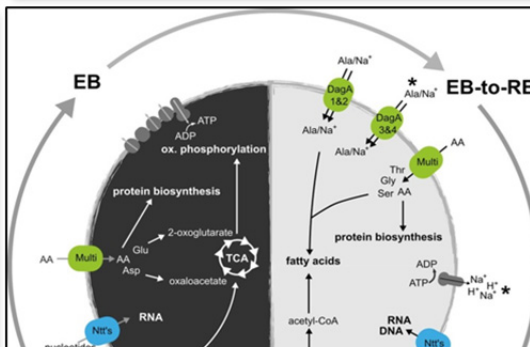
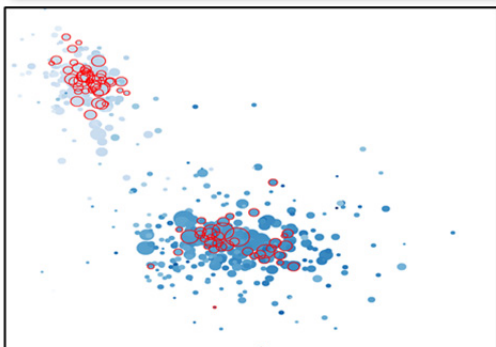
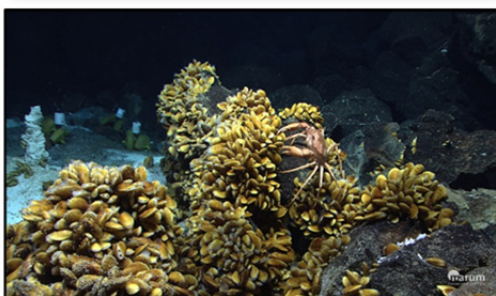
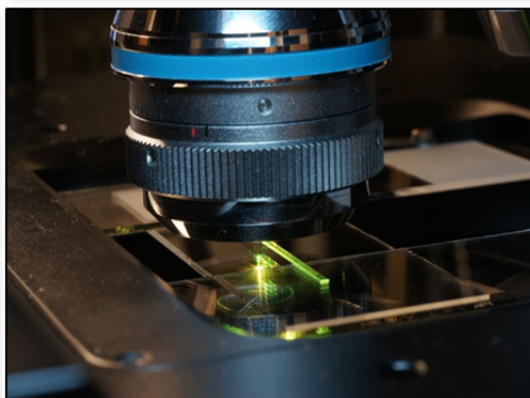
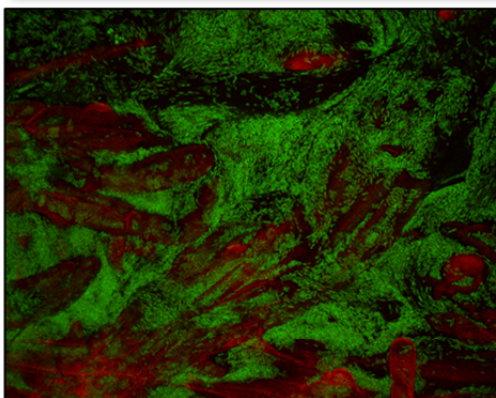
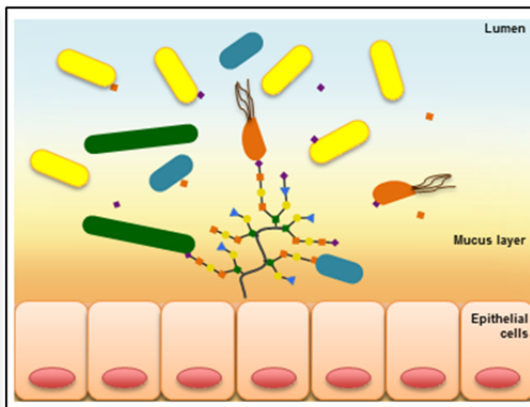


# Research Network Chemistry Meets Microbiology

## Department of Microbiology and Ecosystem Science

### Annual Report 2017



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## Research Network Chemistry Meets Microbiology (CMM): Overview of Activities

### *A microbiome center - connecting the University of Vienna and the Medical University of Vienna*

In 2017 a major activity of the research network was to **promote the establishment of a microbiome center at the interface of the University of Vienna and the Medical University of Vienna** in order to fill a major gap in the Austrian research landscape. Microbiome research is one of the focus areas of the research network. Beyond doubt microbiome research is one of the most exciting upcoming research fields in the life and medical sciences and its funding skyrockets internationally. In order to increase the visibility of microbiome research in Austria, members of the research network organized the **1<sup>st</sup> Symposium of the Austrian Microbiome Initiative** (main organizer Alexander Loy) that took place in Vienna on February 23, 2017 with more than 150 participants. In addition, Thomas Rattei co-founded the MICROBIOME Community of Special Interest within the International Society of Computational Biology (**ISCB**). He also organized and chaired its kickoff meeting at the ISMB conference in Prague (250 participants; July 23, 2017). In addition, Michael Wagner contributed several newspaper articles and videos and participated in a roundtable discussion that discussed microbiome-related questions in the context of the **Semesterfrage** "Gesundheit aus dem Labor – was ist möglich?". In addition, department members were involved in many other microbiome-focused public outreach activities (see detailed list below) and for example presented **two one-hour radio features in Ö1** (Alexander Loy, Matthias Horn, Michael Wagner) and a 40 min special on microbiome research in the **ORF Science Talk**, and gave an extremely well-attended **Christmas lecture at the AKH** on this topic (both by Michael Wagner).

### *Joint research and teaching activities*

In addition, to these activities various collaborative research activities between chemists and microbiologists in CMM were initiated, continued or published within the research network.

- **Michael Wagner, Holger Daims** (both DMES) and **Gunda Köllensperger** (Department of Analytical Chemistry) are involved in collaborative research that combines genomics, metabolomics, and proteomics to decipher the symbiotic molecular interactions between coexisting nitrifying (including the recently discovered Comammox organism) and heterotrophic microorganisms.
- **Dagmar Woebken** (DMES) and **Gunda Köllensperger** (Department of Analytical Chemistry) are collaborating on multi-disciplinary investigations of community dynamics in biological soil crusts and plant-microbe interactions of grassland and paddy soils by combining amplicon sequencing, metagenomics, metatranscriptomics and metabolics.
- **Ivo Hofacker** (Institute of Theoretical Chemistry) and **Thomas Rattei** (DMES) are involved in collaborative research on viral mRNAs (project **FWF I 1303**) and establish national software and database infrastructure for life science information (**HRSM SOLID**).

- **Ivo Hofacker** (Institute of Theoretical Chemistry) and **Thomas Rattei** (DMES) are active in the Austrian Bioinformatics Platform (ATBI; <http://bioinformatik.at>), which promotes and develops computational infrastructure for life sciences in Austria, including the upcoming Austrian ELIXIR node.
- In order to foster cooperation within CMM, a call for two **CMM Joint Interdisciplinary Research Groups** headed by early career researchers (€ 3.000,- each) was open in spring 2017. After a stringent evaluation procedure the full amount was pooled to support one group's proposal:
 

Petra Pjevac (UV-DMES/DOME), Yasin ElAbiead (UV-Analytical Chemistry), Christopher Sedlacek (UV-DMES/DOME), Gunda Köllensperger (UV-Analytical Chemistry), Holger Daims (UV-DMES/DOME): "Investigating interactions of ammonia-oxidizing archaea and co-enriched heterotrophic bacteria in laboratory cultures by stable isotope labeling and metabolomics."
- **David Berry** (DMES) and **Benedikt Warth** (Department of Food Chemistry and Toxicology) are collaborating on the microbiome and metabolome of extremely low birthweight premature neonates.
- **David Berry** (DMES) and **Doris Marko** (Department of Food Chemistry and Toxicology) are collaborating on the interactions of dietary anthocyanin on the gut microbiome and oxidative stress responses.
- **Dagmar Wöbken, Andreas Richter, Alexander Loy** (DMES) and **Mark Somoza** (Institute of Inorganic Chemistry) have started a cooperation on the design and synthesis of RNA microarrays for stable isotope probing by NanoSIMS (in the frame of the FWF DK+ *Microbial Nitrogen Cycling*).
- Joint paper between the **Somoza** and **Berry** groups: Schueller K, Riva A, Pfeiffer S, **Berry D, Somoza V**. 2017. Members of the oral microbiota are associated with IL-8 release by gingival epithelial cells in healthy individuals. *Front. Microbiol.* 8:29.
- **Ivo Hofacker, Andrea Tanzer, Christoph Flamm** (all Institute of Theoretical Chemistry) and **Harald Marx, Thomas Rattei** (DMES) jointly teach in the new Master programs "Computational Science" and "Bioinformatics".

#### *Joint grant applications*

- **Alexander Loy, Michael Wagner** (DMES) and **Mark Somoza** (Institute of Inorganic Chemistry) are members of an European consortium that re-applied for the Marie Curie Innovative Training Network HORNET - High-resolution correlative microscopy network within the EU Horizon 2020 framework programme (application currently under review).
- A full proposal for a doctoral program on "Microbe-Host Interactions - from Molecules to Communities" was submitted to the FWF call doc.funds. **Matthias Horn** is the coordinator of this effort; the list of PIs included several members of DMES as well as **Gunda Köllensperger** (Department of Analytical Chemistry). Despite excellent and very good reviews, the project was not funded; resubmission is discussed currently.

## **Department of Microbiology and Ecosystem Science: Executive Summary**

The Department of Microbiology and Ecosystem Science is comprised of three Divisions - Microbial Ecology, Terrestrial Ecosystem Research, and Computational Systems Biology. Our dynamic and international team is made up of around 130 people (researchers and support staff) from 28 countries.

In 2017 the Department of Microbiology and Ecosystem Science further strengthened its position as one of the leading international research centers in Microbiology, Microbial Ecology, Ecosystem Research, and Bioinformatics. In a **2017 Microbiology ranking of the Laborjournal (evaluated period 2011 and 2015)**, the three division heads of the Department (**Andreas Richter, Thomas Rattei, and Michael Wagner**) were all among the **Top 40 most cited German, Austrian, and Swiss microbiologists** and represented together with Krzysztof Chylinski (VBC core facility) the most-cited Austrian microbiologists. Furthermore, as in the previous years, the head of the department, **Michael Wagner, has also been listed 2017 by Clarivate Analytics (formerly known as Thomson Reuters) among the worldwide most highly cited researchers** and is 2017 the only microbiologist with this rating in Austria.

Members of the Department published in 2017 **57 papers in ISI listed journals including one research paper in *Nature* and two in *Science***. In total, **91% of these papers appeared in the top 25% journals (Q1)** in the respective Web of Science subject categories. **Since the foundation of the Research Network in 2015, department members have published 13% of all University of Vienna papers that appeared in *Nature*, *Science* or *PNAS* during this period**. This portion is higher than the respective contribution of every other department in the Faculty of Life Sciences and also higher than the contribution of the MFPL (sources: *Wissensbilanz der Universität Wien 2015/2016*, and *u:cris Research Information System* with reference date 28. February 2018).

Members of the Department received important recognitions of their scientific activities. **Michael Wagner received the prestigious Jim Tiedje Award of the International Society for Microbial Ecology (ISME)**, which is the lifetime achievement award of this worldwide largest and leading professional society for microbial ecology. **Michael Wagner was also elected 2017 as member of the European Molecular Biology Organisation (EMBO)**. Election to EMBO Membership is recognition of research excellence and the outstanding achievements made by a life scientist. In total 35 researcher from Austria are EMBO members, and Michael is the only microbiologist among this group.

**David Berry received the City of Vienna Promotion Award in the category Natural Sciences**. Moreover, **Holger Daims and Alexander Loy were promoted to Full Professors** in the course of the first and highly competitive promotion procedure for associate professors conducted at the University of Vienna according to §99.4 of the University Law. **Anne Daebeler, a**



Postdoc at the department, received a **Hertha Firnberg Stipend of the Austrian Science Fund (FWF)**, and **Hanna Koch**, a former PhD student at the department, received the **Doc Award of the University of Vienna and the City of Vienna**.

In the course of the 2017 call for **Research Platforms at the University of Vienna**, **Holger Daims, Michael Wagner, and Andreas Richter** (all from DMES) together with **Kristina Djinović-Carugo** (MFPL) have been granted a **new research platform** that will address fundamental aspects of the **ecology and physiology of Commamox** organisms. The new platform will be launched in June 2018.

In total, the research in the department was funded by **44 external grants in 2017** with a **total budget of more than 17 Mio €**.

Members of the department presented their research in **63 invited oral contributions on national and international conferences, seminars, and workshops**.

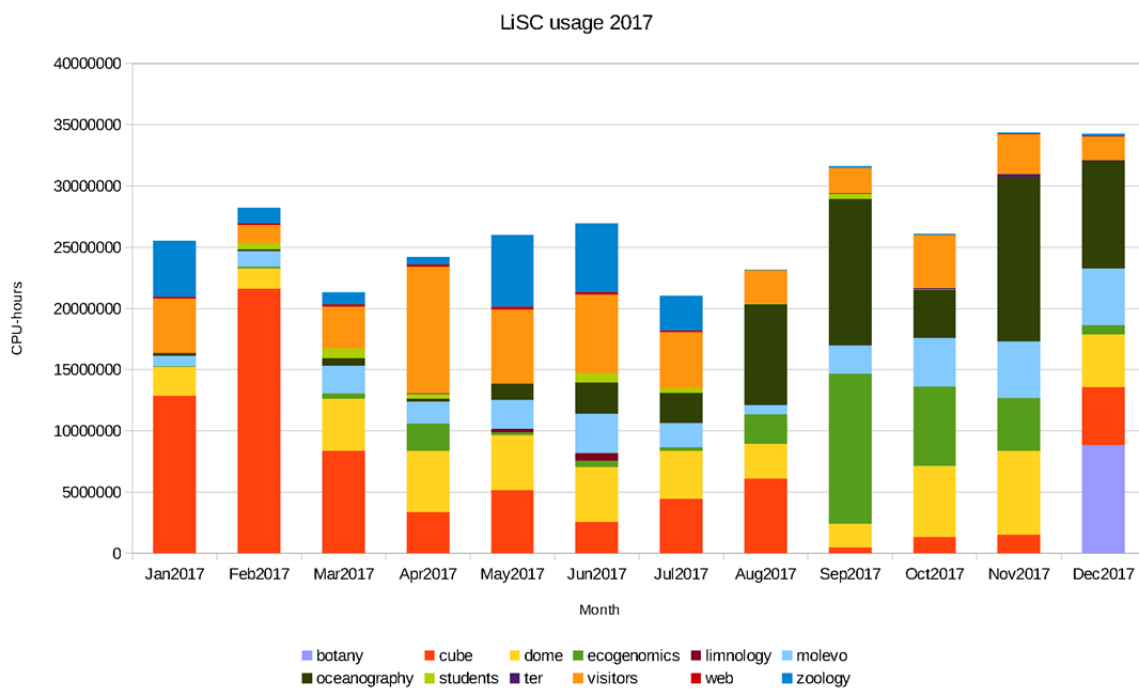
The department continued to be very active in public outreach. In addition to the various activities to promote microbiome research in Austria, several of our papers were highlighted in the media. For example, the **discovery of novel giant viruses in the municipal wastewater treatment plant of Klosterneuburg (Austria)** that appeared in *Science* (co-authored by **Matthias Horn, Holger Daims, and Michael Wagner**) created attention in public media (including articles in *Der Spiegel* and *Le Monde*), journals and newspapers and also fueled an international scientific debate on the evolution of giant viruses and a possible fourth domain of life on our planet. Similarly, the finding that **Comammox microbes are among the nitrogen-cycling microbes best adapted to nutrient-depleted environments** (publication in *Nature* first-authored by **Dimitri Kits**, co-authored by **Holger Daims** and last-authored by **Michael Wagner**) received wide media coverage. Also well covered in national and international media was the discovery of a novel protein secretion system published in *Science* as a result of a collaboration between the team of **Matthias Horn** with Martin Pilhofer's group at the ETH Zürich. In addition, publications in *Nature Biotechnology* and *Nature Methods* with **Thomas Rattei** as co-author received wide attention in the press.

