

TEXAS STATE VITA

I. Academic/Professional Background

A. Name: Dittmar Hahn Title: Professor of Biology

B. Educational Background

Degree	Year	University	Major	Thesis/Dissertation
Habilitation	1998	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland	Soil Biology	<i>In situ</i> analysis of bacterial populations in heterogeneous environments
Doctoral	1989	Wageningen Agricultural University, Wageningen, The Netherlands	Agriculture/ Microbiology	16S rRNA as molecular marker in ecology of <i>Frankia</i>
Master's (Diploma)	1985	University of Hamburg, Hamburg, Germany	Biology	Characterization of <i>Frankia</i> strains isolated from <i>Alnus glutinosa</i> nodules
Bachelor's	1983	University of Hamburg, Hamburg, Germany	Biology	n/a

C. University Experience

Position	University	Dates
Chair, Dept. Biology	Texas State University, San Marcos	2013-
Regents' Professor	Texas State University, San Marcos	2016-
Distinguished Professor	Texas State University, San Marcos	2016-
Professor	Texas State University, San Marcos	2009-2016
Associate Professor	Texas State University, San Marcos	2004-2009
Assistant Professor	New Jersey Institute of Technology (NJIT)	1999-2004
Assistant Research Professor	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland	1995-1998
Post Doctoral Student	Swiss Federal Institute of Technology (ETH), Zurich, Switzerland	1991-1994
Post Doctoral Student	Wageningen Agricultural University, Wageningen, The Netherlands	1989-1991

D. Relevant Professional Experience

Position	Entity	Dates
n/a	n/a	n/a

II. TEACHING

A. Teaching Honors and Awards

none

B. Courses Taught

1. Lectures (incl. laboratories)

Soil Biology, course no. BIO-7360-S (Texas State University-San Marcos, in preparation)

Microbial Ecology, course no. BIO-4446/5446 (Texas State University-San Marcos)

Topics in Microbial Ecology, course no. BIO-5319 (Texas State University-San Marcos)

Molecular Techniques in Microbial Ecology, course no. BIO-7360-G (Texas State University-San Marcos)

Aquatic Microbial Ecology, course no. BIO-7410 (Texas State University-San Marcos)

General Microbiology, course no. 21-120-335 (Rutgers University-Newark, and New Jersey Institute of Technology (NJIT), together with Prof. David Kafkewitz)

Microbiology: Principles & Applications, course no. 26-120-604 (Rutgers University-Newark, and New Jersey Institute of Technology (NJIT), together with Prof. David Kafkewitz)

Microbial Ecology, course no. 26-120-516 (Rutgers University-Newark, and New Jersey Institute of Technology (NJIT))

Ecology of Microorganisms, course no. 21-120-473 (Rutgers University-Newark, and New Jersey Institute of Technology (NJIT))

2. Laboratory Courses

Undergraduate Research, course no. BIO-4299 (Texas State University-San Marcos)

Research Experience, course no. BIO-5114/5214/5314 (Texas State University-San Marcos)

Research Experience, course no. BIO-7114/7214/7314 (Texas State University-San Marcos)

Dissertation, course no. BIO-7399/7699-A (Texas State University-San Marcos)

Research in Biology, course no. 26-120-702 (Rutgers University-Newark, and New Jersey Institute of Technology (NJIT))

Problems in Biology, course no. 26-120-491 (Rutgers University-Newark, and New Jersey Institute of Technology (NJIT))

Environmental Microbiology, course no. WS 03-259 (Swiss Federal Institute of Technology (ETH), Zurich, Switzerland)

General Microbiology, course no. P200-108 (Wageningen Agricultural University (WAU))

3. Field Courses

Zurich North: Soils and Plants, course no. SS 85-614 (Swiss Federal Institute of Technology (ETH), Zurich, Switzerland)

4. International Courses

Ecole doctorale en microbiologie workshop “Biologie de l’extreme: en milieu alpine et en milieu marin”, University of Geneva, Geneva, and Cantonal Institute of Microbiology, Bellinzona, Switzerland, August 2007. Seminar “Assessing *Frankia* populations in plants and soil”

Ecole doctorale en microbiologie workshop “Biologie de l’extreme: en milieu alpine et en milieu marin”, University of Geneva, Geneva, and Cantonal Institute of Microbiology, Bellinzona, Switzerland, August 2005. Seminars “Introduction into Microbial Ecology” and “Molecular Tools in Microbial Ecology”, manual and experimental bloc on the same topic.

Ecole doctorale en microbiologie workshop “Biologie de l’extreme: en milieu alpine et en milieu marin”, University of Geneva, Geneva, and Cantonal Institute of Microbiology, Bellinzona, Switzerland, August 2003. Seminar “Assessing *Frankia* populations in plants and soil”, manual and experimental bloc on the same topic.

EAWAG workshop “Sediments and biofilms: *In situ* approach to limnic systems analysis”, Limnological Research Center, Kastanienbaum, Switzerland, September 2001. Seminar “*In situ* analysis of microbial populations”, manual and participation on experimental bloc on the same topic.

EAWAG and ETH course “Third advanced course in microbial ecology”, Limnological Research Center, Kastanienbaum, Switzerland, August/September 1996 with D. Hahn in the organizing committee. Seminar “*In situ* analysis of microbial populations by whole cell hybridization”, manual and experimental bloc on the same topic.

EERO course “Introduction of genetically modified organisms into the environment: biosafety aspects”, Wageningen, The Netherlands, December 1991, Demonstration “*In situ* detection of mycelium and spores of Streptomycetes in soil”, and experimental bloc “Detection and identification of a *tsr*-marked GMO in soil”.

