.**, Pappenreiter P., Zwicker J., Smrzka D., Pruckner C. *et al.*, 2018, Simulating putative Enceladus-like conditions: The possibility of biological methane production on Saturn's icy moon, XXXth *IAU General Assembly*, Symposium 345: Origins: From the Protosun to the First Steps of Life, held in Vienna, Austria, August 20 – 31.
 - **Taubner R.-S.**, Baumann L. M. F., Birgel D., Firneis M. G., Schleper C., Rittmann S.K.-M.R., 2017, Lipid Pattern of Methanothermococcus okinawensis under Varying Enceladus-like Conditions; *Astrobiology* - research meeting by the IAU's commission F3, held in Coyhaique, November 26 – December 1.
 - **Taubner R.-S.**, Pappenreiter P., Pruckner C, Zwicker J., Smrzka D. *et al.*, 2016, Testing the Habitability of Saturn's Icy Moon Enceladus in an Interdisciplinary Attempt; *XIIth Rencontres du Vietnam: Search for Life: From Early Earth to Exoplanets*, held in Quy Nhon, Vietnam, December 11–16.
- POSTER PRESENTATIONS:**
(out of >40)
- **Taubner R.-S.**, Lammer H., Helling Ch., 2023, An emerging player on the European Astrobiology Landscape: The Space Research Institute of the Austrian Academy of Sciences (Graz, Austria); EANA 2023, held in Madrid, September 19 – 22.
 - **Taubner R.-S.**, Nauny P., Cassaro A., Kopacz N., Noack L. *et al.*, 2022, Astrobiology Graduates in Europe: Actions and Perspectives; *EPSC 2022*, held in Granada, September 18 – 23, Vol. 16, EPSC2022-1132.