**Department members were involved in the organization of several important international conferences. Michael Wagner and Holger Daims** co-organized and co-chaired the **5<sup>th</sup> International Conference on Nitrification and Related Processes (ICON5)** that took place in Vienna from July 23-27, 2017. ICON5 attracted more than 150 experts from 19 countries. **Michael Wagner** was member of the organizing and steering committee of **ASM Microbe 2017**, the worldwide largest microbiology conference that took place in New Orleans (June 1-5, 2017) and had more than 10,000 participants.

**Furthermore, Thomas Rattei** contributed to two major community efforts towards genome standards (MiMAG, MiSAG) and benchmarks of computational methods in microbiology and microbial ecology (CAMI). Public web platforms, databases and bioinformatics tools,

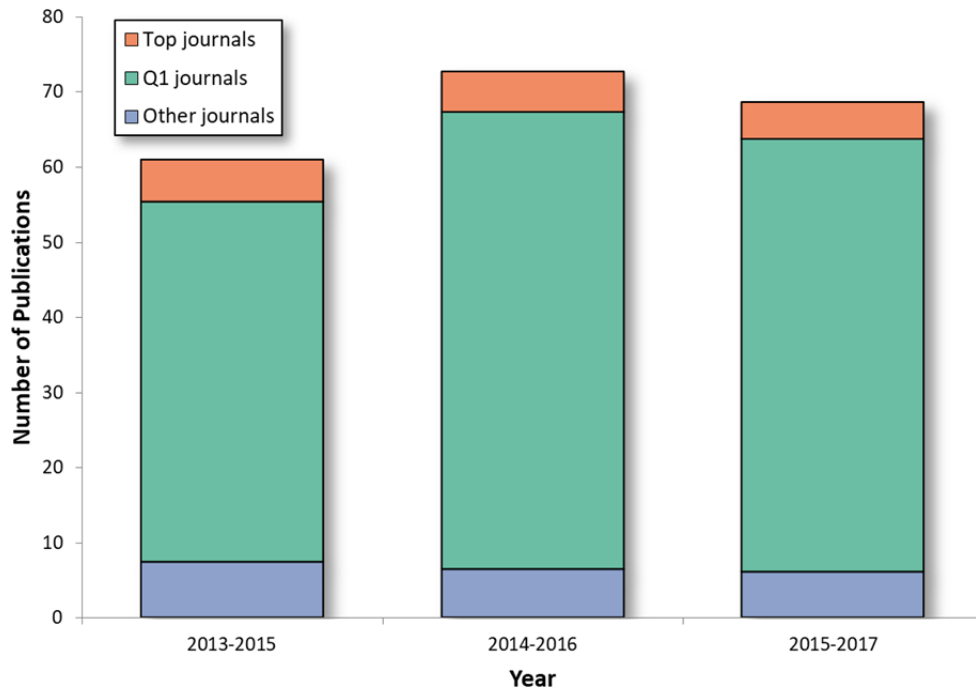
provided by DMES and administered by **Florian Goldenberg**, were visited or used in >100,000 user sessions.

The **Life Science Compute Cluster (LiSC)**, scientifically coordinated by **Thomas Rattei** and administered by **Florian Goldenberg**, provided >300 mio CPU-h as well as extensive technical and scientific support to **>250 users from 12 departments/user groups**. In 2017, the departments of the Faculty of Life Science, which had started to establish own compute clusters for bioinformatics and data analysis, joined the LiSC. Five compute nodes and virtualization servers of the faculty were integrated. The investment project **IP257003** has allowed us to replace 32 outdated compute nodes by modern ones, which has substantially improved our technical capacity for computational biology. The LiSC is continuously used by DMES, many departments of the Faculty of Life Sciences, and students. The cluster operates at a typical CPU utilization of >70% and thereby fills the gap between workgroup based computers and the Vienna Scientific Cluster.

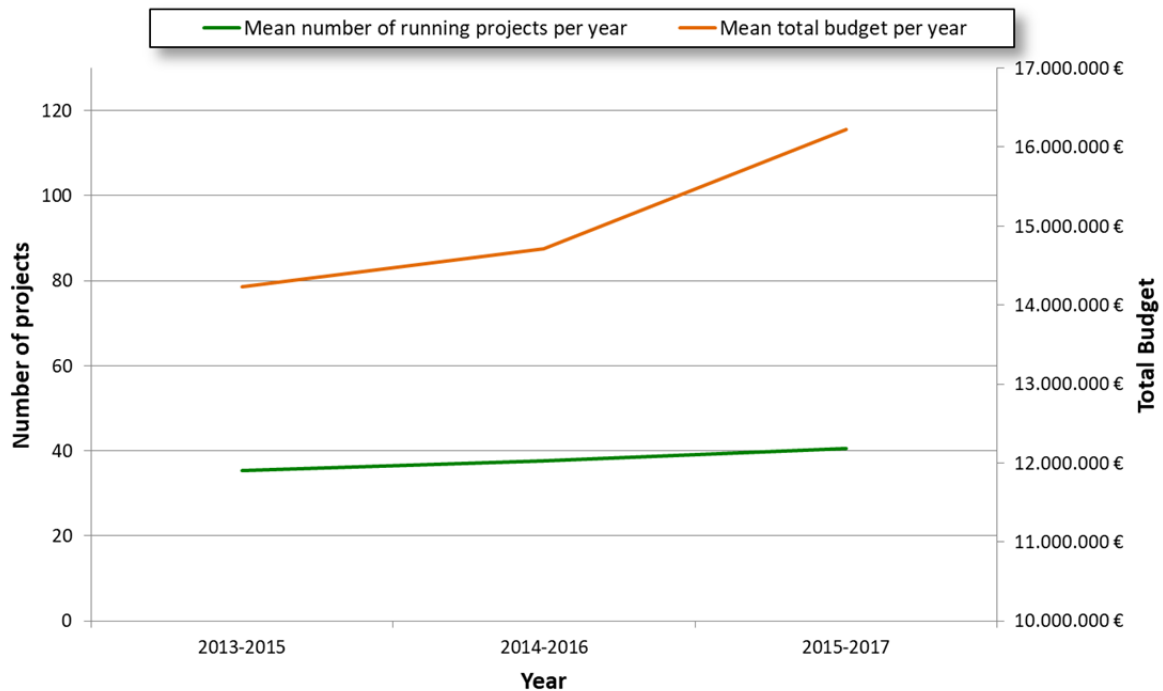


Usage of the Life Science Compute Cluster (LiSC) by departments and other user groups.

## Publications and Third-Party Funding in 2017 and Past Years



Mean numbers of publications per year in interdisciplinary top journals, Q1 journals in the respective subject categories (according to the ISI Journal Citation Report), and other peer-reviewed journals.



Mean number of third-party funded projects and mean total project budget per year.



## Department of Microbiology and Ecosystem Science Annual Report for 2017

### Structure of the Department

The Department of Microbiology and Ecosystem Science comprises three divisions:

- The Division of Microbial Ecology (DOME)
- The Division of Terrestrial Ecosystem Research (TER)
- The Division of Computational Systems Biology (CUBE)

The **Division of Microbial Ecology** includes **seven research groups**. The group leaders are David Berry, Holger Daims, Matthias Horn, Alexander Loy, Jillian Petersen, Michael Wagner, and Dagmar Woebken. All groups share lab and office space, they are tightly connected through their research topics, joint projects, joint seminars, and the application of similar molecular methods.

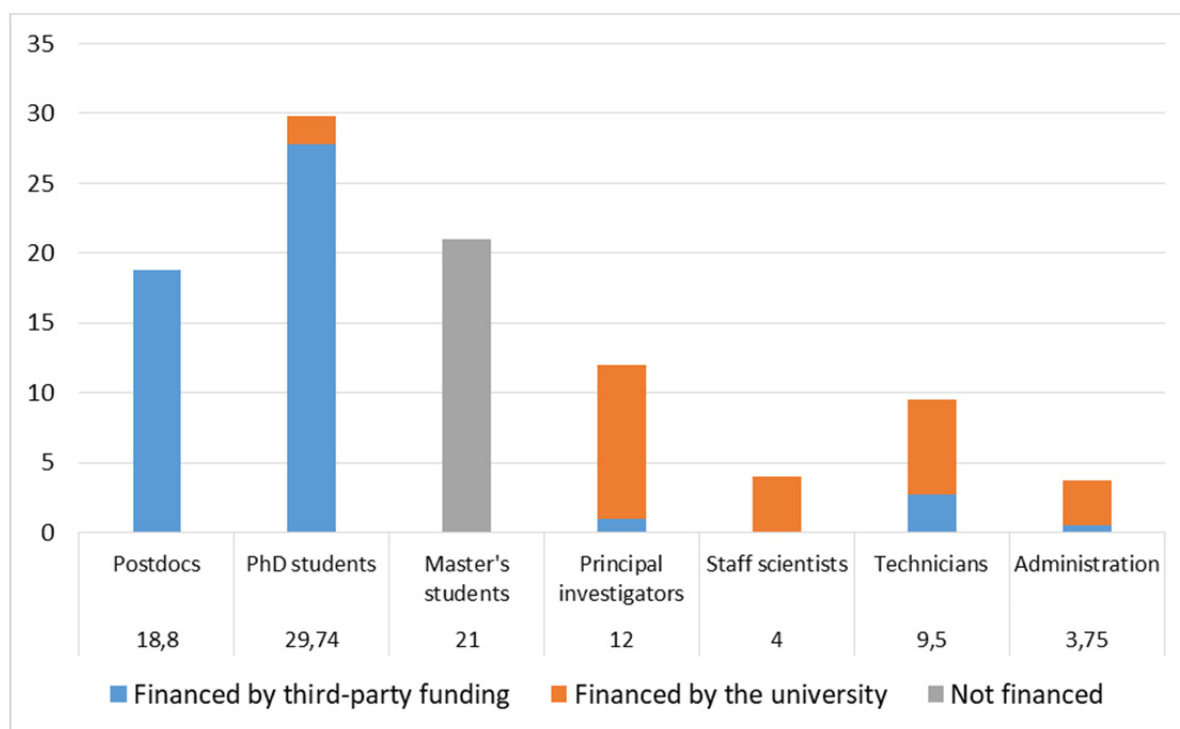
The **Division of Terrestrial Ecosystem Research** includes **three research groups**. The group leaders are Christina Kaiser, Andreas Richter, and Wolfgang Wanek. The research groups are closely working together as evidenced by many joint publications and projects, by joint seminars and interrelated research areas (ecosystem ecology and global environmental change). TER runs the **SILVER laboratory** (Stable Isotope Laboratory of the University of Vienna for Environmental Research), the instruments of which are being part of the Large Instrument Facility for Advanced Isotopes in Life Sciences.

The **Division of Computational Systems Biology** includes **two research groups**. The group leaders are Harald Marx and Thomas Rattei. The Rattei group focuses on "In silico genomics" and the Marx group on "Computational peptidomics". Both groups share office space, an in-house IT infrastructure, and are tightly connected through their research topics, joint projects, joint seminars, and the application of similar bioinformatic methods.

### Personnel

On the reference date December 31, 2017 in total **81.54 full-time equivalents (FTE)** of **Postdocs, PhD students, Master's students, and Principal Investigators** at the Department were supported by **4 FTE of staff scientists, 9.5 FTE of technicians, and 3.75 FTE of administrative staff**.

Please refer to **Annex 1** for a comprehensive list of all personnel, including project staff.



Full-time equivalents in the different staff categories at the Department on the reference date December 31, 2017.

### Laboratory and Office Space

Category	Space
Office rooms	548.43 m <sup>2</sup>
Laboratories	559.45 m <sup>2</sup>
Other rooms (e.g., autoclave room, storage, seminar rooms, social rooms, etc.)	405.15 m <sup>2</sup>

### Visiting Scientists

In 2017 the Department hosted 27 visiting scientists from 16 countries.