C. Graduate Theses/Dissertations or Exit Committees

1. Ph.D. students

Spandana Vemulapally Competition of *Frankia* populations for nodulation and development in soils, Texas State University, San Marcos, USA, anticipated Spring 2020 (advisor)

Seifeddine Ben Tekaya Population dynamics of *Frankia* in soil, Texas State University, San Marcos, USA, Spring 2018 (advisor)

- Suvidha S. Samant** Quantification of frankiae in soil, Texas State University, San Marcos, USA, Spring 2015 (advisor)
- Qiong Sha** Distribution, diversity and fate of *Salmonella* in natural biofilms, Texas State University, San Marcos, USA, October 2012 (advisor)
- James P. Gaertner** Pathogens in amphibians and reptiles of the Hill country, Texas State University, San Marcos, USA, August 2010 (advisor)
- Babur S. Mirza** Molecular analyses of *Frankia* populations in soil, Texas State University, San Marcos, USA, July 2009 (advisor)
- Allana Welsh** Evaluation of nitrogenase genes as markers in soil microbial community studies, Texas State University, San Marcos, USA, June 2009 (advisor)
- Kallaya Suntornvongsakul** Interaction between *Spartina patens*, arbuscular mycorrhizae and bacteria in heavy metal contaminated salt marsh sediments, NJIT, Newark, NJ, USA, July 2005 (advisor)
- Robert Lippincott** Evaluation of phytoremediation as a tool to clean-up petroleum hydrocarbon- and PAH-contaminated estuarine environments, NJIT, USA, April 2005 (advisor)
- Sandro Peduzzi** Interactions among sulfate-reducing and phototrophic sulfur bacteria in the chemocline of meromictic Lake Cadagno, Switzerland, ETH Zurich, Switzerland, January 2003 (advisor)
- Liisa Maunuksela** Plant growth promoting rhizosphere bacteria in forest soils: Analysis of *Frankia* populations in soils devoid of actinorhizal plants, University of Helsinki, Finland, December 2001 (co-advisor)
- David Burke** The interaction between the grass *Spartina patens*, N-fixing bacteria, and vesicular arbuscular mycorrhizae in a Northeastern salt marsh, Rutgers University, October 2001 (advisor)
- Frank Schönholzer** Quantification of microorganisms in heterogeneous environments by automated image analysis, ETH Zurich, Switzerland, June 2000 (co-advisor)
- Anja Nickel** Analysis of uncultured *Frankia* populations in soil, ETH Zurich, Switzerland, June 2000 (co-advisor)
- Andonis Chatzinotas** *In situ* characterization of microbial structures and functions by whole cell hybridization, ETH Zurich, Switzerland, March 2000 (co-advisor)
- Annatina Hess** *In situ* analysis of the community structure of toluene and *m*-xylene degrading, denitrifying bacteria in a diesel oil contaminated aquifer, ETH Zurich, Switzerland, May 1998 (co-advisor)
- Kornelia Zepp** Analysis of *Frankia* populations by *in situ* hybridization with 23S rRNA targeted oligonucleotide probes, ETH Zurich, Switzerland, September 1996 (co-advisor)

Kathrin Fischer *In situ* analysis of bacterial populations in the gut of the earthworm *Lumbricus terrestris* L. by whole cell hybridization, ETH Zurich, Switzerland, September 1996 (co-advisor)

M. Sajjad Mirza Characterization of uncultured *Frankia* populations by 16S rRNA sequence analysis, Wageningen AU, The Netherlands, February 1993 (co-advisor)

Committee member/exit committee

Suchismita Bhattacharya (NJIT, Environmental Science)

Jeong Seop Shim (NJIT, Environmental Science)

Andrea Giorgioni (NJIT, Environmental Science)

Elaine Brenner-Zalewski (NJIT, Environmental Science)

Jaruwan Talawat (Rutgers-New Brunswick, Microbiology)

Tish Robertson (Rutgers-Newark, Biology)

Rami T. El-Khatib (Rutgers-Newark, Biology)

Ling Yang (NJIT, Environmental Science)

Thipnakarin Boonfueng (NJIT, Environmental Engineering)

Jacob Jackson (Texas State University-San Marcos)

Alisa Abuzeineh (Texas State University-San Marcos)

Jesse Becker (Texas State University-San Marcos)

Melissa Jones (Texas State University-San Marcos)

2. Master's students

Christophe Chahine Spore-formation of inoculated *Frankia* strains in nodules formed on *Alnus glutinosa*, Texas State University, USA, anticipated Spring 2020 (advisor)

Rebecca Kilgore Chagas disease in Central Texas, Texas State University, USA, anticipated Spring 2020 (advisor)

Phuong Ngoc Minh Le Mycorrhizae on roots of *Quercus havardii* in habitat and non-habitat soils, Texas State University, USA, Fall 2019 (advisor)

Stephanie Nordmeyer Molecular analysis of Haemogregarinidae in freshwater turtles, Texas State University, USA, Spring 2019 (advisor)

Abiramasundari Ganesan Bacterial community structure in soils of the oldest agronomic experiment fields in the United States, the Morrow Plots, and of the original tallgrass prairie, Texas State University, USA, Spring 2019 (advisor)

- Anna Gates** Salmonellae in the intestines of *Hypostomus plectostomus* in the San Marcos river, Texas State University, USA, Summer 2016 (advisor)
- Elise Valdez** Identification of microbial populations in compost tea derived from spent mushroom compost using *in situ* hybridization, Texas State University, USA, Summer 2015 (advisor)
- Adriana Aleman** The prevalence of *Trypanosoma cruzi*, the causal agent of Chagas disease, in rodent populations in Texas, Texas State University, USA, Summer 2015 (advisor)
- Jacqueline Hernandez** Source tracking of fecal contamination by cliff swallows, Texas State University, USA, Fall 2014 (advisor)
- Tamira K. Konkin Garcia** Fate of salmonellae in animal feces, Texas State University-San Marcos, USA, Spring 2012 (advisor)
- Joseph Mendoza** Occurrence of *Salmonella* in fishes, Texas State University-San Marcos, USA, Summer 2011 (advisor)
- Anita Pokharel** Preferential nodulation of specific *Frankia* strains on different alder species, Texas State University-San Marcos, Fall 2009 (advisor)
- Tiffany Garres** non-thesis, Fall 2007 (advisor)
- James P. Gaertner** Occurrence of *Salmonella* sp. in turtles of the Hill country, Texas State University-San Marcos, Spring 2007 (advisor, co-advisor: M.R.J. Forstner)
- Thipnakarin Boonfueng** Ni uptake and accumulation by *Spartina patens* in hydroponic culture, NJIT, 2001 (co-advisor, advisor: L. Axe, Civil & Environmental Engineering)
- Bettina Baumgartner** Fate of naturally occurring and inoculated planctomycetes in soil under varying environmental conditions, ETH Zurich, 1998 (in German) (advisor)
- Annette Rust** Fate of inoculated *Frankia* strains in soil under varying environmental conditions, ETH Zurich, 1998 (in German) (advisor)
- Martin Kayser** Detection of toluene-degrading *Azoarcus* strains in Diesel-fuel contaminated aquifers, ETH Zurich, Switzerland, 1997 (in German) (advisor)
- Ivo Keel** Population dynamics of toluene-degrading bacteria under denitrifying conditions, ETH Zurich, Switzerland, 1995 (in German) (advisor)
- Stefan Kohler** Analysis of uncultured *Frankia* populations in soil by molecular methods, ETH Zurich, Switzerland, 1994 (in German) (advisor)
- Roland Durner** Development of *in situ* hybridization protocols with digoxigenin-labeled oligonucleotide- and *in vitro* transcript probes in soil, ETH Zurich, Switzerland, 1992 (in German) (advisor)
- Laurens Vlaar** Identification of a syntrophic bacterium by 16S rDNA sequence analysis, Wageningen AU, The Netherlands, 1990 (in Dutch) (advisor)
- Ingrid Zeegers** Quantification of *Frankia* populations in soil by using molecular methods, Wageningen AU, The Netherlands, 1990 (in Dutch) (advisor)

