Rainer M. Volkamer

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Guest Professor ETH Zurich & Visiting Scientist at Paul Scherrer Institute, Switzerland, 2021 (sabbatical)
Professor, Dept. of Chemistry, CIRES, Atmospheric and Oceanic Sciences, University of Colorado, 2019-
Associate Professor, Dept. of Chemistry (tenured), CIRES, Atmospheric and Oceanic Sciences, 2014-2019
KIT Distinguished Intl Scholar, Karlsruhe Institute of Technology (KIT), Germany, 2014-2015 (sabbatical)
CIRES Fellow, Cooperative Institute for Research in the Environmental Sciences, 2009-
Assistant Professor, Dept. of Chemistry & Atmospheric and Oceanic Sciences, 2007-2014

EDUCATION

University of Heidelberg, Heidelberg, Germany, Physics, Diplom, 1996
Fundacion CEAM, Valencia, Spain, Marie Curie Fellow, 1998-2001
University of Heidelberg, Heidelberg, Germany, Physics, PhD, 2001
M.I.T., Earth Atmosphere Planetary Sciences, Cambridge, MA, 2002-2005
UC-San Diego, Chemistry & Biochemistry, San Diego, CA, 2005-2007

AWARDS & HONORS

- Swiss National Science Foundation Scientific Exchanges Fellowship Award, 2021
- Friedrich Wilhelm Bessel Research Award – "for outstanding accomplishments in remote sensing, and future promise for achievements with lasting impact beyond the area of specialization.", 2020
- American Geophysical Union Ascent Award – "for exceptional achievements in the fields of the atmospheric and climate sciences", 2019
- KIT Distinguished International Scientist Fellowship Award – "in recognition of your excellence in creative works related to atmospheric chemistry, environmental sustainability and climate", 2014-2015
- ISI Highly Cited Researcher – "for exceptional research performance, demonstrated by production of multiple highly cited papers that rank in the top 1% by citations for Geosciences" (by Thomson Reuters), 2014
- CAREER award by National Science Foundation, 2009
- Feodor-Lynen Fellowship by Alexander von Humboldt Foundation, 2005-2007
- Camille and Henry Dreyfus Environmental Chemistry Postdoctoral Fellow, 2002-2005
- Marie Curie Research Graduate Fellowship by the European Commission, 1998-2000
- Erasmus Scholarship by the European Commission, 1992-1993

SERVICE & SYNERGISTIC ACTIVITIES

- Principal Investigator and Mission Scientist: TI3GER project, 2020-
- Tropospheric Ozone Assessment Report, Phase II, Chapter: "Ozone in the marine boundary layer", 2020-2024
- External Review Panel Member, HALO Mission Planning, DLR, Oberpfaffenhofen, Germany, 2019
- Principal Investigator and Mission Scientist: BB-FLUX project, 2018-
- CLOUD Consortium, CERN, Geneva, Switzerland, 2017-
- Associate Editor, Atmospheric Chemistry and Physics, 2005-2021
- Associate Editor, Atmospheric Measurement Techniques, 2008-
- Invited Speaker of 115+ scientific lectures in 18 countries.
- Service to the CU Vice Chancellor of Research Advisory Committee (2016-2019); Chemistry Executive Committee (2017-2018); Graduate Advisor Analytical Chemistry (2019-2020); Health and Safety Committee (2017-2020); Chemstores and ChemPRS software Committee (2019-2020); Chemistry Space Committee (2019-2020); CIRES Innovative Research Program Chair (2017), CIRES Visiting Fellows Program Committee (2021, 2016), CU Research & Innovation Seed Grant Program (2016), Analytical Chemistry Graduate Admission lead (2008-2016), CIRES Executive Committee (2013-2014), CIRES Distinguished Lecture Series (2012), CIRES Graduate Student Fellowship Program (2011), CIRES Innovative Research Program (2010).