Name	Home Institution	Country	Period of Stay
1. Prof. Andreas Schramm	Aarhus University	Denmark	28.2.-1.3.2017
2. Prof. Chantal Abergel	Centre National de la Recherche Scientifique & Aix-Marseille University	France	29.6.2017
3. Prof. Dr. Mette M. Svenning	UiT, The Arctic University of Norway, Tromsø	Norway	3.3.2017

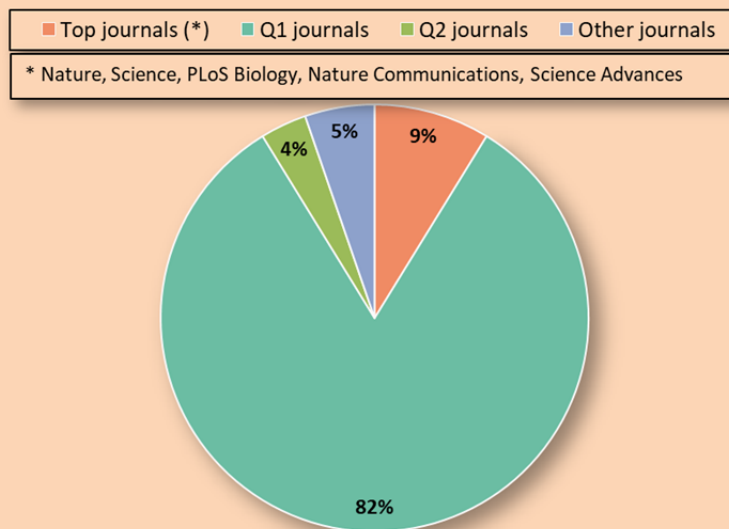
4.	Assoc. Prof. Dr. Baozhan Wang	Chinese Academy of Science - Institute of Soil Science (Research scholarship from China Scholarship Council)	China	1.10.2016- 30.9.2017
5.	Assoc. Prof. Dr. Masaki Shintani	Shizuoka University (Research scholarships from Jiro Murakawa Fund for the Faculty of Engineering and Japan Society for the Promotion of Science)	Japan	26.9.2016- 31.8.2018
6.	Assoc.Prof. Dr. Shoquin Sun	Chinese Academy of Science (Research scholarship by the IAEA)	China	6.6.2017- 1.7.2017
7.	Dr. Alexander Tveit	UiT, The Arctic University of Norway, Tromsø	Norway	4.10.2016- 31.12.2017
8.	Dr. Elena Lebedeva	Winogradsky Institute, Moscow	Russia	8.1.-14.1.2017
9.	Dr. Jan Jansa	Academy of Sciences of the Czech Republic	Czech Republic	19.4.2017- 20.4.2017
10.	Dr. Jan Jansa	Academy of Sciences of the Czech Republic	Czech Republic	20.6.2017- 22.6.2017
11.	Dr. Jan van Gils	Netherlands Institute of Sea Research	The Netherlands	18.11.2017- 20.11.2017
12.	Dr. Li-Jun Zhou	Chinese Academy of Science - Institute of Soil Science (Research scholarship from China Scholarship Council)	China	1.11.2016- 31.10.2017
13.	Dr. Maarit Liimatainen, MSc. Hem Bhattarai	University of Eastern Finland, Kuopio	Finland	11.-15.12.2017
14.	Dr. Sara Maranón Jiménez	CREAF, Center for Ecological Research and Forestry Applications, Universitat Autonomia de Barcelona, Spain	Spain	1.9.2017- 10.11.2017
15.	Dr.Alexander Moschen	Medizinische Universität Innsbruck	Austria	14.12.2017
16.	Dr.Christian Sieber	DOE Joint Genome Institut, University of Berkeley	USA	24.-27.7.2017
17.	Dr.Eva Heinz	Welcome Trust Sanger Institute, Cambridge,	UK	5.-8.12.2017
18.	Dr.Harald Marx	Coon Research Group, University of Wisconsin	USA	15.-17.3.2017
19.	Dr. Peer Bork	EMBL-Heidelberg	Germany	24.11.2017
20.	Morgan Furze	University of Sydney	Australia	13.6.17- 1.7.2017
21.	MSc Adam Stovicek	Ben-Gurion University of the Negev	Israel	18.9.2017- 6.10.2017
22.	MSc Capucine Baubin	Ben-Gurion University of the Negev	Israel	18.9.2017- 6.10.2017
23.	MSc Gabrielle Daudin	INRA, UMR Eco&Sols, Montpellier	France	10.10.2016- 13.6.2017

24.	MSc Kriti Sharma	University of North Carolina, Chapel Hill	USA	6.11.2017-30.11.2017
25.	MSc Maximilian Mora	Medizinische Universität Graz	Austria	26.4.2017
26.	MSc Petra Bukovska	Academy of Sciences of the Czech Republic	Czech Republic	19.4.2017-20.4.2017
27.	MSc. Rebecca Beavens	University of Amsterdam	The Netherlands	13.11.2017-24.11.2017

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## Publications

In 2017 members of the Department published **57 papers in peer-reviewed journals, 1 book chapter, and 3 other publications**. In total **91%** of the papers appeared in the top 25% journals (**Q1**) in the respective Web of Science subject categories or in interdisciplinary top journals, respectively.



## Original Research and Review Articles in Peer-Reviewed Journals

Subject categories and impact factors according to the Journal Citation Report (ISI) 2016.

1. **Berry D, Gutierrez T.** 2017. Evaluating the detection of hydrocarbon-degrading bacteria in 16S rRNA gene sequencing surveys. **Front Microbiol** 8: 2460. [Subject category: Microbiology; Q1, IF 4.076]
2. **Böck D, Medeiros JM, Tsao HF, Penz T, Weiss GL, Aistleitner K, Horn M, Pilhofer M.** 2017. *In situ* architecture, function, and evolution of a contractile injection system. **Science** 6352: 713-717. [Subject category: Multidisciplinary Sciences; Q1, IF 37.205]
3. **Bowers RM, Kyripides NC, Stepanauskas R, Harmon-Smith M, Doud D, Reddy TBK, Schulz F, Jarett J, Rivers AR, Eloë-Fadrosh EA, Tringe SG, Ivanova NN, Copeland A, Clum A, Becraft ED, Malmstrom RR, Birren B, Podar M, Bork P, Weinstock GM, Garrity GM, Dodsworth JA, Yooseph S, Sutton G, Glöckner FO, Gilbert JA, Nelson WC, Hallam SJ, Jungbluth SP, Ettema TJG, Tighe S, Konstantinidis KT, Liu WT, Baker BJ, Rattei T, Eisen JA, Hedlund B, McMahon KD, Fierer N, Knight R, Finn R, Cochrane G, Karsch-Mizrachi I, Tyson GW, Rinke C, Lapidus A, Meyer F, Yilmaz P, Parks DH, Eren AM, Schriml L, Banfield JF, Hugenholtz P, Woyke T.** 2017. Minimum information about a single amplified genome (MISAG) and a metagenome-assembled genome (MIMAG) of bacteria and archaea. **Nature Biotechnol** 8: 725-731. [Subject category: Biotechnology and Applied Microbiology; Q1, IF 41.667]
4. **Butler RN, Kosek M, Krebs N, Loechl C, Loy A, Owino V, Zimmermann M, Morrison DJ.** 2017. Stable isotope techniques for the assessment of host and microbiota response during gastrointestinal dysfunction. **J Pediatr Gastroenterol Nutr** 64: 41852. [Subject category: Pediatrics; Q1, IF 2.799]
5. **Canarini A, Kiær LP, Dijkstra FA.** 2017. Soil carbon loss regulated by drought intensity and available substrate: A meta-analysis. **Soil Biol Biochem** 112: 90-99. [Subject category: Soil Science; Q1, IF 4.857]
6. **Canarini A, Mariotte P, Ingram L, Merchant A, Dijkstra FA.** 2017. Mineral-associated soil carbon is resistant to drought but sensitive to legumes and microbial biomass in an Australian grassland. **Ecosystems** (e-pub.), 1-15. [Subject category: Ecology; Q1, IF 4.198]

7. **Capel E, Barnier JP, Zomer AL, Bole-Feysot C, Nussbaumer T, Jamet A, Lécuyer H, Euphrasie D, Virion Z, Frapy E, Pélissier P, Join-Lambert O, Rattei T, Bourdoulous S, Nassif X, Coureuil M.** 2017. Peripheral blood vessels are a niche for blood-borne meningococci. **Virulence** 8: 1808-1819. [Subject category: Immunobiology and Microbiology; Q1, 4.665]
8. **Collingro A, Köstlbacher S, Greuter L, Stepanauskas R, Hallam SJ, Horn M.** 2017. Unexpected genomic features in widespread intracellular bacteria: evidence for motility of marine chlamydiae. **ISME J** 10: 2334-2344. [Subject category: Microbiology; Q1, IF 9.664]
9. **Cordero I, Ruiz-Diez B, Balaguer L, Richter A, Pueyo JJ, Rincon A.** 2017. Rhizospheric microbial community of *Caesalpinia spinosa* (Mol.) Kuntze in conserved and deforested zones of the Atiquipa fog forest in Peru. **Appl Soil Ecol** 114: 132-141. [Subject category: Soil Science; Q2, IF 2.786]
10. **Di Giglio MG, Muttenthaler M, Harpsøe K, Liutkeviciute Z, Keov P, Eder T, Rattei T, Arrowsmith S, Wray S, Marek A, Elbert T, Alewood PF, Gloriam DE, Gruber CW.** 2017. Development of a human vasopressin V1a-receptor antagonist from an evolutionary-related insect neuropeptide. **Sci Rep** 7: 41002. [Subject category: Multidisciplinary Sciences; Q1, IF 4.259]
11. **Dumschott K, Richter A, Loescher W, Merchant A.** 2017. Post photosynthetic carbon partitioning to sugar alcohols and consequences for plant growth. **Phytochemistry** 144: 243-252. [Subject category: Plant Sciences; Q1, IF 3.205]
12. **Eder T, Kobus S, Stallmann S, Stepanow S, Köhrer K, Hegemann JH, Rattei T.** 2017. Genome sequencing of *Chlamydia trachomatis* serovars E and F reveals substantial genetic variation. **Pathog Dis** 75. [Subject category: Microbiology; Q1, IF 2.335]
13. **Füssel J, Lückner S, Yilmaz P, Nowka B, van Kessel MAHJ, Bourceau P, Hach PF, Littmann S, Berg J, Spieck E, Daims H, Kuypers MMM, Lam P.** 2017. Adaptability as the key to success for the ubiquitous marine nitrite oxidizer *Nitrococcus*. **Sci Adv** 3: e1700807. [No IF available yet for this journal]
14. **Harrison JP, Angel R, Cockell CS.** 2017. Astrobiology as a framework for investigating antibiotic susceptibility: a study of *Halomonas hydrothermalis*. **J R Soc Interface** 126: online only. [Subject category: Multidisciplinary Sciences; Q1, IF 4.128]
15. **Harrison JP, Berry D.** 2017. Vibrational spectroscopy for imaging single microbial cells in complex biological samples. **Front Microbiol** 8: 675. [Subject category: Microbiology; Q1, IF 4.076]
16. **Herbold CW, Lehtovirta-Morley LE, Jung MY, Jehmlich N, Hausmann B, Han P, Loy A, Pester M, Sayavedra-Soto LA, Rhee SK, Prosser JI, Nicol GW, Wagner M, Gubry-Rangin C.** 2017. Ammonia-oxidising archaea living at low pH: Insights from comparative genomics. **Environ Microbiol** 12: 4939-4952. [Subject category: Microbiology; Q1, 5.965]
17. **Hochkogler CM, Lieder B, Rust P, Berry D, Meier SM, Pignitter M, Riva A, Leitinger A, Bruk A, Wagner S, Hans J, Widder S, Ley JP, Krammer GE, Somoza V.** 2017. A 12-week intervention with nonivamide, a TRPV1 agonist, prevents a dietary-induced body fat gain and increases peripheral serotonin in moderately overweight subjects. **Mol Nutr Food Res** 5: 1600731. [Subject category: Food Science & Technology; Q1, IF 4.323]
18. **Hu Y, Zheng Q, Wanek W.** 2017. Flux analysis of free amino sugars and amino acids in soils by isotope tracing with a novel liquid chromatography/high resolution mass spectrometry platform. **Anal Chem** 17: 9192-9200. [Subject category: Chemistry, Analytical; Q1, IF 6.320]
19. **Hubalek V, Buck M, Tan B, Foght J, Wendeberg A, Berry D, Bertilsson S, Eiler A.** 2017. Vitamin and amino acid auxotrophy in anaerobic consortia operating under methanogenic conditions. **mSystems** 5: e00038-17. [No IF available yet for this journal]



20. **Jochum LM, Chena X, Lever MA, Loy A, Jørgensen BB, Schramm A, Kjeldsen KU.** 2017. Depth distribution and assembly of sulfate-reducing microbial communities in marine sediments of Aarhus Bay. **Appl Environ Microbiol** 83: e01547-17. [Subject category: Microbiology; Q1, IF 3.807]
21. **Kits KD, Sedlacek CJ, Lebedeva EV, Han P, Bulaev A, Pjevac P, Daebeler A, Romano S, Albertsen M, Stein LY, Daims H, Wagner M.** 2017. Kinetic analysis of a complete nitrifier reveals an oligotrophic lifestyle. **Nature** 549: 269-272. [Subject category: Multidisciplinary Sciences; Q1, IF 40.137]
22. **König L, Siegl A, Penz T, Haider S, Wentrup C, Polzin J, Mann E, Schmitz-Esser S, Domman D, Horn M.** 2017. Biphasic metabolism and host interaction of a chlamydial symbiont. **mSystems** 2: e00202-16. [No IF available yet for this journal]
23. **Ladurner A, Zehl M, Grienke U, Hofstadler C, Faur N, Pereira FC, Berry D, Dirsch VM, Rollinger JM.** 2017. Allspice and clove as source of triterpene acids activating the G protein-coupled bile acid receptor TGR5. **Front Pharmacol** 8: 468. [Subject category: Pharmacology & Pharmacy; Q1, IF 4.4]
24. **Lang M, Berry D, Passecker K, Mesteri I, Bhuju S, Ebner F, Sedlyarov V, Evstatiev R, Dammann K, Loy A, Kuzyk O, Kovarik P, Khare V, Beibel M, Roma G, Meisner-Kober N, Gasche C.** 2017. HuR small-molecule inhibitor elicits differential effects in adenomatous polyposis and colorectal carcinogenesis. **Cancer Res** 77: 2424-2438. [Subject category: Oncology; Q1, IF 9.122]
25. **Lesaulnier CC, Herbold CW, Pelikan C, Gérard C, Le Coz X, Gagnot S, Berry D, Niggemann J, Dittmar T, Singer GA, Loy A.** 2017. Bottled aqua incognita: Microbiota assembly and dissolved organic matter diversity in natural mineral waters. **Microbiome** 5: 126. [Subject category: Microbiology; Q1, IF 8.496]
26. **Liu M, Li C, Xu X, Wanek W, Jiang N, Wang H, Yang X.** 2017. Organic and inorganic nitrogen uptake by 21 dominant tree species in temperate and tropical forests. **Tree Physiol** 11: 1515-1526. [Subject category: Forestry; Q1, 3.653]
27. **Liu S, Han P, Hink L, Prosser JI, Wagner M, Brüggemann N.** 2017. Abiotic conversion of extracellular NH<sub>2</sub>OH contributes to N<sub>2</sub>O emission during ammonia oxidation. **Environ Sci Technol** 22: 13122-13132. [Subject category: Environmental Sciences; Q1, IF 6.96]
28. **Loy A, Pfann C, Steinberger M, Hanson B, Herp S, Brugiroux S, Gomes Neto JC, Boekschoten MV, Schwab C, Urich T, Ramer-Tait AE, Rattei T, Stecher B, Berry D.** 2017. Lifestyle and horizontal gene transfer-mediated evolution of *Mucispirillum schaedleri*, a core member of the murine gut microbiota. **mSystems** 2: e00171-16. [No IF available yet for this journal]
29. **Lutz U, Nussbaumer T, Spannagl M, Diener J, Mayer KF, Schwechheimer C.** 2017. Natural haplotypes of FLM non-coding sequences fine-tune flowering time in ambient spring temperatures in Arabidopsis. **Elife** 6: e22114. [Subject category: Biology; Q1, IF 7.725]
30. **Manzano-Marín A, Szabó G, Simon JC, Horn M, Latorre A.** 2017. Happens in the best of subfamilies: establishment and repeated replacements of co-obligate secondary endosymbionts within Lachninae aphids. **Environ Microbiol** 19: 393-408. [Subject category: Microbiology; Q1, IF 5.395]
31. **Manzoni S, Capek P, Mooshammer M, Lindahl BD, Richter A, Santruckova H.** 2017. Optimal metabolic regulation along resource stoichiometry gradients. **Ecol Lett** 20: 1182-1191. [Subject category: Ecology; Q1, IF 9.449]
32. **Margalef O, Sardans J, Fernández-Martínez M, Molowny-Horas R, Janssens IA, Ciais P, Richter A, Obersteiner M, Asenio D, Peñuelas J.** 2017. Global patterns of phosphatase activity in natural soils. **Sci Rep** 7: 1337. [Subject category: Multidisciplinary Sciences; Q1, IF 4.259]