Anneke Wolters Analysis of uncultured *Frankia* populations in soil by PCR, Wageningen AU, The Netherlands, 1989 (in Dutch) (advisor)

Ronald Kersters Development of nucleic acids extraction protocols from soil, Wageningen AU, The Netherlands, 1989 (in Dutch) (advisor)

Gijs de Bock Development of a standardized nodulation test system for selected *Frankia* strains on black alders, Wageningen AU, The Netherlands, 1987 (in Dutch) (advisor)

Committee member/exit committee

Jessica Bernardin (Texas State University, San Marcos) (fall 2019)

Kaitlin Lopez (Texas State University, San Marcos) (spring 2018)

Thomas Marshall (Texas State University, San Marcos) (summer 2017)

Shawntel Lopez (Texas State University, San Marcos) (summer 2015)

Erica Molina (Texas State University, San Marcos) (summer 2015)

Amelia H. Everett (Texas State University, San Marcos) (spring 2015)

Shelley Pringle (Texas State University, San Marcos) (spring 2014)

Ben Hidalgo-Romano (Texas State University, San Marcos) (spring 2013)

S. Larroca (Texas State University, San Marcos) (non-thesis) (spring 2010)

Monica Gomez (Texas State University, San Marcos) (spring 2009)

L. Anuradha Gunathilake (Texas State University-San Marcos) (spring 2009)

Thomas Erwin (Texas State University-San Marcos) (spring 2009)

Shubhankar Nath (Texas State University-San Marcos) (spring 2009)

Jessica Bolfig (Texas State University-San Marcos) (non-thesis) (fall 2007)

Elizabeth Crittenden (Texas State University-San Marcos) (fall 2007)

Varsha Radhakrishnan (Texas State University-San Marcos) (spring 2007)

Pejmon Afshar (Texas State University-San Marcos) (non-thesis) (spring 2006)

Brent Treadaway (Texas State University-San Marcos) (spring 2006)

Sam Schwarzlose (Texas State University-San Marcos) (summer 2005)

Mubina Merchant (Texas State University-San Marcos) (spring 2005)

Allana Welsh (Texas State University-San Marcos) (spring 2005)

D. Courses Prepared and Curriculum Development

Soil Biology, course no. BIO-7360-S (Texas State University-San Marcos, in preparation)

- Microbial Ecology**, course no. BIO-4446/5446 (Texas State University-San Marcos)
- Aquatic Microbial Ecology**, course no. BIO-7410 (Texas State University-San Marcos)
- Molecular Techniques in Microbial Ecology**, course no. BIO-7360-G (Texas State University-San Marcos)
- Microbial Ecology**, course no. 26-120-516 (Rutgers University-Newark, and New Jersey Institute of Technology (NJIT))
- Zurich North: Soils and Plants**, course no. SS 85-614 (Swiss Federal Institute of Technology (ETH), Zurich, Switzerland)
- Environmental Microbiology**, course no. WS 03-259 (Swiss Federal Institute of Technology (ETH), Zurich, Switzerland)

E. Funded External Teaching Grants and Contracts

- Beckman-Coulter, Inc.:** Integrating genomics CE laboratory hardware and fluidics automation within undergraduate and graduate coursework in the Department of Biology, Texas State University-San Marcos (2 years, 03/01/2005-11/01/2006) (PI: M.R.J. Forstner, Co-PIs: C. Nice, and D. Hahn)
- USDA:** Science based sustainable agriculture support at Texas State University (2.5 years, 02/01/2013-12/31/2015) (PI: H. Rahe (Agriculture), Co-PIs: M.R.J. Forstner, and D. Hahn)

F. Submitted, but not Funded, External Teaching Grants and Contracts

None

G. Funded Internal Teaching Grants and Contracts

None

H. Submitted, but not Funded, Internal Teaching Grants and Contracts

None

I. Other

Visitors advised

- Francisco J. de la Torre-González**, CBG-Instituto Politécnico Nacional, Reynosa, Mexico, 1 month (2010)
- Khadim Hussain**, NIBGE, Faisalabad, Pakistan, 6 months (2010)
- Chanda Cheng**, Royal University of Phnom Penh, Cambodia, 6 months (2009-2010)

Claudia Patricia Larralde-Corona, CBG-Instituto Politécnico Nacional, Reynosa, Mexico, 1 week (2009)

Francisco J. de la Torre-González, CBG-Instituto Politécnico Nacional, Reynosa, Mexico, 1 week (2009)

Kenneth Wilson, Texas State University, 2 weeks (2008)

Ghulam Rasul, NIBGE, Faisalabad, Pakistan, 1 year (2007-2008)

Maria del Carmen Villegas Hernandez, Instituto Politecnico Nacional, Tlaxcala, Mexico, 1 week (2007)

Sandro Peduzzi, University of Geneva, Switzerland, 1 year (2001-2002)

Jeff Zimpfer, University of Illinois, Urbana-Champaign, USA, 2 weeks (2001)

Annunziata Cozzelino*, University of Naples, Italy, 6 months (2001)

Mauro Tonolla, University of Geneva, Switzerland, 2 weeks (2001)

Eleonora Campanelli*, University of Bologna, Italy, 6 months (2001)

Jeff Zimpfer, University of Illinois, Urbana-Champaign, USA, 2 weeks (2000)

Jeff Zimpfer, University of Illinois, Urbana-Champaign, USA, 1 month (1999)