- Outreach: SOLAS, UNESCO "International Year of Planet Earth", Colorado "Race to the Top", STEM Coordinators St Vrain School District, High School Teacher Conference.
- Science-Policy in Mexico, Co-Advisor to ProAIRE, Mexico City, public lectures.
- Membership and Network: Deutsche Physikalische Gesellschaft, Marie Curie Network, European Geophysical Union, American Geophysical Union, Humboldt Network, and American Chemical Society.
- Interviews and Newsletter contributions on request by *Nature Climate Change*, *SOLAS* Newsletter, *CLIVAR* Newsletter, *Spheres* magazine, Daily Camera, Denver 7, KITV, Colorado Public Radio, Deutschlandfunk.
- Organized and managed sessions at conferences; review manuscripts for scientific journals, and proposals for national and international funding agencies, including serving on panels for NASA, DoE, and NCAR.
- Field campaigns that I design use mobile platforms (research aircraft, ships, cars) to study atmosphere-ecosystem interactions (TI3GER: marine iodine & UTLS; BBFLUX: wildfire emissions; TORERO: air-sea exchange). These projects contribute data to PhD thesis, and provide research opportunities for undergraduates, and postdocs. The BB-FLUX science team included ~30 researchers from 4 National Laboratories (3 US, 1 Germany), 2 US universities, and 2 foreign universities. The TORERO science team included ~60 researchers from 5 countries, and coordinated a research aircraft with two research vessels within the framework of the international SOLAS project.

COURSES

- **Undergraduate:** CHEM4171: *Instrumental Analysis*, 27-54 undergraduate students/sem. (F12, F15, F16, F19, S20); CHEM4181: *Instrumental Analysis with Environmental Emphasis*, 21-41 undergraduate students/sem. (S11, S13, S16, S17, S18, S19)
- **Graduate:** CHEM5161: *Analytical and Atmospheric Spectroscopy*, 6-12 graduate students/sem. (F07-09, F11, F13, S20, F20, F22); CHEM6901: *Special topics Chemistry*, 2-3 graduate students/sem. (F07-S20)

PATENTS

- Volkamer, R, S. Baidar, D. Thomson, Mobile Devices for Tracking a Radiation Disk Light Source and Methods Using Same, Patent No. US 10,379,194 B2, Aug 13, 2019

PUBLICATIONS – QUANTITATIVE SUMMARY

Number of peer reviewed publications:	140
Highly Cited Papers (top 1% in Geosciences):	4
H-index:	61
Citations:	13096
Researcher ID:	B-8925-2016

RESEARCH FUNDING

Awards in the past 4 years (amounts are $ US to my group):

- NOAA-AC4-NA21OAR4310139: Airborne DOAS Measurements of Oxygenated VOC and NO2 for CUPIDs, 5/21-4/24; $ 538,687; PI
- NSF-AGS-2027252: Collaborative Research: TI^{3}GER - Technological Innovation Into Iodine and GV-aircraft Environmental Research; 9/20–8/22; $ 1,755,093; PI
- NSF-AGS-2023961: EAGER: Laminar Flow Inlet and INS Innovation for GV aircraft; 3/20–8/22; $ 293,999; PI
- NSF-AGS-1951514: Collaborative Research: Mercury oxidation pathways…; 3/20–2/23; $ 620,800; Co-PI
- NSF-AGS-1801280: Collaborative Proposal: CLOUD Consortium Membership; 6/18–5/22; $ 271,197; Co-PI
- NSF-AGS-1754019: Biomass Burning Flux Measurements of Trace Gases and Aerosols (BB-FLUX) Using SOF on the Wyoming King Air; 3/18–2/22; $ 1,000,858; PI
- DoE-DE-SC0018221: Assessing the Drivers of Isoprene SOA: Laboratory, Field Observations, and Modeling, 9/17–8/21, $ 375,000, Co-PI
- NASA-80NSSC17K0369: Measurements of weak visible absorption lines of water and O2-O2: Improvements to DOAS reference spectra and HITRAN; 9/17–5/22; $ 180,000; PI
- NSF-AGS-1620530: Chemical Coupling of halogens and oxygenated VOC: Observations, Experiments and Modeling; 7/16–6/22; $ 843,898; PI
- NASA-NNX16AQ42G: CINDI-2 field campaign: deploying DS and 2D-MAX-DOAS; 9/16–8/18; $ 79,295; PI
- NSF-AGS-1744537: RAPID: Demonstrate airborne SOF on the N2UW during Pre-BB-FLUX; 6/17–5/18; $ 199,973; PI