33. **Mooshammer M, Hofhansl F, Frank AH, Wanek W, Hämmerle I, Leitner S, Schneckner J, Wild B, Watzka M, Keiblinger KM, Zechmeister-Boltenstern S, Richter A.** 2017. Decoupling of microbial carbon, nitrogen, and phosphorus cycling in response to extreme temperature events. *Sci Adv* 3: e1602781. [No IF available yet for this journal]
34. **Mussmann M, Pjevac P, Krüger K, Dyksma S.** 2017. Genomic repertoire of the Woeseiaceae/JTB255, cosmopolitan and abundant core members of microbial communities in marine sediments. *ISME J* 5: 1276-1281. [Subject category: Microbiology; Q1, IF 9.664]
35. **Naughton LM, Romano S, O'Gara F, Dobson ADW.** 2017. Identification of secondary metabolite gene clusters in the *Pseudovibrio* genus reveals encouraging biosynthetic potential toward the production of novel bioactive compounds. *Front Microbiol* 8: 1494. [Subject category: Microbiology; Q1, IF 4.076]
36. **Oswald K, Graf JS, Littmann S, Tienken D, Brand A, Wehrli B, Albertsen M, Daims H, Wagner M, Kuypers MM, Schubert CJ, Milucka J.** 2017. *Crenothrix* are major methane consumers in stratified lakes. *ISME J* 9: 2124-2140. [Subject category: Microbiology; Q1, IF 9.664]
37. **Pereira FC, Berry D.** 2017. Microbial nutrient niches in the gut. *Environ. Microbiol* 19: 1366-1378. [Subject category: Microbiology; Q1, IF 5.395]
38. **Pjevac P, Schauburger C, Poghosyan L, Herbold CW, van Kessel MAHJ, Daebeler A, Steinberger M, Jetten MSM, Luecker S, Wagner M, Daims H.** 2017. *AmoA*-targeted polymerase chain reaction primers for the specific detection and quantification of comammox *Nitrospira* in the environment. *Front Microbiol* 8: 1508. [Subject category: Microbiology; Q1, IF 4.526]
39. **Ponnudurai R, Kleiner M, Sayavedra L, Petersen JM, Moche M, Otto A, Becher D, Takeuchi T, Satoh N, Dubilier N, Schweder T, Markert S.** 2017. Metabolic and physiological interdependencies in the *Bathymodiolus azoricus* symbiosis. *ISME J* 11: 463-477. [Subject category: Microbiology; Q1, IF 9.664]
40. **Puschenreiter M, Gruber B, Wenzel WW, Schindlegger Y, Hann S, Spangl B, Schenkeveld WDC, Kraemer SM, Oburger E.** 2017. Phytosiderophore-induced mobilization and uptake of Cd, Cu, Fe, Ni, Pb and Zn by wheat plants grown on metal-enriched soils. *Environ Exp Bot* 138: 67-76. [Subject category: Plant Sciences; Q1, IF 4.369]
41. **Riva A, Borgo F, Lassandro C, Verduci E, Morace G, Borghi E, Berry D.** 2017. Pediatric obesity is associated with an altered gut microbiota and discordant shifts in Firmicutes populations. *Environ Microbiol* 19: 95-105. [Subject category: Microbiology; Q1, IF 5.395]
42. **Sato Y, Ling EY, Turaev D, Laffy P, Weynberg KD, Rattei T, Willis BL, Bourne DG.** 2017. Unraveling the microbial processes of black band disease in corals through integrated genomics. *Sci Rep* 7: 40455. [Subject category: Multidisciplinary Sciences; Q1, IF 4.259]
43. **Sauder LA, Albertsen M, Engel K, Schwarz J, Nielsen PH, Wagner M, Neufeld JD.** 2017. Cultivation and characterization of *Candidatus Nitrosocosmicus exaquare*, an ammonia-oxidizing archaeon from a municipal wastewater treatment system. *ISME J* 5: 1142-1157. [Subject category: Microbiology; Q1, IF 9.664]
44. **Schueller K, Riva A, Pfeiffer S, Berry D, Somoza V.** 2017. Members of the oral microbiota are associated with IL-8 release by gingival epithelial cells in healthy individuals. *Front Microbiol* 8: 416. [Subject category: Microbiology; Q1, IF 4.526]
45. **Schulz F, Yutin N, Ivanova NN, Ortega DR, Lee TK, Vierheilig J, Daims H, Horn M, Wagner M, Jensen GJ, Kyrpides NC, Koonin EV, Woyke T.** 2017. Giant viruses with an expanded complement of translation system components. *Science* 6333: 82-85. [Subject category: Multidisciplinary Sciences; Q1, IF 37.205]

46. **Szczyrba A, Hofmann P, Belmann P, Koslicki D, Janssen S, Dröge J, Gregor I, Majda S, Fiedler J, Dahms E, Bremges A, Fritz A, Garrido-Oter R, Jørgensen TS, Shapiro N, Blood PD, Gurevich A, Bai Y, Turaev D, DeMaere MZ, Chikhi R, Nagarajan N, Quince C, Meyer F, Balvočiūtė M, Hansen LH, Sørensen SJ, Chia BKH, Denis B, Froula JL, Wang Z, Egan R, Don Kang D, Cook JJ, Deltel C, Beckstette M, Lemaitre C, Peterlongo P, Rizk G, Lavenier D, Wu YW, Singer SW, Jain C, Strous M, Klingenberg H, Meinicke P, Barton MD, Lingner T, Lin HH, Liao YC, Silva GGZ, Cuevas DA, Edwards RA, Saha S, Piro VC, Renard BY, Pop M, Klenk HP, Göker M, Kyrpides NC, Woyke T, Vorholt JA, Schulze-Lefert P, Rubin EM, Darling AE, Rattei T, McHardy AC.** 2017. Critical Assessment of Metagenome Interpretation-a benchmark of metagenomics software. **Nat Methods** 14: 1063-1071. [Subject category: Biochemical Research Methods; Q1, IF 25.062]
47. **Singer E, Wagner M, Woyke T.** 2017. Capturing the genetic makeup of the active microbiome *in situ*. **ISME J** 9: 1949-1963. [Subject category: Microbiology; Q1, IF 9.664]
48. **Szabó G, Schulz F, Toenshoff ER, Volland JM, Finkel OM, Belkin S, Horn M.** 2017. Convergent patterns in the evolution of mealybug symbioses involving different intrabacterial symbionts. **ISME J** 3: 715-726. [Subject category: Microbiology; Q1, IF 9.664]
49. **Thannesberger J, Hellinger HJ, Klymiuk I, Kastner MT, Rieder FJ, Schneider M, Fister S, Lion T, Kosulin K, Laengle J, Bergmann M, Rattei T, Steininger C.** 2017. Viruses comprise an extensive pool of mobile genetic elements in eukaryote cell cultures and human clinical samples. **FASEB J** 31: 1987-2000. [Subject category: Biology; Q1, IF 5.498]
50. **Tsao HF, Scheikl U, Volland JM, Köhler M, Bright M, Walochnik J, Horn M.** 2017. '*Candidatus* *Cochliophilus cryoturris*' (Coxiellaceae), a symbiont of the testate amoeba *Cochliopodium minus*. **Sci Rep** 7: 3394. [Subject category: Multidisciplinary Sciences; Q1, IF 4.259]
51. **Turner S, Meyer-Stüve S, Schippers A, Guggenberger G, Schaarschmidt F, Wild B, Richter A, Dohrmann R, Mikutta R.** 2017. Microbial utilization of mineral-associated nitrogen in soils. **Soil Biol Biochem** 104: 185-196. [Subject category: Soil Science; Q1, 4.857]
52. **Walker A, Pfitzner B, Harir M, Schaubeck M, Calasan J, Heinzmann SS, Turaev D, Rattei T, Endesfelder D, Castell WZ, Haller D, Schmid M, Hartmann A, Schmitt-Kopplin P.** 2017. Sulfonolipids as novel metabolite markers of *Alistipes* and *Odoribacter* affected by high-fat diets. **Sci Rep** 7: 11047. [Subject category: Multidisciplinary Sciences; Q1, IF 4.259]
53. **Wasmund K, Mussmann M, Loy A.** 2017. The life sulfuric: Microbial ecology of sulfur cycling in marine sediments. **Environ Microbiol Rep** 9: 323-344. [Subject category: Microbiology; Q1, IF 3.363]
54. **Weynberg KD, Laffy PW, Wood-Charlson EM, Turaev D, Rattei T, Webster NS, van Oppen MJH.** 2017. Coral-associated viral communities show high levels of diversity and host auxiliary functions. **PeerJ** 5: e4054. [Subject category: Multidisciplinary Sciences; Q2, IF 2.177]
55. **Wild B, Alaei S, Bengston P, Bodé S, Boeckx P, Schneckner J, Mayerhofer W, Rütting T.** 2017. Short-term carbon input increases microbial nitrogen demand, but not microbial nitrogen mining, in a set of boreal forest soils. **Biogeochemistry** 136: 261-278. [Subject category: Geosciences, Multidisciplinary; Q1, IF 3.428]
56. **Wukovits J, Enge AJ, Wanek W, Watzka M, Heinz P.** 2017. Increased temperature causes different carbon and nitrogen processing patterns in two common intertidal foraminifera (*Ammonia tepida* and *Haynesina germanica*). **Biogeosciences** 11: 2815-2829. [Subject category: Geosciences, Multidisciplinary; Q1, IF 3.851]
57. **Zojer M, Schuster LN, Schulz F, Pfundner A, Horn M, Rattei T.** 2017. Variant profiling of evolving prokaryotic populations. **PeerJ** 5: e2997. [Subject category: Multidisciplinary Sciences; Q2, IF 2.177]

## Commentaries and Other Publications

Subject categories and impact factors according to the Journal Citation Report (ISI) 2016.

1. **Berry D.** 2017. Hidden potential: Diet-driven changes in redox level shape the rumen microbiome. **Environ Microbiol** 19: 19-20. [Subject category: Microbiology; Q1, IF 5.965]
2. **Berry D.** 2017. The unexpected versatility of the cellulosome. **Environ Microbiol** 19: 13-14. [Subject category: Microbiology; Q1, IF 5.965]
3. **Stecher B, Clavel T, Loy A, Berry D.** 2017. Principles of Systems Biology, No. 13 - A pathogen-resistant designer microbiota. **Cell Syst** 4: 3-6. [Subject category: Biochemistry & Molecular Biology; Q1, IF 8.406]

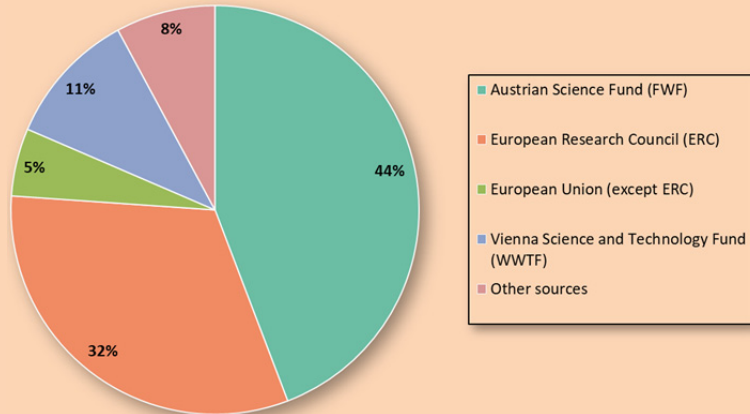
## Book Chapters

1. **Eichorst SA, Trojan D, Woebken D.** 2017. Genus *Terriglobus*. In *Bergey's Manual of Systematics of Archaea and Bacteria*. Online only. John Wiley & Sons, Chichester, England.

## Projects and Grants

In 2017, research at the Department was funded by **44 external grants with a total volume of € 17,231,986.**

The main funding sources were the **FWF** (23 grants), the **ERC** (3 grants), other programs of the **European Union** (6 grants), and the **WWTF** (2 grants).