Tanja Niepel, National Research Center for Biotechnology (GBF), Braunschweig, Germany, 1 week (1998)

Rolf Hesselmann, EAWAG, Dübendorf, Switzerland, 1 week (1998)

Jeff Zimpfer, University of Illinois, Urbana-Champaign, USA, 2 months (1998)

Ruth-Anne Sandaa, University of Bergen, Bergen, Norway, 3 months (1997)

Liisa Maunuksela, University of Helsinki, Helsinki, Finland, 6 months (1997)

Werner Liesack, Max-Planck-Institute for Terrestrial Microbiology, Marburg, Germany, 1 week (1996)

Patrizia Ponti, University of Zurich, Switzerland, 2 weeks (1995)

Christof Holliger, EAWAG, Kastanienbaum, Switzerland, 2 weeks (1994)

Mauro Tonolla, University of Geneva, Switzerland, 2 weeks (1993)

*in collaboration with Piero Armenante (NJIT) and David Kafkewitz (Rutgers-Newark)

Short-Term Projects

Jared Oakes (Texas State University), Spring 2019/Fall 2019, Undergraduate Research (BIO4299)

Fritzina B. Morrison (Texas State University), Fall 2015/Spring 2016, Undergraduate research (BIO4299)

Adam Barton (Texas State University), Fall 2015/Spring 2016, Undergraduate research (BIO4299)

Jessica Vanderheyden (Texas State University), Fall 2013/Spring 2014, Undergraduate research (BIO4299)

Chelsea Smith (Texas State University), Spring/Summer 2013, Undergraduate research (BIO4299)

Frank Dang (Texas State University), Fall 2012/Spring 2013, Undergraduate research (BIO4299)

Jacqueline Hernandez (Texas State University), Spring/Fall 2011, Undergraduate research (BIO4299)

Jasmine L. Gowarty (Texas State University), Fall 2009/Spring 2010, Undergraduate research (BIO4299)

Yuki Gomada (Texas State University), Spring/Fall 2009, Undergraduate research (BIO4299)

Joseph Mendoza (Texas State University), Fall 2008/Spring 2009, Undergraduate research (BIO4299)

Susan Cisneros (Texas State University), Spring 2008, Undergraduate research (BIO4299)

Dante Descalzi (Rutgers-Newark), Spring/Fall 2003, Comparative analysis of microbial populations in Ni-contaminated and non-contaminated marsh sediments

Pete Metivier (Rutgers-Newark), Spring 2003, Independent Study (EVSC-725-154)

Mahesh K. Karwa (NJIT), Spring 2003, Independent Study (CHEM-705-154)

Randall Boriel (Rutgers-Newark), Fall 2002, Graduate Student Lab Rotation: PCR-based analysis of mycorrhizae in salt marsh sediment (26-120-509)

Robert Lippincott (NJIT), Summer 2001, Summer Research Project (EVSC-790C-154)

Tish Robertson (Rutgers-Newark), Fall 2000, Graduate Student Lab Rotation: Inferring the activity of nitrogen-fixing bacteria using RT-PCR (26-120-509)

Kashif Sandhu (Rutgers-Newark), Fall 2000, Senior Undergraduate Project (26-120-491)

Mark Piskaldo (NJIT), Fall 2000, Senior Undergraduate Project (BIOL-491-154)

Robert Lippincott (NJIT), Summer 2000, Summer Research Project (EVSC-790C-154)

Lab Experience (up to 5 hours a week)

Monica Gomez (Texas State University), Spring 2009

Navya Kondapalli (Texas State University), Fall 2007

Meredith Gansner (Morristown High School), Summer 2003

Deneah Johnson (Irvington Hill High School), ACS project SEED, Summer 2003

Pete Metivier (Ph.D. Environmental Science, Rutgers-Newark), Summer 2003

Manjula Miryalkar (Biology undergraduate, NJIT), Spring 2003

Deepti Sanjai (Biology undergraduate, NJIT), Spring 2003

Sreelatha Akkapeddi (Biology undergraduate, NJIT), Fall 2001

Adalberto Vazquez (Union Hill High School), ACS project SEED, Summer 1999

III. SCHOLARLY/CREATIVE

A. Works In Print

1. Books (if not refereed, please indicate)

a. Scholarly Monographs

None

b. Textbooks

None

c. Edited Books

None

d. Chapters in Books (corresponding author is underlined)

Hu, J., Hahn, D., Rudzinski, W., Wang, Z., Estrada, L. 2012. Inspection of Texas concrete bridge pillars with suspected microbial-induced deterioration. Transportation Research Board (TRB), 91st Annual Meeting, Washington, DC.

Hahn, D. 2008. Polyphasic taxonomy of the genus *Frankia*. In: Pawlowski, K, Newton, W.E. (eds), Nitrogen-fixing actinorhizal symbioses, pp. 25-47. Springer, Dordrecht, The Netherlands.

Welsh, A., Mirza, B.S., Hahn, D. 2007. Analyses of uncultured *Frankia* populations in root nodules of different alder species. In: Peduzzi, R., Tonolla, M., Boucher-Rodoni, R. (eds), Milieux alpins et changement global, vol. 1, pp. 99- 104. Documenta Centro di Biologia Alpina di Piora (ISSN 1424-4993).

Suntornvongsagul, K., Hahn, D. 2006. Competition between inoculated and indigenous *Frankia* populations for nodulation on *Alnus glutinosa*. In: Peduzzi, R., Tonolla, M., Boucher-Rodoni, R. (eds), Milieux extrêmes: conditions de vie en milieu alpin et milieu marin, pp. 111-117. Documenta Centro di Biologia Alpina di Piora (ISSN 1424-4993).