### Projects funded by the Austrian Science Fund (FWF). Subtotal: € 7.616.311,10

1. The boundary keepers: Intestinal mucus-associated microbes. Austrian Science Fund (**FWF**). 2013-2018. **€ 447,403.95; PI: Berry, David.**
2. Eco-evolutionary processes in gut *Bacteroides*. Austrian Science Fund (**FWF**). 2015-2020. **€ 451,870.65; PI: Berry, David.**
3. Illuminating the ecology of nitrite-oxidizing bacteria in soil and aquatic ecosystems. Austrian Science Fund (**FWF**). 2013-2017. **€ 370,735.05; PI: Daims, Holger.**
4. Microdiversity of uncultured nitrite-oxidizing bacteria. Austrian Science Fund (**FWF**). 2015-2019. **€ 424,242; PI: Daims, Holger.**
5. Physiology and environmental importance of complete ammonia oxidizers (comammox). Austrian Science Fund (**FWF**). 2017-2020. **€ 390,138.53; PI: Daims, Holger.**
6. EUGENPATH - Eukaryotic genes in vacuolar pathogens and symbionts. Austrian Science Fund (**FWF**). 2014-2017. **€ 240,061.5; PI: Horn, Matthias.**
7. The cold microbial majority: Ecophysiology, biogeography, and genomics of psychrophilic sulfate-reducing microorganisms in arctic marine sediments. Austrian Science Fund (**FWF**). 2013-2018. **€ 445,756.5; PI: Loy, Alexander.**
8. Missing links in the marine sulfur cycle – identity and functions of microorganisms utilizing sulfur cycle intermediates and organic sulfur molecules in marine sediments. Austrian Science Fund (**FWF**). 2016-2019. **€ 305,514.3; PI: Wasmund, Kenneth.**
9. A functional approach to understand active non-symbiotic diazotrophs in soil. Austrian Science Fund (**FWF**). 2013-2017. **€ 448,751.1; PI: Woebken, Dagmar.**
10. Investigating the function of the ubiquitous acidobacteria in terrestrial environments. Austrian Science Fund (**FWF**). 2014-2019. **€ 435,697.5; PI: Woebken, Dagmar.**
11. Ecology of novel nitrite-oxidizers in the phylum *Chloroflexi*. Austrian Science Fund (**FWF**). 2017-2020. **€ 230,010; PI: Daebeler, Anne.**
12. ClimGrass: Grasland-Kohlenstoffdynamik im Klimawandel. Austrian Science Fund (**FWF**). 2015-2018. **€ 414,726.37; PI: Bahn, Michael. Co-PIs: Richter, Andreas; Wanek, Wolfgang.**

13. MicrON: Soil Organic Nitrogen Cycling. Austrian Science Fund (**FWF**). 2015-2018. **€ 446,321.4; PI: Wanek, Wolfgang. Co-PI: Richter, Andreas.**
14. Die Biogeochemie von Wolfram (W) im Boden-Pflanze-Kontinuum. Austrian Science Fund (**FWF**). 2014-2018. **€ 313,923.75; PI: Oburger, Eva. Host: Richter, Andreas.**
15. Viral mRNAs: evolution and structure-function relationships. Austrian Science Fund (**FWF**). 2013-2018. **€ 256,158; PI: Rattei, Thomas.**
16. Evolution and Function of the Environment Protein Sequence Universe. Austrian Science Fund (**FWF**). 2014-2019. **€ 309,960; PI: Rattei, Thomas.**
17. Bacterial Interaction with the microvasculature, a target for therapeutic intervention during septicemia (BactinfectERA). Austrian Science Fund (**FWF**). 2014-2019. **€ 200,025; PI: Rattei, Thomas.**
18. Physiological interactions of Salmonella and the intestinal microbiota – Ecological and genetic fitness determinants in colonization resistance and inflammation. Austrian Science Fund (**FWF**) (lead agency of this international D-A-CH project). 2016-2019. **€ 449,768; PI: Loy, Alexander.**
19. Post-genomic characterization of Nitrospina, a major marine nitrite oxidizer. Austrian Science Fund (**FWF**). Part of FWF Doctoral Programme **DK+** "Microorganisms in the Nitrogen Cycle". 2016-2019. **€ 207,049.5; PI: Daims, Holger.**
20. Importance of Cyanate as Substrate for Nitrifiers. Austrian Science Fund (**FWF**). Part of FWF Doctoral Programme **DK+** "Microorganisms in the Nitrogen Cycle". 2016-2019. **€ 207,049.5; PI: Wagner, Michael.**
21. Influence of carbon sources on active diazotroph communities revealed by Chip-SIP. Austrian Science Fund (**FWF**). Part of FWF Doctoral Programme **DK+** "Microorganisms in the Nitrogen Cycle". 2016-2019. **€ 207,049.5; PI: Wobken, Dagmar.**
22. Investigating factors that govern biological N<sub>2</sub> fixation in soil by CHIP-SIP. Austrian Science Fund (**FWF**). Part of FWF Doctoral Programme **DK+** "Microorganisms in the Nitrogen Cycle". 2016-2019. **€ 207,049.5; PI: Richter, Andreas.**
23. Model-based optimization of cultivation conditions for ammonia and nitrite oxidizing archaea and bacteria. Austrian Science Fund (**FWF**). Part of FWF Doctoral Programme **DK+** "Microorganisms in the Nitrogen Cycle". 2016-2019. **€ 207,049.5; PI: Rattei, Thomas.**

**Projects funded by the European Research Council (ERC). Subtotal: € 5.496.742,25**

24. ERC Advanced Grant NITRICARE – Nitrification reloaded: a single cell approach. **European Research Council**. 2012-2017. **€ 2,499,107; PI: Wagner, Michael.**
25. ERC Starting Grant DormantMicrobes: Revealing the function of dormant soil microorganisms and the cues for their awakening. **European Research Council**. 2015-2020. **€ 1,499,356.25; PI: Wobken, Dagmar.**
26. ERC Starting Grant FunKeyGut: Illuminating functional networks and keystone species in the gut. **European Research Council**. 2017-2020. **€ 1,498,279; PI: Berry, David.**

**Projects funded by the European Union (except ERC). Subtotal: € 924.655,00**

27. Marie Curie IEF Hidden Life - Host-microbe interactions involving microbial dark matter: biology and evolution of a ubiquitous group of intracellular bacteria. **European Union**. 2017. **€ 178,157; PI: Delafont, Vincent.**



28. Marie Curie IEF MUCDIFF - Competition between the enteric pathogen *Clostridium difficile* and the commensal members of the gut microbiota for mucosal sugars. **European Union**. 2015-2017. € 166,157; PI: Pereira, Fatima. Host: Berry, David.
29. Marie Curie IEF SymPathInfect - Symbiont-mediated defense of amoebae against *Legionella pneumophila*: Molecular mechanisms and pathogen ecology. **European Union**. 2015-2018. € 178,157; PI: Wentrup, Cecilia. Host: Horn, Matthias.
30. EU-Polar Net. **European Union**. 2015-2020. € 31,250; PI: Richter, Andreas.
31. Nunataryuk. **European Union**, Horizon 2020 project. 2017-2022. € 115,000; PI: Richter, Andreas.
32. Flowerpower – Establishing a new generation of horticulturists: Multidisciplinary approach for breeding innovative novelties using classical and biotechnological methods. **European Union**. 2016-2020. € 255,934; PI: Rattei, Thomas.

**Projects funded by the Vienna Science and Technology Fund (WWTF). Subtotal: € 1.835.056,25**

33. Nutrition and the intestinal microbiota-host symbiosis: A holistic stable isotope-labeling approach to decipher key microbial players and quantitatively link single cell activity to system function. Vienna Science and Technology Fund (**WWTF**). 2013-2017. € 335,700; PI: Loy, Alexander. Co-PI: Berry, David.
34. WWTF Vienna Research Group: Understanding molecular host-microbe interactions in nature: Lucinid clams and their chemosynthetic symbionts. Vienna Science and Technology Fund (**WWTF**). 2015-2023. € 1,499,356.25; PI: Petersen, Jillian.

**Projects funded by other sources. Subtotal: € 1.359.222,00**

35. CSC PhD Fellowship: Diversity and ecophysiology of sulfur-compounds-metabolizing microorganisms in the intestinal tract of human and animals. **China Scholarship Council (CSC)**. 2016-2020. PI: Ye, Huimin. Host: Loy, Alexander.
36. JPI CLIMATE: COUP-Austria – Constraining uncertainties in the permafrost-climate feedback. **bmwfw**. 2015-2017. € 151,507; PI: Richter, Andreas. Co-PI: Kaiser, Christina.
37. The Effect of Climate Change on Mountainous Soils for their Better Management and Conservation. **IAEA** (International Atomic Energy Agency). 2015-2017. € 27,900; PI: Richter, Andreas.
38. Explorative analysis of metabolome & intestinal microbiome data. **Mundipharma**. 2016-2017. € 60,215; PI: Rattei, Thomas.
39. Identifying the key players of N<sub>2</sub> fixation in biological soil crusts (BSCs). **ÖAW Doc Stipend**. Austrian Academy of Sciences (ÖAW). 2016-2018. € 112,500; PI: Nepel, Maximilian. Host: Woebken, Dagmar.
40. From bacteria to birds: inter-kingdom interactions in a marine symbiosis. **ÖAW Doc Stipend**. Austrian Academy of Sciences (ÖAW). 2017-2020. € 115,500; PI: Zauner, Sarah. Host: Petersen, Jillian.
41. Study of nitrogen fixation in symbionts of lucinid bivalves from Guadeloupe. **Region Guadeloupe**. 2016-2018. € 55,000; PI: Elisabeth, Nathalie. Host: Petersen, Jillian.
42. The transparent soil microcosm: a window into the spatial distribution and dynamics of carbon utilization and microbial interspecies interactions. **US Department of Energy** - Office of Science. 2015-2018. € 350,000; PI: Berry, David. Co-PI: Shank, Elizabeth (UNC Chapel Hill).

43. High-throughput sorting of microbial cells with specific functional traits for single cell genomics by combining labeling with heavy water, Raman microspectroscopy, microfluidics and flow cytometry. **US Department of Energy (DOE), Joint Genome Institute (Department of Energy)**. Emerging Technologies Opportunity Program (ETOP). 2013-2017. **€ 480,000; PI: Wagner, Michael. Co-PI: Stocker, Roman (ETH Zurich)**.
  44. Competition or Cooperation: contrasting effects of AM and EM fungi on soil organic matter decomposition. Austrian Agency for International Cooperation in Education and Research (OEAD). 2017-2018. **€ 6,600; PI: Kaiser, Christina**.
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## Teaching

In the winter semester 2016/2017 and the summer semester 2017, members of the Department taught in total **25.83 commissioned hours per week of lectures, 58.9 commissioned hours per week of practical courses, and 27.16 commissioned hours per week of seminars**. For several courses the actual numbers of hours per week were higher, because additional (not commissioned) parallels were offered. The courses taught belong to the **Bachelor curriculum Biology**, the **Master curriculum Molecular Microbiology, Microbial Ecology, and Immunobiology**, the **Master curriculum Ecology and Ecosystems**, the **Master curriculum Bioinformatics**, the **Master curriculum Computational Science**, and the **Master curriculum Environmental Sciences**.

**Annex 2** contains a complete list of the lectures, practical courses and seminars taught by Department members in 2017.

In 2017, **4 PhD students and 13 Master's students finished** their thesis work at the Department and graduated. **Currently, 42 PhD students and 21 Master's students** are supervised by the Department's group leaders and are conducting their thesis research at the Department.

Members of the Department had functions in **11 external PhD committees** and were reviewers and/or examiners of 2 external PhD theses.

## Completed PhD Theses

	Name	Title of thesis	Date of defense	Supervisor
1.	Eder, Thomas	Bioinformatic analysis of host-pathogen interactions in the light of second generation sequencing technologies.	18.2.2017	Rattej, Thomas
2.	Gruber-Dorninger, Christiane	New insights into the diversity, ecology and physiology of Nitrospira.	28.2.2017	Daims, Holger
3.	Wögerbauer, Markus	Essential elements in the risk assessment of antibiotic resistance marker genes.	20.11.2017	Wagner, Michael
4.	Thompson, Haydn	PAH-degrading bacteria and marine eukaryotic phytoplankton.	1.11.2017	Loy, Alexander (co-supervisor); Gutierrez, Tony (main supervisor)

## Completed Master's Theses

	Name	Title of thesis	Date of defense	Supervisor
1.	Gletthofer, Maximilian	Microbiome analysis of Ponisetta varieties.	30.9.2017	Rattei, Thomas
2.	Gorka, Stefan	Carbon and nitrogen exchange between plant roots, ectomycorrhizal fungi and soil bacteria in the mycorrhizosphere of <i>Fagus sylvatica</i> .	21.12.2017	Richter, Andreas and Kaiser, Christina
3.	Greuter, Daniel	Probase - a web portal for oligonucleotide probes and primers.	20.12.2017	Rattei, Thomas
4.	Güell-Bujons, Queralt	Ecophysiology and dynamics of nitrite oxidizers in saline-alkaline lakes.	13.12.2017	Daims, Holger
5.	Hausl, Bertram	Genome diversity and free-living lifestyle of chemoautotrophic lucinid symbionts.	22.11.2017	Petersen, Jillian
6.	Jutz, Sabrina	Estimate taxonomic composition of and diversity among virus species in viromes.	31.1.2017	Rattei, Thomas
7.	Löffler, Jessica	Molecular characterisation and community dynamics of sulphoquinovose-degrading populations in the human gut microbiota.  (Erasmus student, Westfälische Hochschule Gelsenkirchen, Germany)	28.07.2017	Loy, Alexander
8.	Moet, Linda	In vitro inquiry into the microbial ecology of inorganic and organic sulfur compound utilization under differing redox conditions in mammalian feces.  (Erasmus student, Karolinska Institute, Stockholm, Sweden)		Loy, Alexander
9.	Schauberger, Clemens	The environmental detection of comammox Nitrospira.	14.2.2017	Daims, Holger
10.	Seki, Filip David	Investigation of rice-diazotrophic associations under gnotobiotic conditions and evaluation of Gold-FISH for the detection of microorganisms on root surfaces.	22.6.2017	Wobken, Dagmar
11.	Wasner, Daniel	Tracing the fate of organic phosphorus in soil.	28.07.2017	Wanek, Wolfgang
12.	Zezula, David	Are soil microbes in a tropical forest in French Guiana phosphorus limited?	28.07.2017	Richter, Andreas
13.	Zimmermann, Elias	Comparative analysis of the infection cycle of <i>Simkania negevensis</i> in amoeba and human cells.	27.11.2017	Horn, Matthias

## Currently Ongoing PhD Theses

	<b>Name</b>	<b>Title of thesis (if already available)</b>	<b>Start month</b>	<b>Supervisor</b>
1.	Bauchinger, Franziska	Title pending.	3/2017	Berry, David
2.	Daly, Amanda	Microbe-mesofauna controls on organic nitrogen mineralization in agricultural soils.	9/2015	Richter, Andreas and Woebken, Dagmar
3.	Dietrich, Marlies	Investigating controlling factors of diazotrophy and diazotrophic communities in grassland soils by Chip-SIP investigations.	9/2016	Woebken, Dagmar
4.	Geijo, Javier Betel	Computational models of the microbial nitrogen cycling.	1/2016	Rattei, Thomas
5.	Gerner, Samuel	Computational approaches for the analysis of urban biomes.	1/2017	Rattei, Thomas
6.	Gorka, Stefan	Title pending.	12/2017	Kaiser, Christina
7.	Halter, Tamara	Genomic diversity of natural populations of environmental chlamydiae: The case of <i>Rhabdochlamydia porcellionis</i> .	9/2017	Horn, Matthias
8.	Hausmann, Bela	Ecology of sulfate-reducing microorganisms in wetlands.	4/2012	Loy, Alexander
9.	Hellinger, Hans-Jörg	Viral mRNAs: evolution and structure-function relationships.	1/2014	Rattei, Thomas
10.	Herrera, Paul	Unraveling aspects of genome evolution and adaptation in environmental chlamydiae using experimental evolution approaches.	1/2015	Horn, Matthias
11.	Hu, Yuntao	Molecular tracing of organic nitrogen decomposition and metabolism in soils.	1/2015	Wanek, Wolfgang
12.	Hyden, Patrick	Next-generation bioinformatics for genome-based diagnostics.	12/2016	Rattei, Thomas
13.	Imminger, Stefanie	Microbial dormancy and resuscitation dynamics in arid biological soil crusts.	11/2015	Woebken, Dagmar
14.	Ivanovova, Nika	Experimental evolution and ecology of polysaccharide-degrading <i>Bacteroides</i> species isolated from human gut.	9/2015	Berry, David
15.	Kitzinger, Katharina	Elucidating the role of organic nitrogen compounds for marine ammonia oxidizers.	5/2015	Wagner, Michael

16.	König, Lena	Metabolic interactions between <i>Protochlamydia amoebophila</i> and its amoeba host.	8/2009	Horn, Matthias
17.	Köstlbacher, Stephan	Unusual lifestyles and ancestral states in the Chlamydiae.	7/2015	Horn, Matthias
18.	Lucaciu, Rares	Comparative and functional genomics and microbiomes of horticulture plants.	4/2016	Rattei, Thomas
19.	Lukumbuzya, Michael	Ecophysiology of microdiverse nitrite oxidizers.	9/2015	Daims, Holger
20.	Moeller, Florian	Interactions between the tropical marine sponge <i>lanthella basta</i> and its microbial symbionts.	6/2011	Wagner, Michael
21.	Müller, Anna	Post-genomic characterization of <i>Nitrospina</i> , a major marine nitrite oxidizer.	4/2016	Daims, Holger
22.	Nepel, Maximilian	Key players of N <sub>2</sub> fixation in biological soil crusts and other terrestrial environments.	1/2015	Woebken, Dagmar
23.	Noll, Lisa	Controls of extracellular protein decomposition by soil microbes.	12/2015	Wanek, Wolfgang
24.	Osvatic, Jay	Genome evolution in microbial symbionts.	9/2017	Petersen, Jillian
25.	Overbeeke, Annelieke	Title pending.	2/2017	Berry, David
26.	Pelikan, Claus	Psychrophilic sulfate-reducing microorganisms in Arctic marine sediments.	9/2013	Loy, Alexander
27.	Prommer, Judith	Grassland Soil Carbon Dynamics under Global Change.	11/2014	Richter, Andreas
28.	Seki, Filip David	The premature gut microbiome and the influence on neonatal immunity, brain development and white matter injury.	8/2017	Berry, David
29.	Seneca Cardoso Da Silva, Joana	Unraveling microbial nitrogen utilization and turnover in soil by Chip-SIP.	5/2016	Richter, Andreas
30.	Singh, Amrinder	Array-based screening of the proteome in human disease (with AIT).	5/2017	Rattei, Thomas
31.	Strasser, Florian	Microbial cellulose degradation in forest soils.	11/2014	Woebken, Dagmar
32.	Trojan, Daniela	Elucidating the function of the ubiquitous Acidobacteria in terrestrial environments – from genome to in-situ analysis.	2/2015	Woebken, Dagmar
33.	Tsao, Allen	Amoebae as vehicles of bacteria - a pilot study.	11/2011	Horn, Matthias
34.	Tuarev, Dimitrij	Taxonomic characterization of metagenomes and metatranscriptomes.	11/2010	Rattei, Thomas



35.	Weinmaier, Thomas	Computational methods for the high-quality annotation of prokaryotic genomes.	5/2010	Rattei, Thomas
36.	Wiesinger Johanna	Transcriptomic analyses and regulation of gene expression of the thaumarchaeon <i>Nitrososphaera gargensis</i> : Growth on cyanate and biofilm formation.	1/2016	Wagner, Michael
37.	Ye, Huimin	Diversity and ecophysiology of sulfur-compounds-metabolizing microorganisms in the intestinal tract of human and animals.	11/2016	Loy, Alexander
38.	Zauner, Sarah	Interkingdom interactions in marine chemosynthetic symbioses.	9/2017	Petersen, Jillian
39.	Zhang, Shasha	Controls of microbial nitrogen use efficiency in soils.	1/2016	Wanek, Wolfgang
40.	Zheng, Qing	Microbial community structure and carbon-use efficiency in soils.	8/2015	Richter Andreas and Wanek, Wolfgang
41.	Zioutis, Christos	Longitudinal analysis of the genetic diversification of the <i>Bacteroides</i> species in the human gut microbiome.	10/2015	Berry, David
42.	Zojer, Markus	Computational methods for the analyses of experimental evolution of symbiotic systems.	8/2012	Rattei, Thomas

### Currently Ongoing Master's Theses

	Name	Start month	Supervisor
1.	Arthofer, Patrick	6/2017	Horn, Matthias
2.	Binder, Christian	3/2016	Rattei, Thomas
3.	Böckle, Theresa	10/2016	Wanek, Wolfgang
4.	Bogdanovic, Ivana	12/2017	Kaiser, Christina
5.	Flieder, Mathias	9/2017	Loy, Alexander
6.	Grossschmidt, Nora	8/2016	Petersen, Jillian
7.	Gündler, Philipp	3/2016	Richter, Andreas
8.	Hinger, Isabella	6/2016	Loy, Alexander
9.	Kempinger, Thomas	7/2017	Horn, Matthias
10.	Klocker, Andrea	4/2016	Wobken, Dagmar
11.	Lüftinger, Lukas	12/2017	Rattei, Thomas
12.	Maczalova, Martina	10/2016	Richter, Andreas

13.	Martin, Victoria	2/2016	Richter, Andreas
14.	Mayerhofer, Werner	7/2015	Kaiser, Christina
15.	Pfeifer, Josephine	12/2017	Woebken, Dagmar
16.	Pinheiro Imai, Bruna Yuri	10/2016	Kaiser, Christina
17.	Schwarzahns, Angelika	11/2017	Horn, Matthias
18.	Simon, Eva	10/ 2015	Richter, Andreas
19.	Simonis, Julius	5/2016	Berry, David
20.	Svavilnaya, Anastasia	3/2017	Petersen, Jillian
21.	Wiesenbauer, Julia	11/2015	Richter, Andreas

### Functions in PhD Committees and as External PhD Thesis Reviewers / Examiners

Name	PhD Committee / PhD Thesis Opponent
1. Berry, David	Member of the PhD thesis committee of Rasmus Hansen Kirkegaard (Aalborg University, Denmark)
2. Berry, David	Member of the PhD thesis committee of Tommi Vatanen (Aalto University, Finland)
3. Daims, Holger	External opponent, PhD defense of Alejandro Palomo, Technical University of Denmark, Copenhagen (29.6.2017)
4. Daims, Holger	Member of the PhD thesis committee of Katharina Kitzinger (University of Bremen, Germany, and University of Vienna)
5. Daims, Holger	Member of the PhD thesis committee of Franziska Klotz (University of Constance, Germany)
6. Daims, Holger	Member of the PhD thesis committee of Niek Stortenbeker (University of Bremen, Germany)
7. Loy, Alexander	PhD thesis reviewer/examiner of Cameron M. Callbeck, University of Bremen, Germany (18.9.2017)
8. Loy, Alexander	PhD committee member of Benjamin Zwirzitz, University of Veterinary Medicine Vienna, Austria
9. Loy, Alexander	PhD committee member of Elke Korb, Medical University of Vienna, Austria
10. Rattei, Thomas	PhD committee member of Sabine Felkl, University of Veterinary Medicine Vienna, Austria
11. Rattei, Thomas	PhD committee member of Mariam Farman, University of Vienna
12. Wanek, Wolfgang	External member of PhD committee of Petr Capek, Univ. South Bohemia in Ceske Budejovice, Czech Republic
13. Woebken, Dagmar	Member of the PhD thesis committee of Magdalena Mayr (ETH and Swiss Federal Institute of Aquatic Science and Technology EAWAG, Switzerland)

## Public Outreach

Members of the Department presented **30 public talks, interviews, TV and radio features, and articles in the general media** and contributed with lectures and seminars to the **KinderUniWien** (children's university).

**Key research publications** by Department members were **covered by 33 articles in major Austrian and international printed or online media**, and were featured by numerous scientific or general internet news services (see the following tables and **Annex 3** for a complete list).

## General Public Outreach

Presenter(s)	Title of Presentation	Event/Medium	Date
1. Berry, David	Roundtable discussion about human microbiome.	University of Vienna ERC Talks and Drinks roundtable session	13.3.2017
2. Collingro, Astrid; Horn, Matthias	"Motorisierte" Chlamydien im Meer.	Videopodcast <i>Uni:View</i>	3.7.2017
3. Daims, Holger	Gesundheit aus dem Labor: Warum die Bakterien in unserem Darm so wichtig sind.	Opening Family Lecture of the KinderuniWien 2017	9.7.2017
4. Horn, Matthias	Wie Bakterien zu Krankheitserregern wurden.	KinderuniWien Lecture	19.7.2017
5. Loy, Alexander	Bewusst Gesund: Probiotika - was sie können, wie sie wirken.	Report on Austrian TV <i>ORF 2</i>	9.9.2017
6. Loy, Alexander	Was uns gesund hält: Das Mikrobiom.	Cover story in the Austrian weekly news magazine <i>Profil</i> , Vol. 19, page 68-77	8.5.2017
7. Loy, Alexander	Rudi! Radio für Kinder: Ups, ein Pups oder: Was ist Flatulenz?	<i>Ö1 Radio</i> interview for kids	13.9.2017
8. Loy, Alexander	Microbe PubQuiz.	Club Berlin, Vienna. Organized by OpenScience	23.3.2017
9. Loy, Alexander	Das Mikrobiom des Menschen.	Unterstützung und Beratung von Open Science bei der Erstellung von Unterrichtsmaterialien für Schulkinder (Sekundarstufe II)	22.12.2017

10.	Loy, Alexander; Horn, Matthias	Es lebt in uns! Der Mensch, sein Mikrobiom - und Meer.	One hour radio feature in the series "Punkt eins", <i>Ö1 Radio</i>	12.9.2017
11.	Petersen, Jillian	Researchers parse ecosystems fueled by chemistry, not light.	Interview in <i>Science</i> 357:1223-1224	22.9.2017
12.	Schmidt, Hannes; Pjevac, Petra; Daebeler, Anne	Warum sind Bakterien für uns so wichtig?	KinderuniWien Seminar	19.7.2017
13.	Vincent Delafont, Stephanie A. Eichorst, Fátima Pereira, Cecilia Wentrup	A journey into microbial life on earth.	KinderuniWien Seminar	13.7.2017
14.	Wagner, Michael	Roundtable discussion about nitrogen cycling and microbes.	University of Vienna ERC Talks and Drinks roundtable session	13.3.2017
15.	Wagner, Michael	ORF Science Talk about the diversity of microorganisms and their roles for human and environmental health.	TV Interview	15.3.2017
16.	Wagner, Michael	Gesundheit aus dem Labor – was ist möglich?	Introductory Article in <i>Der Standard</i>	7.3.2017
17.	Wagner, Michael	Wie uns Bakterien gesünder machen.	User Article in <i>Der Standard</i>	14.3.2017
18.	Wagner, Michael	Bakterien als unsichtbare Freunde und tödliche Feinde.	Video answers to <i>Der Standard</i> reader questions	23.3.2017
19.	Wagner, Michael	Wenn wir so weiter machen wie bisher, wird sich unsere Lebenserwartung rapide verkürzen.	Interview in <i>Uni:View</i>	1.3.2017
20.	Wagner, Michael	Potenzmittel sind lukrativer.	Interview in <i>Tiroler Tageszeitung</i>	16.3.2017
21.	Wagner, Michael	Wenn Antibiotika nicht mehr wirken.	One hour radio feature in the series "Punkt eins", <i>Ö1 Radio</i>	8.5.2017
22.	Wagner, Michael	Droht ein Leben ohne wirksame Antibiotika?	Article in <i>Die Kronenzeitung</i>	29.4.2017

23.	Wagner, Michael	Gesundheit aus dem Labor – Was ist möglich?	Panel discussion (incl. video broadcast) in the University of Vienna, organized by <i>Uni:View</i>	14.6.2017
24.	Wagner, Michael	Geheimnis Gesundheit – Laufen im Prater: Die Podiumsdiskussion zur Semesterfrage.	Article in <i>Uni:View</i> about the panel discussion	14.6.2017
25.	Wagner, Michael	Geheimnis Gesundheit: Drei Achterl in Ehren und heilende Fäkalien.	Article in <i>Der Standard</i> about the panel discussion	21.6.2017
26.	Wagner, Michael	Weltweit zitiert.	Press release by the Austrian Academy of Sciences on the Highly Cited Researchers from Austrian institutions	20.11.2017
27.	Wagner, Michael	Die am öftesten zitierten Wissenschaftler aus Österreich.	Article in <i>Der Standard</i> about the the Highly Cited Researchers from Austrian institutions	29.11.2017
28.	Wagner, Michael	Interview zum Thema Prävention und Gesundheit.	<i>Ö1 Radiokolleg</i>	3.10.2017
29.	Wentrup, Cecilia	Mikrobielle Symbiosen - Amöben und die Entstehung bakterieller Krankheitserreger.	Posterstand European Researchers' Night be-SCIENCED - Forschung hautnah erleben!	29.9.2017
30.	Wobken, Dagmar	Roundtable discussion about the importance of microbes in soil.	University of Vienna ERC Talks and Drinks roundtable session	13.3.2017

## Public Outreach Linked to Research Publications

Please refer to **Annex 3** for additional media coverage by internet news services.

Title of Presentation	Medium	Date
Media coverage of Schulz et al. (2017) "Giant viruses with an expanded complement of translation system components". <i>Science</i> 356: 82-85.		
1. Bakterien gesucht, Riesenviren gefunden.	Press release (University of Vienna)	6.4.2017
2. Giant viruses found in Austrian sewage fuel debate over potential fourth domain of life.	Science News	7.4.2017
3. Giant virus discovery sparks debate over tree of life.	Nature News	6.4.2017
4. Forscher entdecken vier neue Riesenviren.	Der Spiegel Online	7.4.2017

5. Des nouveaux venus chez les virus géants.	Le Monde	11.4.2017
6. Giant viruses may just be small viruses that stole hosts' genes.	New Scientist	6.4.2017
7. Novel group of giant viruses discovered.	Phys.Org	6.4.2017
8. „Klosneuviren“ sind auch nur Viren.	Science.ORF.at	6.4.2017
9. New giant virus found in sewage refutes 'fourth domain of life' theory.	International Business Times	6.4.2017
10. Die rätselhaften Riesenviren von Klosterneuburg.	derStandard.at	7.4.2017
11. Mysteriöser Fund: Riesenviren in Klosterneuburg.	Kurier.at	7.4.2017
12. Riesenviren in Kläranlage lassen rätseln.	Kleine Zeitung	7.4.2017
13. Wiener Forscher finden unbekanntes Riesen-Virus.	Heute	7.4.2017

Media coverage of Kits et al. (2017) "Kinetic analysis of a complete nitrifier reveals an oligotrophic lifestyle". *Nature* 549: 269-272.