- Dawson, J.O., Gottfried, G.J., Hahn, D.** 2005. Occurrence, structure, and nitrogen-fixation of root nodules of actinorhizal Arizona alder. In: Gottfried, G.J., Gebow, B.S., Eskew, L.G., Edminster, C.B. (eds), Connecting islands and desert seas: biodiversity and management of the Madrean Archipelago II, pp. 75-79. Proceedings RMRS-P-36, USDA, Forest Service, Rocky Mountain Research Station Publications, Fort Collins, CO.)
- Hahn, D., Nickel, A., Zepp, K., Dawson, J.** 2000. Molecular methods for the analysis of *Frankia* populations in plants and soil. In Subba Rao, N.S., Dommergues, Y.R. (eds), Microbial interactions in agriculture and forestry, Vol 2, pp. 15-60. Science Publishers, Enfield, NH, USA.
- Hahn, D., Hess, A., Amann, R.I., Zeyer, J.** 1998. *In situ* identification of bacterial populations in terrestrial habitats without cultivation. In Serra, R. (ed), Biotechnology for soil remediation, pp. 41-65. C.I.P.A., Milan, Italy.
- Akkermans, A.D.L., Hahn, D., Briglia, M.** 1995. Development of reliable methods for detection of genetically engineered microorganisms (GEMs) in soil. In Rogaar, H., van Elsas, J.D., Akkermans, A.D.L., van den Heuvel-Pieper, A.H. (eds), Adaptation and selection mechanisms of natural and genetically modified soil microorganisms, pp. 25-34. The Netherlands Integrated Soil Research Program, Wageningen, The Netherlands.
- Zeyer, J., Höhener, P., Hunkeler, D., Hahn, D.** 1995. *In situ* bioremediation of mineral oil contaminated soils and aquifers: Quantification of degradation rates and fate of hydrocarbons. In van den Brink, W.J., Bosman, R., Arendt, F. (eds), Contaminated soil '95, pp. 319-326. Kluwer Academic Press, The Netherlands.
- Hahn, D., Amann, R.I., Zeyer, J.** 1994. Oligonucleotide probes for the detection and identification of bacteria. In Ryder, M.H., Stephens, P.M., Bowen, G.D. (eds), Improving plant productivity with rhizosphere bacteria, pp. 163-171. CSIRO Division of Soils, Adelaide, Australia.
- Hahn, D., Zeyer, J.** 1994. *In situ* hybridization techniques in natural environments. In Ritz, K., Dighton, J., Giller, K.E. (eds), Beyond the biomass: Compositional and functional analysis of soil microbial communities, pp.137-148. John Wiley, Chichester, UK.
- Akkermans, A.D.L., Hahn, D., Baker, D.** 1991. The family Frankiaceae. In Balows, A., Trüper, H.G., Dworkin, M., Harder, W., Schleifer, K.-H. (eds), The Prokaryotes, Chapter 45. Springer Verlag, New York, USA.
- Akkermans, A.D.L., Hahn, D.** 1990. *Frankia* as limiting factor in the growth of *Alnus* spp.: A critical evaluation. In Werner, D., Müller, P. (eds), Fast growing trees and nitrogen fixing trees, pp. 331-336. Gustav Fischer Verlag, Marburg, Germany.
- Hahn, D., Starrenburg, M.J.C., Akkermans, A.D.L.** 1988. Micro-propagation and selection of *Alnus glutinosa* ecotype clones. In Grassi, G., Pirwitz, D., Zibetta, H. (eds), Energie from Biomass 4, pp. 69-77. Elsevier Applied Sciences, New York, USA.
- Hahn, D., Starrenburg, M.J.C., Akkermans, A.D.L.** 1988. Improvement of symbiotic nitrogen-fixation by *Alnus* sp. in monoculture and in mixed stands with poplar or douglas

in the Netherlands. *In Euroform New Energies* vol. 3, Renewable energy sources: Proceedings EEC contractors meeting Saarbrücken, pp. 437-439. H.S. Stephens & Associates Publishers, Bedford, UK.

e. Creative Books

Hahn, D. 1996. Analysis of microbial community structure in terrestrial habitats by molecular methods. Habilitation thesis, Swiss Federal Institute of Technology Zurich, Switzerland.

Hahn, D. 1990. 16S rRNA as molecular marker in ecology of *Frankia*. Ph.D. thesis, Wageningen Agricultural University, The Netherlands.

Hahn, D. 1985. Characterization of *Frankia* strains isolated from *Alnus glutinosa* nodules. Master's thesis, University of Hamburg, Germany (in German).

2. Articles

a. Refereed Journal Articles (corresponding author is underlined)

Benavidez, K.M., Guerra, T., Torres, M., Rodriguez, D., Veech, J.A., Hahn, D., Miller, R.J., Soltero, F.V., Perez Ramirez, A.E., Perez de Leon, A., Castro-Arellano, I. 2019. The prevalence of *Leptospira* among invasive small mammals on Puerto Rican cattle farms. *PLOS Neglected Tropical Diseases* **13**(5): e0007236.

Vemulapally, S., Guerra, T.M., Hahn, D. 2019. Localization of typical and atypical *Frankia* isolates from *Casuarina* sp. in nodules formed on *Casuarina equisetifolia*. *Plant and Soil* **435**, 385-393.

Marshall, T.L., Baca, C.R., Correa, D.T., Forstner, M.R.J., Hahn, D., Rodriguez, D. 2019. Genetic characterization of chytrids isolated from larval amphibians collected in central and east Texas. *Fungal Ecology* **39**, 55-62.

Gates, A.Y., Guerra, T.M., Morrison, F.B., Forstner, M.R.J., Hardy, T.B., Hahn, D. 2018. Detection of *Salmonella* in the intestine of *Hypostomus plecostomus* from the upper San Marcos River, Texas. *Journal of Water and Health* **16**, 460-471.

Ben Tekaya, S., Guerra, T., Rodriguez, D., Dawson, J.O., Hahn, D. 2018. *Frankia* diversity in host-plant root nodules is independent of abundance or relative diversity of *Frankia* in corresponding rhizosphere soils. *Applied and Environmental Microbiology* **84**:e02248-17.

Milholland, M.T., Castro-Arellano, I., Arellano, E., Nava-Garcia, E., Rangel-Altamirano, G., Gonzalez-Cozatl, F.X., Suzan, G., Schountz, T., Gonzalez-Padron, S., Viguera, A., Rubio, A., Maikis, T.J., Westrich, B., Marinez, J.A. III, Esteve-Gassent, M.D., Torres, M., Rodriguez-Ruiz, E.R., Hahn, D., Lacher, T.E.jr. 2017. Species identity supersedes the dilution effect concerning Hantavirus prevalence at sites across Texas and Mexico. *ILAR Journal* **58**, 401-412.

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b. Non-refereed Articles (corresponding author is underlined)

Hahn, D. 1999. Molecular methods for the analysis of bacterial communities (Les méthodes moléculaires pour l'analyse des communautés bactériennes). *Biofutur* **185**, 16 (in French).