14. "Comammox"-Bakterien: Langsam, aber super-effizient.	Press release (University of Vienna)	23.8.2017
15. Microbiology: A fight for scraps of ammonia.	Nature News & Views	13.9.2017
16. „Comammox“-Bakterien: Langsam, aber effizient.	Science.ORF.at	23.8.2017
17. Research identifies new microbe with potential to help rebalance Earth's nitrogen cycle.	Phys.Org	23.8.2017
18. Forschung aktuell: Kandidaten für Kläranlagen? Comammox-Bakterien erledigen Nitrifikation effizient.	Deutschlandfunk (Radio interview with Michael Wagner)	25.8.2017
19. Bakterien wandeln Ammonium direkt um.	Die Presse (printed edition, p. 30)	26.8.2017
20. Bakterien entschärfen Probleme mit Dünger	Salzburger Nachrichten (printed edition, p. 25).	2.9.2017

Media coverage of Füssel et al. (2017) "Adaptability as the key to success for the ubiquitous marine nitrite oxidizer *Nitrococcus*". *Science Advances* 3: e1700807.

21. Überraschend weitverbreitete Meeresbakterien könnten Erde erwärmen.	APA Natur & Technik	28.12.2017
22. Meeresbakterium als überraschender Klimakiller entlarvt.	derStandard.at	29.12.2017

Media coverage of Mooshammer et al. (2017) "Decoupling of microbial carbon, nitrogen, and phosphorus cycling in response to extreme temperature events". *Science Advances* 3: e1602781.

23. Mikroben kommen mit Klimawandel nicht klar.	Press release (University of Vienna)	04.05.2017
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24. Wetterextreme stören Nährstoffkreisläufe von Mikroben nachhaltig.	derStandard.at	05.05.2017
25. Climate extremes stress ecosystems.	Science (This week in Science)	05.05.2017
Media coverage of Collingro et al. (2017) "Unexpected genomic features in widespread intracellular bacteria: evidence for motility of marine chlamydiae". <i>ISME J.</i> 10: 2334-2344.		
26. Motorisierte Chlamydien im Meer.	Press release (University of Vienna)	03.07.2017
27. "Motorisierte" Chlamydien im Meer entdeckt.	derStandard.at	05.07.2017
28. Chlamydien können wohl doch schwimmen.	Die Presse (printed edition)	08.07.2017
29. Why Be Intracellular and Be Motile?	ASM Blogs Small Things Considered	16.10.2017
Media coverage of Böck et al. (2017) "In situ architecture, function, and evolution of a contractile injection system". <i>Science</i> 6352: 713-717.		
30. Mit Dolchstößen gegen Amöben.	Press release (University of Vienna)	17.08.2017
31. Bakteriell Waffensystem zum Kampf gegen Amöben entdeckt.	derStandard.at	18.08.2017
32. Bakterien-Art wehrt sich mit Dolchen gegen Amöben.	krone.at	19.08.2017
33. Bakterien wehren sich mit eigenen Waffen.	Die Presse (printed edition)	19.08.2017

## Further Activities of the Department's Staff

### Awards, Promotions and Other Honors

Members of the Department received in 2017 in total **11 awards, highly competitive stipends, and other honors**. In addition, two Department members (Holger Daims and Alexander Loy) were **promoted to Full Professors** and one member (David Berry) received his **Habilitation in Microbiology**.

Name	Description of Award / Promotion
1. Berry, David	City of Vienna Promotion Award (Förderungspreis der Stadt Wien) in the category Natural Sciences
2. Berry, David	Habilitation (venia docendi) in Microbiology
3. Daebeler, Anne	Hertha Firnberg Stipend of the Austrian Science Fund (FWF)
4. Daims, Holger	Promotion to Full Professor (§99.4)
5. Kaiser, Christina	Guest Researcher at the International Institute for Applied System Analysis (IIASA)

6.	Koch, Hanna	Doc Award of the University of Vienna and the City of Vienna
7.	Loy, Alexander	Promotion to Full Professor (§99.4)
8.	Richter, Andreas	Guest Researcher at the International Institute for Applied System Analysis (IIASA), Ecosystem Services and Management Programme
9.	Wagner, Michael	Jim Tiedje Award of the International Society for Microbial Ecology (ISME); the lifetime achievement award of the society
10.	Wagner, Michael	Elected as member of the European Molecular Biology Organisation (EMBO)
11.	Wagner, Michael	Highly Cited Researcher on the Clarivate (formerly Thomson Reuters) List of Researchers
12.	Wagner, Michael	Guest professor at the Aalborg University Denmark
13.	Woebken, Dagmar	International Board of Ambassadors of ISME
14.	Zauner, Sarah	DOC Fellowship of the Austrian Academy of Sciences

### Invited Oral Presentations

In 2017, members of the Department presented their research in **63 invited oral presentations** at national and international conferences, workshops, and institutional seminars.

Presenter	Details of Presentation (Title, Event/Place, Date)
1. Berry, David	Long term consumption of anthocyanin-rich fruit juice: Impact on antioxidative markers and gut microbiota. 11 <sup>th</sup> World Congress on Polyphenols, Vienna, Austria. 20.-21.6.2017.
2. Berry, David	Insights into gut microbiota function using single-cell isotope probing. American Society for Microbiology (ASM) Microbe 2017, New Orleans, USA. 1.-5.6.2017.
3. Berry, David	Functional analysis of the gut microbiota using single-cell isotope probing. Congress on Gastrointestinal Function, Chicago, USA. 10.-12.4.2017.
4. Berry, David	Unraveling nutrient flows in the gut microbiota (cancelled due to illness). 1 <sup>st</sup> Austrian Microbiome Initiative (AMICI) Symposium, Vienna, Austria. 23.2.2017.
5. Berry, David	Living on the edge: Exploring the activity of mucus-associated gut microbiota. Karolinska Institute, Stockholm, Sweden. 15.2.2017.
6. Berry, David	Insights into gut microbiota function using single-cell approaches. 3 <sup>rd</sup> Scientific Workshop of the COST action POSITIVE, Thessaloniki, Greece. 21.-22.09.2017.
7. Berry, David	Insights into gut microbiota function using single-cell isotope probing. Chung-Ang University, Anseong, Korea. 1.11.2017.
8. Berry, David	Insights into gut microbiota function using single-cell isotope probing. Korean Federation of Microbiology Societies, Seoul, Korea. 2.-3.11.2017.
9. Berry, David	An Introduction to Raman Microspectroscopy. Finnish-Austrian Webinar in Microbial Biogeochemistry, Vienna, Austria. 18.10.2017.



10. Berry, David                      Studying microbial communities using Raman microspectroscopy. WIMEK-Higrade course "Stable isotope applications in microbiology and environmental studies", Wageningen, Netherlands. 13.12.2017.
11. Berry, David                      New single cell tools for functional analyses of microbes in their ecosystems. Aalborg University, Denmark. 27.2.2017.
12. Daims, Holger                     Sleep, stress and the Black Queen: microbial hidden activities and cooperation. Fifth How Dead is Dead? Conference, Vienna, Austria. 6.-8.9.2017.
13. Daims, Holger and Pjevac, Petra                     Nitrite-oxidizing bacteria and comammox: the Big Unknowns of the nitrogen cycle Finnish-Austrian Webinar in Microbial Biogeochemistry, Vienna, Austria. 4.10.2017.
14. Horn, Matthias                    Intricate affairs - Bacterial symbionts of amoebae. International Conference in Intracellular Niches of Pathogens, 4.4.2017.
15. Horn, Matthias                    Chlamydiae in the environment - changing our perspective on the C in the PVC superphylum. Conference "Planctomycetes, Verrucomicrobia, Chlamydiae: New model organisms in the omics era". 11.5.2017.
16. Horn, Matthias                    Bacterial symbionts of amoebae – Molecular mechanisms and evolution of the intracellular life style. IHU Méditerranée Infection - Aix-Marseille Université, France. 22.9.2017.
17. Kaiser, Christina                 Can self-organisation among microbial decomposer communities affect biogeochemical cycles in soil? Seminar, University of Nottingham (Host: Prof.Dr. Karl Ritz), Nottingham, UK. 7.3.2017.
18. Kaiser, Christina                 Reciprocal trade of Carbon and Nitrogen at the root-fungus interface in ectomycorrhizal beech plants. European Geophysical Union (EGU) Annual meeting 2017, Vienna Austria. 24.4.2017.
19. Kaiser, Christina                 Linking microbial physiology and biogeochemical dynamics through individual-based modelling. Invited 'Ignite' Talk, Ecological Society of America (ESA) Annual Meeting 2017, Portland, Oregon, USA. 10.8.2017.
20. Kaiser, Christina                 Using NanoSIMS and stable isotope tracing to explore Carbon and Nitrogen exchange in the tripartite symbiosis of beech, ectomycorrhizal fungi and soil bacteria. Biodiversity Kolloquium, University of Göttingen, Germany (Hosts: Prof. Dr. Andrea Polle and Dr. Rodica Pena). 13.11.2017.
21. Kaiser, Christina                 Reciprocal trade of Carbon and Nitrogen at the root-fungus interface in ectomycorrhizal beech plants. Bodenkunde Kolloquium University of Hohenheim, Stuttgart, Germany (Host: Prof. Dr. Ellen Kandeler). 11.12.2017.
22. Kits, Dimitri                      Complete nitrification by comammox: news & views. Finnish-Austrian Webinar in Microbial Biogeochemistry, Vienna, Austria. 4.10.2017.
23. Loy, Alexander                    Stable isotope probing of complex microbial communities: Studying intestinal microbes after their last 'heavy' supper. Video conference presentation for Bill & Melinda Gates Foundation, Seattle, USA. 20.2.2017.
24. Loy, Alexander                    Functional wetland microbiomics reveals unexpected metabolic versatility and expanded phylum-diversity of sulfur microorganisms. American Society of Microbiology (ASM) Microbe 2017, New Orleans, USA. 1.-5.6.2017.
25. Loy, Alexander                    Sulfate reducers – how great is the diversity? Marine Geomicrobiology Workshop, Sandbjerg, Denmark. 28.8-1.9.2017.

26. Loy, Alexander      Revealing physiological host-microbiome interactions by in vivo stable isotope probing: From complex intestinal communities to beneficial designer microbiota. Annual Microbiome Summit: Translating into Diagnostics & BioTherapeutics, Vienna, Austria. 21.-22.9.2017.
27. Loy, Alexander      Revealing the eco-metabolism of intestinal microorganisms by in vivo stable isotope probing. AustroMetabolism 2017 Workshop, Vienna, Austria. 28.9.2017.
28. Marx, Harald      The Peptidome: A treasure trove of peptide drugs. 11<sup>th</sup> Bioinformatic Round Table Discussion. 10.11.2017.
29. Petersen, Jillian      Chemosynthetic symbioses in marine bivalves: Getting to the bottom of microbe-host relationships. Society for Integrative and Comparative Biology, New Orleans, USA. 6.1.2017.
30. Petersen, Jillian      Host-microbe interactions in the wild: Omics-driven insights from marine bivalve symbioses. German Association for General and Applied Microbiology General Meeting, Würzburg, Germany. 6.3.2017.
31. Petersen, Jillian      Environmental microbiology through a symbiotic lens. Coastal Biogeochemistry and Symbiosis Workshop, Elba, Italy. 19.5.2017.
32. Petersen, Jillian      A New Understanding of the Roles and Functions of Chemosynthetic Symbionts. 6<sup>th</sup> International Symposium on Chemosynthesis-Based Ecosystems, Woods Hole, USA. 29.8.2017.
33. Petersen, Jillian      How animals gain new functions by cooperating with microbes. Symposium for Aquatic Microbial Ecology, Zagreb, Croatia. 7.9.2017.
34. Petersen, Jillian      Surviving and thriving in chemosynthetic symbiosis: From deep-sea hot springs to shallow-water seagrass beds. International CRC Workshop 'Survival Artists', Marburg Germany. 9.10.2017.
35. Petersen, Jillian      Host-microbe interactions in marine chemosynthetic symbioses. 3<sup>rd</sup> Institute of Oceanography, Xiamen, China. 14.11.2017.
36. Petersen, Jillian      Marine symbiosis research -on the 'heels' of giants. Symposium "25<sup>th</sup> Anniversary of the Max Planck Institute for Marine Microbiology", Bremen, Germany. 14.9.2017.
37. Rattei, Thomas      How many bioinformaticians does it take to make a product. ESIBP-Conference: European Summit of Industrial Biotechnology, Graz Austria. 16.11.2017.
38. Rattei, Thomas      CUBE - Division of Computational Systems Biology. Boehringer-Ingelheim Austria – Tagung. 10.11.2017.
39. Rattei, Thomas      Viral Protein Families. STRING Developer Meeting, Kopenhagen, Denmark. 4.9.2017.
40. Rattei, Thomas      Deciphering the Microbiome. Precision Medicine Meeting, Vienna, Austria. 28.7.2017.
41. Rattei, Thomas      CUBE - Division of Computational Systems Biology. technopol-Tulln, Austria. 26.6.2017.
42. Rattei, Thomas      Microbiomes in High Definition. AMICI-Austrian Microbiome Initiative. 23.3.2017.
43. Rattei, Thomas      Large-scale prediction of microbial roles and traits. ASM-Meeting, New Orleans, USA. 1.-5.6.2017.
44. Rattei, Thomas      Recent developments in bioinformatics in Austria and EU. Biocomputing Strategy Meeting, Vienna, Austria. 23.5.2017.
45. Rattei, Thomas      Viral Protein Families. 19<sup>th</sup> Genomic Standards Consortium Meeting (GSC19), Brisbane, Australia. 13.-20.5.2017.

46. Rattei, Thomas Challenges and recent approaches in viral metagenomics. CAMI+M3-Workshop, Maryland, USA. 13.-20.5.2017.
47. Rattei, Thomas Next Generation Bioinformatics for Genome-based Diagnostics. Deutsche Gesellschaft f.klinische Chemie u.Laboratoriumsmedizin. 7.1.2017.
48. Richter, Andreas Plant - microbe interactions under Global Change: the microbial perspective. European Geophysical Union General Assembly, Vienna, Austria. 27.4.2017.
49. Richter, Andreas Water, energy and food nexus: Nuclear science for sustainable development. Interactive Debate, European Development Days (EDD), Brussels, Belgium. 16.11.2017.
50. Richter, Andreas Soil carbon and nutrient cycling – the microbial perspective. IsoCycles 2017 Conference, Monte Verita, Switzerland. 16.10.2017.
51. Wagner, Michael It's the singer not the song: How the comammox discovery changes our perception of nitrification. Aalborg University, Denmark. 14.8.2017.
52. Wagner, Michael A new perspective on microbes formerly known as ammonia- and nitrite-oxidizers. International Workshop on Marine Geomicrobiology 2017, Sanbjerg Manor, Denmark. 29.8.2017.
53. Wagner, Michael Functional analyses and targeted single cell genomics of microbes by Raman microspectroscopy. Workshop on FTIR Spectroscopy in Microbiological and Medical Diagnostics, Robert Koch-Institute, Berlin, Germany. 20.10.2017.
54. Wagner, Michael Functional microbiome analysis with single cell resolution. CeMMinar, Research Center for Molecular Medicine of the Austrian Academy of Sciences (CeMM), Vienna, Austria. 23.10.2017.
55. Wagner, Michael Unexpected features of complete nitrifiers (Comammox). University of East Anglia (UEA), School of Environmental Sciences, Norwich. UK. 26.10.2017.
56. Wagner, Michael Unexpected functional traits of ammonia-oxidizing Thaumarchaea. Conference GdR Archaea : from environmental biodiversity to fundamental cellular processes, Villeurbanne, France. 13.12.2017.
57. Wagner, Michael Die Welt in unserem Inneren: Die geheime Macht des Mikrobioms. Christmas Lecture; Department of Laboratory Medicine, Medical University of Vienna, Austria. 6.12.2017.
58. Wagner, Michael Where sequencing ends and (single cell) physiology begins. Aalborg University, Villum Foundation Celebration Lecture, Denmark. 27.11.2017.
59. Wanek, Wolfgang Nitrogen cycling in terrestrial environments – microbial involvement and controls. Institute for Water Quality and Resource Management, Technical University of Vienna. 12.6.2017.
60. Woebken, Dagmar Combining stable isotopes, molecular and single-cell methods to elucidate the function of microorganisms in photosynthetic mats. Max Planck Institute for Chemistry, Mainz, Germany. 15.2.2017.
61. Woebken, Dagmar Applying stable isotope labeling experiments, massive parallel sequencing and single-cell analysis to elucidate the function of microorganisms in soil. Leibniz Institute DSMZ-German Collection of Microorganisms and Cell Cultures, Braunschweig, Germany. 27.4.2017.
62. Woebken, Dagmar Unable to attend. 7<sup>th</sup> European Conference on Prokaryotic and Fungal Genomics (ProkaGENOMICS 2017), Göttingen, Germany. 19.-22.09.2017.
63. Woebken, Dagmar Unable to attend. Symposium “25<sup>th</sup> Anniversary of the Max Planck Institute for Marine Microbiology”, Bremen, Germany. 14.9.2017.

## Editorial Functions for Peer-Reviewed Journals and Books

Name	Editorial Function
1. Berry, David	Editor for Environmental Microbiology (IF 5.395)
2. Berry, David	Specialty chief editor for Frontiers in Microbiology section Microbial Symbioses (IF 4.076)
3. Berry, David	Associate editor for Microbiome
4. Daims, Holger	Editorial board member of The ISME Journal (IF 9.664)
5. Daims, Holger	Editorial board member of Environmental Microbiology (IF 5.395) and Environmental Microbiology Reports (3.363)
6. Daims, Holger	Editorial board member of Applied and Environmental Microbiology (IF 3.807)
7. Daims, Holger	Editorial board member of PeerJ (IF 2.177)
8. Horn, Matthias	Editorial Board member Scientific Reports (IF 5.578)
9. Horn, Matthias	Editorial Board member Pathogens and Disease (IF 2.554)
10. Horn, Matthias	Editorial Board member Environmental Microbiology (IF 5.395) and Environmental Microbiology Reports (3.363)
11. Kaiser, Christina	Editorial Board Member of Soil Biology and Biochemistry (IF 4.8)
12. Loy, Alexander	Editorial board member of Frontiers in Microbiology (IF 4.076)
13. Loy, Alexander	Editorial board member of Environmental Microbiology (IF 5.395) and Environmental Microbiology Reports (3.363)
14. Loy, Alexander	Editorial board member of Applied and Environmental Microbiology (IF 3.807)
15. Loy, Alexander	Guest Associate Editor of Frontiers in Microbiology (IF 4.076) Research Topic: Microbial Sulfur Metabolism - From Symbiosis to Global Nutrient Cycling
16. Petersen, Jillian	Editor for the Biological Bulletin
17. Petersen, Jillian	Editor for mSystems
18. Petersen, Jillian	Guest Associate Editor of Frontiers in Microbiology (IF 4.076) Research Topic: Microbial Sulfur Metabolism - From Symbiosis to Global Nutrient Cycling
19. Rattei, Thomas	Editor for PeerJ (IF 2.2)
20. Richter, Andreas	Associate Editor for Biogeosciences (IF 3.851)
21. Wagner, Michael	Senior Editor for The ISME Journal (IF 9.664)
22. Wagner, Michael	Member of the Faculty of 1000 (Environmental Microbiology)
23. Wanek, Wolfgang	Editorial Board member Soil Biology and Biochemistry (Elsevier) and Soil Processes (MDPI)
24. Wobken, Dagmar	Editorial Board Member of Frontiers - Terrestrial Microbiology (IF 4.076)

## Organization of Conferences and Workshops

In 2017, members of the Department **organized and co-organized 12 national and international conferences and workshops**. These events included the ASM Microbe 2017 Meeting (>10,000 participants), the first symposium of the Austrian Microbiome Initiative (AMICI), and ICoN5 (the leading international conference on nitrification and related processes).

Name	Meeting / Conference / Workshop Organized
1. Daims, Holger	Conference co-organizer and co-chair (together with Michael Wagner and Christa Schleper) of the Fifth International Conference on Nitrification and Related Processes, Vienna, Austria (23.-27.7.2017)
2. Daims, Holger	Scientific Committee member, Fifth How Dead is Dead? Conference, Vienna, Austria (6.-8.9.2017)
3. Daims, Holger	Co-organizer and lecturer, International FISH Course, Vienna, Austria (25.-29.9.2017)
4. Kaiser, Christina	Convener of the session 'Integrating Soil Systems Ecology into biogeochemical models' at the European Geosciences Union (EGU) General Assembly 2017, Vienna, Austria (23-28.4.2017)
5. Kaiser, Christina	Convener of the session 'Mycorrhizal microbiomes' at the 9th International Conference on Mycorrhiza, Prague, Czech Republic, 30.7-4.8.2017
6. Loy, Alexander	Co-organizer and convener of the sulfur-cycling symposium at the American Society of Microbiology (ASM) Microbe 2017, New Orleans, USA, 1-5.06.2017
7. Loy, Alexander	Main organizer and co-chair (together with Christoph Steininger and Patrizia Kump) of the 1st Symposium of the Austrian Microbiome Initiative, Vienna, Austria, 23.02.2017
8. Loy, Alexander	Co-organizer and lecturer, International FISH Course, Vienna, Austria (25.-29.9.2017)
9. Rattei, Thomas	Meeting organizer of the "Precision Medicine Meeting", Vienna Austria (27.-29.07.2017)
10. Rattei, Thomas	Organizer of "FLOWERPOWER - Bioinformatics Summer School", Vienna, Austria (17.-21.7.2017)
11. Richter, Andreas	Meeting co-organizer (together with Wolfgang Wanek) of the 15th Stable Isotope Network Austria Meeting (SINA 2017), Vienna, Austria (24.-25.11.2017)
12. Richter, Andreas	Meeting organizer of the ForHot Workshop (Joint Ecosystem Assessment on the Effects of Natural Soil Warming on Subarctic Grasslands and Forests), Vienna, Austria (13.-15.03.2017)
13. Wagner, Michael	Conference co-organizer and co-chair (together with Holger Daims and Christa Schleper) of the Fifth International Conference on Nitrification and Related Processes, Vienna, Austria (23.-27.7.2017)

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| 14. | Wagner, Michael | Member of the Program and Steering Committees of the Microbe 2017 Meeting of the American Society for Microbiology (ASM) (>10,000 participants)       |
| 15. | Wanek, Wolfgang | Meeting co-organizer (together with Andreas Richter) of the 15th Stable Isotope Network Austria Meeting (SINA 2017), Vienna, Austria (24.-25.11.2017) |
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### Services for the University of Vienna

Name	Service for the University of Vienna
1. Daims, Holger	Search committee member for the tenure track position "Microbial Ecology JC 7178"
2. Horn, Matthias	Co-chair Research Focus Symbiosis, Faculty of Life Sciences
3. Horn, Matthias	Member of the planning group for a new faculty building (Neubau Biologiezentrum Schlachthausgasse, St. Marx)
4. Horn, Matthias	Member of the scholarship committee ("Stipendienkommission")
5. Horn, Matthias	Habilitation committee David Berry
6. Horn, Matthias	Evaluation panel member § 99.4 Appointment procedure
7. Horn, Matthias	PhD thesis examiner Nika Pende
8. Loy, Alexander	Search committee member for the tenure track position "Microbial Ecology JC 7178"
9. Loy, Alexander	Deputy member of the Steering Committee of the Environmental Sciences Research Network
10. Petersen, Jillian	Habilitation committee David Berry
11. Richter, Andreas	Appointment Committee for the Professorship in Limnology
12. Richter, Andreas	Co-Speaker of Research Focus "Global Change Biology", Faculty of Life Sciences
13. Richter, Andreas	Member of the Steering Committee of the Environmental Sciences Research Network
14. Richter, Andreas	Founding member of the Research Platform "Responsible Research and Innovation in Academic Practice (RRI)"
15. Wagner, Michael	Member of the Senate
16. Wagner, Michael	Chair (together with Gerhard Hendl) of the Faculty Research Focus "Microbial Ecology and Ecosystems"
17. Wagner, Michael	Head of the Research Network "Chemistry meets Microbiology"
18. Wagner, Michael	Head of the Large Instrument Facility for Advanced Isotope Research
19. Wagner, Michael	Deputy Chairman of the Austrian Association of University Professors (UPV)
20. Wanek, Wolfgang	Co-speaker of Research Focus "Ecology and Biodiversity of Tropical Forests", Faculty of Life Sciences
21. Wanek, Wolfgang	Head of SILVER laboratory (stable isotope facility) at DMES/TER

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## Functions in External Advisory Boards and Evaluation Panels

Name	External Advisory Committee / Board / Evaluation Panel
1. Berry, David	Scientific advisory board member for the Austrian Microbiome Initiative (AMICI)
2. Horn, Matthias	Assessment committee member - Assistant Professor in Microbial Symbiosis, University of Aarhus, Denmark
3. Petersen, Jillian	Gutachter-Panel Forschungsschiffe of the German Research Foundation (DFG)
4. Rattei, Thomas	Board Member of the Austrian Association of Molecular Life Sciences and Biotechnology
5. Rattei, Thomas	Board Member of the Austrian Bioinformatics Platform
6. Rattei, Thomas	Board Member of AMICI - the Austrian Microbiome Initiative
7. Rattei, Thomas	Member of the advisory board of the EURAC Institute of Mummy Research, Bolzano, Italy
8. Richter, Andreas	Member of the Committee for the Institutional Evaluation of the Faculty of Biology at the Technical University of Darmstadt, Germany
9. Wagner, Michael	Member of External International Advisory Board (EIAB) of the Soehngen Institute of Anaerobic Microbiology, Netherlands established by the Radboud University, Wageningen University, Technical University Delft, and the Royal Netherlands Institute for Sea Research (NIOZ)
10. Wagner, Michael	Member of the Evaluation Panel of the City of Vienna Awards (Preise der Stadt Wien)
11. Wagner, Michael	Member of the evaluation Panel of the Austrian Academy of Sciences for Doc stipends

## Functions in Other External Committees, Boards and Associations

Name	External Committee / Board / Association
1. Daims, Holger	Member of the Board of Experts, Austrian Microbiome Initiative (AMICI)
2. Loy, Alexander	Managing director and founding member of the Austrian Microbiome Initiative (AMICI)
3. Loy, Alexander	Founding and faculty member of the Austrian Polar Research Institute (APRI)
4. Petersen, Jillian	Co-chair of the working group 'Symbiotic Interactions' of the German Society for General and Applied Microbiology
5. Rattei, Thomas	Corresponding Member of workgroup "Bioinformatics" of the German Society of Clinical Chemistry and Laboratory Medicine
6. Rattei, Thomas	Member of the steering committee of the Critical Assessment of Metagenomic Interpretation CAMI

7. Rattei, Thomas	Representation of Austria within the European infrastructure for Life Science Information (ELIXIR) and board member of the Austrian Bioinformatics Platform ATBI
8. Rattei, Thomas	Founding member and board member of the Community of Special Interest "MICROBIOME" of the international Society of Computational Biology
9. Rattei, Thomas	Member of the review panel of the priority program "Small Proteins in Prokaryotes, an Unexplored World" (SPP2002) of the German Research Foundation
10. Richter, Andreas	Member of the Board of Experts, Austrian Microbiome Initiative (AMICI)
11. Richter, Andreas	Member of the Management Team of the Austrian Polar Research Institute
12. Richter, Andreas	Representative of the University of Vienna for the Climate Change Centre Austria (CCCA)
13. Richter, Andreas	Deputy member of the Austrian National Commission on Biological Diversity
14. Richter, Andreas	Member of the General Assembly of the EU-PolarNet (Horizon 2020 Coordination Action)
15. Richter, Andreas	Austrian Representative to the Terrestrial Working Group of the International Arctic Science Committee (IASC)
16. Wagner, Michael	Member of the ERC Advanced Grant Panel LS8
17. Wagner, Michael	Member of the Board of Experts, Austrian Microbiome Initiative (AMICI)
18. Wanek, Wolfgang	General Secretary of the Association for the Advancement of the Tropical Research Station La Gamba, Costa Rica

## Other Professional Activities

Name	Description of Award / Promotion
1. Daims, Holger	Developer of the software <i>daim</i> (digital image analysis in microbial ecology), provided as free software to academic users and used in >270 published studies (since 2006)
2. Horn, Matthias	Member of the Genetic Engineering Commission "Gentechnikkommission" and the Scientific Advisory Board of the "Gentechnikkommission" of the Austrian Federal Ministry for Health
3. Horn, Matthias	Co-founder and curator of probeBase – an online resource for rRNA-targeted oligonucleotide probes and primers ( <a href="http://www.probebase.net/">http://www.probebase.net/</a> )
4. Loy, Alexander	Co-founder and curator of probeBase – an online resource for rRNA-targeted oligonucleotide probes and primers ( <a href="http://www.probebase.net/">http://www.probebase.net/</a> )
5. Rattei, Thomas	Technical and scientific coordination of the community-based re-annotation of all chlamydial genomes