Zeyer, J., Höhener, P., Hunkeler, D., Hahn, D., Häner, A., Bregnard, T., Hess, A. 1995. *In situ* bioremediation of hydrocarbon-contaminated soils and aquifers. *Bulletin. Magazin der ETH Zurich* **257**, 62-63 (in German).

Hahn, D., Akkermans, A.D.L. 1991. Ribosomal RNA: Marker in ecological soil research. *Biovisie* **71**, 39 (in Dutch).

3. Abstracts

Not documented

4. Reports

Not documented

5. Book Reviews

None

6. Other

None

B. Works not in Print

1. Papers Presented at Professional Meetings

Hahn, D. Interactions between uncultured bacterial populations in the environment. American Society of Microbiology, Texas Branch Spring Meeting, New Braunfels, TX, March 2008 (**invited speaker**)

Hahn, D. Interactions among purple sulfur and sulfate-reducing bacteria in the chemocline of a meromictic lake. American Society of Microbiology, Texas Branch Fall Meeting, Galveston, TX, 2006 (**invited speaker**)

Hahn, D. Ecology of *Frankia* populations in root nodules and soil. 9th International Symposium on Nitrogen Fixation with Non-Legumes, Leuven, Belgium, September 2002 (**invited speaker**).

Hahn, D. Assessing *Frankia* populations in root nodules and soil using molecular methods. American Society of Microbiology, 101st General Meeting, Orlando, FL, May 2001 (**invited speaker**).

Hahn, D. *In situ* analysis of microorganism-earthworm interactions. Körber Symposium "Molecular and Microsensor Studies of Microbial Communities", Max Planck Institute for Marine Microbiology, Bremen, Germany, September 1998 (**invited speaker**).

Hahn, D. Bacterial diversity in soil. Meeting of the NVVM Section Microbial Ecology on "Microbial Diversity", Wageningen, The Netherlands, February 1998.

Hahn, D. *In situ* analysis of microbial populations in terrestrial environments. International conference "Biotechnology for soil remediation", Milan, Italy, November 1997 (**invited speaker**).

Hahn, D. *In situ* detection and enumeration of bacteria by whole cell hybridization. Conference "The 10th international conference on *Frankia* and actinorhizal plants", Davis, California, USA, August 1995.

Hahn, D. *In situ* detection and enumeration of bacteria in soil by whole cell hybridization. Meeting of Swiss Microbiologists (SGM), Lugano, Switzerland, March 1995 (**invited speaker**).

Hahn, D. Oligonucleotide probes for the detection and identification of bacteria. Workshop on Plant Growth-Promoting Rhizobacteria, Adelaide, Australia, March 1994 (**invited speaker**).

Hahn, D. *In situ* hybridization techniques in natural environments. Conference "Beyond the biomass: Compositional and functional analysis of soil microbial communities", Wye, England, March 1993 (**invited speaker**).

Hahn, D. *In situ* detection of bacteria in the environment. Meeting of Swiss Microbiologists (SGM), Montreux, Switzerland, March 1993.

Hahn, D. Synthetic oligonucleotides in identification of *Frankia* strains. Meeting of Dutch Microbiologists (BION), Amsterdam, The Netherlands, December 1988 (in Dutch) (**invited speaker**).

2. Invited Talks, Lectures, and Presentations

Hahn, D. Microbial Ecology: Tracking the Invisible. Hanse-Wissenschaftskolleg (HWK), Delmenhorst, Germany, July 2010.

Hahn, D. Ecology of nitrogen-fixing *Frankia*: Assessing populations in plants and soil. Department of Biology, University of Texas, Arlington, TX, USA, March 2009.

Hahn, D. Ecology of *Frankia* species: Assessing *Frankia* populations in plants and soil. Department of Biology, Texas State University, San Marcos, TX, USA, October 2008.

Hahn, D. Assessing the fate of uncultured microbial populations in the environment. Institute of Biology, University of Neuchâtel, Neuchâtel, Switzerland, May 2008.

Hahn, D. Assessing uncultured bacterial populations in the environment. Centro de Biotecnología Genómica, Reynosa, México, February 2008.

Hahn, D. Interactions between uncultured bacterial populations in the environment. Colloquium of the Life Sciences series at Colorado State University, Fort Collins, CO, November 2007.

Hahn, D. Interactions between uncultured bacterial populations in the environment. Department of Biology, Texas State University, San Marcos, TX, USA, September 2006.

Hahn, D. Interactions between uncultured bacterial populations in the environment. Department of Biology, Texas State University, San Marcos, TX, USA, June 2004.

Hahn, D. Interactions between uncultured bacterial populations in the environment. Seminar series of the Department of Chemical Engineering, New Jersey Institute of Technology (NJIT), NJ, USA, December 2003.

Hahn, D. Interactions among purple sulfur and sulfate-reducing bacteria in the chemocline of meromictic Lake Cadagno, Switzerland. Seminar series of the Department of Biochemistry, Rutgers University, New Brunswick, NJ, March 2003.

Hahn, D. Interactions between uncultured bacterial populations in the environment. Seminar series of the Department of Biological Sciences, University of Nevada, Las Vegas, NV, February 2003.

Hahn, D. Assessing interactions between uncultured bacterial populations in the environment. Seminar series of the Department of Earth and Planetary Sciences, Washington University, St. Louis, MO, March 2002.

- Hahn, D.** Assessing interactions between uncultured bacterial populations in the environment. Seminar series of the Department of Natural Resources and Environmental Sciences, University of Illinois, Urbana-Champaign, IL, March 2002.
- Hahn, D.** Microbial ecology: Recent developments. Seminar series of the Department of Biology, Essex County College, Newark, NJ, February 2002.
- Hahn, D.** *In situ* analysis of microbial populations. Seminar series of the Federated Department of Biology, New Jersey Institute of Technology and Rutgers University, Newark, NJ, February 2002.
- Hahn, D.** Assessing *Frankia* populations in plants and soil. Biology colloquium of the Federated Department of Biology, New Jersey Institute of Technology and Rutgers University, Newark, NJ, September 2000.
- Hahn, D.** Analysis of *Frankia* populations in environmental samples by molecular methods. Seminar series of the Department of Microbiology, Ludwig-Maximilians University, Munich, Germany, January 2000.
- Hahn, D.** Assessing *Frankia* populations in root nodules and soil using molecular methods. Seminar series of the Department of Ecology, Evolution and Natural Resources, Rutgers University, New Brunswick, NJ, September 1999.
- Hahn, D.** *In situ* analysis of microorganism-earthworm interactions. Seminar series of the Federated Department of Biology, New Jersey Institute of Technology and Rutgers University, Newark, NJ, April 1999.
- Hahn, D.** *In situ* detection of bacteria in the environment. Seminar series of the Université Claude Bernard-Lyon I, Centre d'Analyse Moléculaire de la Biodiversité, France, February 1998.
- Hahn, D.** *In situ* detection and enumeration of bacteria in soil by whole cell hybridization. Seminar series of the GBF Braunschweig, Germany, May 1996.
- Hahn, D.** Whole cell hybridization as a tool to analyze bacterial populations *in situ*. Seminar series of the Max-Planck-Institute for Terrestrial Microbiology, Marburg, Germany, January 1996 (in German).
- Hahn, D.** *In situ* detection of bacteria in terrestrial environments. Seminar series of the Friedrich-Schiller-Universität Jena, Germany, October 1995 (in German).
- Hahn, D.** *In situ* detection of bacteria in terrestrial environments. Seminar series of the Biocentre, Basel, Switzerland, June 1995.
- Hahn, D.** The *in situ* hybridization technique as tool to study uncultured microorganisms in heterogeneous environments. Seminar series of the Université Claude Bernard-Lyon I, Soil Ecology, November 1993.
- Hahn, D.** Microscopic detection of bacteria in soil: advantages and disadvantages of the *in situ* hybridization technique. Seminar series of the Limnological Research Center, Kastanienbaum, Switzerland, August 1993 (in German).

Hahn, D. Detection of nitrogen-fixing *Frankia* spp. in soil using 16S rRNA probes. Seminar "Biochemical and Gene Technological Methods in Studies of Microbial Ecology", Copenhagen, Danmark, November 1989.

Hahn, D. Molecular techniques in ecological studies. Seminar "Mixed Cultures", Wageningen Agricultural University, Department of Microbiology, The Netherlands, October 1988 (in Dutch).

3. Consultancies

None

4. Workshops

Hahn, D. Assessing *Frankia* populations in plants and soil. Workshop "Ecole doctorale en microbiologie: Biologie de l'extreme: en milieu alpine et en milieu marin", University of Geneva, Geneva, and Cantonale Institute of Microbiology, Bellinzona, Switzerland, August 2007 (**invited lecturer**)

Hahn, D. Introduction into Microbial Ecology. Workshop "Ecole doctorale en microbiologie: Biologie de l'extreme: en milieu alpine et en milieu marin", University of Geneva, Geneva, and Cantonale Institute of Microbiology, Bellinzona, Switzerland, August 2005 (**invited lecturer and lab advisor, incl. manual preparation**).

Hahn, D. Molecular Tools in Microbial Ecology. Workshop "Ecole doctorale en microbiologie: Biologie de l'extreme: en milieu alpine et en milieu marin", University of Geneva, Geneva, and Cantonale Institute of Microbiology, Bellinzona, Switzerland, August 2005 (**invited lecturer and lab advisor, incl. manual preparation**).

Hahn, D. *In situ* analysis of *Frankia* populations in root nodules and soil. Workshop "Ecole doctorale en microbiologie: Biologie de l'extreme: en milieu alpine et en milieu marin", University of Geneva, Geneva, and Cantonale Institute of Microbiology, Bellinzona, Switzerland, August 2003 (**invited lecturer and lab advisor, incl. manual preparation**).

Hahn, D. *In situ* analysis of microbial populations. Workshop "Sediments and biofilms: *In situ* approach to limnic systems analysis", Swiss Federal Institute for Environmental Science and Technology, Limnological Research Center, Kastanienbaum, Switzerland, September 2001 (**invited lecturer and lab advisor, incl. manual preparation**).

Hahn, D. *In situ* analysis of microbial populations by whole cell hybridization. EAWAG and ETH course "Third advanced course in microbial ecology", Limnological Research Center, Kastanienbaum, Switzerland, August/September 1996 (**invited lecturer and lab advisor, incl. manual preparation**).

Hahn, D. *In situ* detection of mycelium and spores of Streptomycetes in soil. EERO course "Introduction of genetically modified organisms into the environment: biosafety aspects", Wageningen, The Netherlands, December 1991 (**invited lecturer**).

Hahn, D. Ribosomal RNA as marker molecule. PHLO course "Molecular detection and identification of microorganisms in natural and industrial systems", Wageningen, The Netherlands, September 1991 (in Dutch) (**invited lecturer**).

Hahn, D. Ribosomal RNA as target for *in situ* hybridization. Workshop "Identification and detection of microorganisms based on ribosomal RNA sequences", Ede, The Netherlands, June 1991 (**invited lecturer**).

5. Other
none

C. Grants and Contracts

1. Funded External Grants and Contracts

Edwards Aquifer Authority Evaluation of the trophic status and functional feeding group status of the comal springs riffle beetle (01/01/2016-12/31/2016, Co-PI, PI: W. Nowlin)

National Science Foundation (NSF) CC*IIE networking infrastructure: Enabling and improving data-driven research at Texas State University (09/01/2014-08/31/2016, Investigator, PI: X. Chen (Computer Sciences), other investigators: M.R.J. Forstner, S.F. McCracken, D. Rodriguez, Z. Zong (CS), L. Feng, Y.J. Lee, Y. Lu, T. Ekin, R.M. Musal, S. Sun)

United States Department of Agriculture (USDA) Science-based sustainable agriculture support at Texas State University (01/01/2013-08/31/2015, Co-PI, PI: H. Rahe (Agriculture), other Co-PI: M.R.J. Forstner)

Texas General Land Office Houston toad management during recovery and rebuilding activities for home-sites in the Bastrop Complex Fire zone (06/01/2013-05/30/2014, PI, Co-PI: J. Tomasso, Project Director: M.R.J. Forstner)

NRCS Houston toad management options during drainage restoration actions in Bastrop County (03/01/2013-02/28/2014, Co-PI, PI: J. Tomasso, Project Director: M.R.J. Forstner)

Inergy, Inc. Detecting occurrence of Houston toads in Colorado County with development of avoidance and minimization measures for pipeline operations (03/01/2013-06/30/2013, Co-PI, PI: R. Venumbaka, Project Director: M.R.J. Forstner)

Margret A. Cargill Foundation: Capacity development for systematic monitoring and integrated science for the TLS, Mekong and 3S rivers, Cambodia (01/01/2013-08/31/2014, Co-PI, PI: M.R.J. Forstner, other Co-PI: V. Elliott)

Williamson County Conservation Foundation: Detection of abundance, stress, and disease in the Jollyville Salamander (02/01/2013-08/30/2015, Co-PI, PI: M.R.J. Forstner, other Co-PI: J. Tomasso)

- Texas Department of Transportation (TxDOT):** Contribution of bridge dwelling birds to bacterial water quality impairments (09/01/2012-08/31/2014, Co-PI, PI: I. Castro-Arellano, other Co-PIs: C. Green, M.R.J. Forstner, C. Gaedicke (Technology))
- Fowler Family (Ecolab):** Vertebrates and vegetation along historic riparian corridors of Lone Man Creek (01/01/2012-12/31/2014, Co-PI, PI: MR.J. Forstner, other Co-PI: D. Lemke)
- Pier Family (Ecolab):** Vertebrates and vegetation along historic riparian corridors of Lone Man Creek (01/01/2012-12/31/2014, Co-PI, PI: M.R.J. Forstner, other Co-PI: D. Lemke)
- Texas Parks and Wildlife Department:** Testing habitat restoration options in the Houston toad (*Bufo houstonensis*) within the aftermath of the Bastrop County Fire Complex (08/01/2012-07/31/2015, Co-PI, PI: M.R.J. Forstner, other Co-PI: M. Jones)
- US Fish and Wildlife Service/Texas Department of Transportation (TxDOT):** Assessing connectivity and highway infrastructure permeability in the Houston toad (02/01/11-10/31/11, Co-PI, PI: M.R.J. Forstner)
- US Fish and Wildlife Service/Texas Department of Transportation (TxDOT):** Primary and secondary outcomes of fire ant management within Houston toad habitat (02/01/11-10/31/11, Co-PI, PI: M.R.J. Forstner)
- Texas Parks and Wildlife Department:** Houston toad (*Bufo houstonensis*) response to habitat recovery efforts, Bastrop State Park, Bastrop, Texas. (01/01/2011-08/31/2013, Co-PI, PI: M.R.J. Forstner)
- Texas Parks and Wildlife Department/US Fish and Wildlife Service:** Population supplementation: a proven means toward endangered species recovery for the Houston toad (09/01/10-08/31/12, Co-PI, PI: M.R.J. Forstner, other Co-PI: P. Crump)
- US Fish and Wildlife Service:** Range-wide Houston toad conservation *ex situ* operations. USFWS (01/01/11-12/31/12, Co-PI, PI: D. Hoth, other Co-PIs: P. Crump, M.R.J. Forstner)
- Texas Department of Transportation (TxDOT):** Evaluation, prevention and repair of microbial attacks on concrete (09/01/09-08/31/11) (Co-PI, PI: J. Hu, other Co-PIs: W. Rudzinski)
- Pakistani Commission of Higher Education:** Student Exchange Program Khadim Hussain (01/15/10-06/13/10) (PI)
- Utilities Houston Toad Conservation Committee (UHTCC):** Implementing and determining the effects of fire and other habitat manipulations on the Houston toad (*Bufo houstonensis*) and its sympatric faunal and floral community (01/06/08-05/31/13) (Co-PI, PI: M.R.J. Forstner, other Co-PIs: D. Wolfe, M. Snyder)
- US Department of Agriculture/Texas Parks and Wildlife Department:** Assessing Texas' freshwater turtles (02/01/08-01/31/13) (Co-PI, PI: M.R.J. Forstner, plus 13 other Co-PIs from different universities in Texas)
- Texas Parks and Wildlife Department/US Fish and Wildlife Service:** Lost Pines private land stewardship supporting high priority species integrating both *in situ* and *ex situ*

- conservation projects (01/01/08-12/31/10) (Co-PI, PI: P. Riger, other Co-PIs: M.R.J. Forstner, D. Wolfe, P. Crump, S. Mays)
- US Department of Agriculture/Texas Parks and Wildlife Department:** Freshwater turtle trends in the Rio Grande/Rio Bravo and Brazos basin evaluating abundance and bioaccumulation (09/01/07-12/31/09) (Co-PI, PI: R. Hudson, other Co-PIs: M.R.J. Forstner, M. Chumchal, R. Drenner, T. Rainwater)
- US Fish and Wildlife Service:** Preventing extinction: Houston toads (09/01/07-08/31/08) (Co-PI, PI: M.J.R. Forstner)
- Pakistani Commission of Higher Education:** Student Exchange Program Ghulam Rasul (06/01/07-05/31/08) (PI)
- River Systems Institute:** Serotyping of salmonellae isolated from turtles (02/01/07-01/31/08) (PI)
- Austin Community Foundation:** Monitoring salmonellae as indicators for non-point source pollution (06/01/2006-05/31/2007) (PI of this subproject) (PI: A. Zwarun, administered through Dept. Agriculture)
- Austin Community Foundation:** Development of a monitoring design for the amphibian pathogen Chytrid fungus (\$5,000, 1 year, 06/01/2006-05/31/2007) (PI of this subproject) (PI: A. Zwarun, administered through Dept. Agriculture)
- Austin Community Foundation:** Assessing effects of invasive plant species on structure and function of microbial communities, and consequences for restoration (\$6,500, 1 year, 06/01/2006-05/31/2007) (PI of this subproject) (PI: A. Zwarun, administered through Dept. Agriculture)
- Orion Research and Management Services:** Environmental quality assessment for aquatic species in the Texas Hill country with special emphasis on amphibians (\$8,600, 1.5 years, 01/09/05-12/31/06) (PI, Co-PI: M.R.J. Forstner)
- Austin Community Foundation:** Assessing effects of invasive plant species on structure and function of microbial communities, and consequences for restoration (\$6,500, 1 year, 06/01/2005-05/31/2006) (PI of this subproject) (PI: A. Zwarun, administered through Dept. Agriculture)
- Beckman-Coulter, Inc.:** Integrating genomics CE laboratory hardware and fluidics automation within undergraduate and graduate coursework in the Department of Biology, Texas State University-San Marcos (\$244,795, 2 years, 03/01/2005-11/01/2006) (PI: M.R.J. Forstner, Co-PIs: C. Nice, and D. Hahn)
- DoD STTR Phase II 02-002:** High resolution terahertz differential-absorption spectrometer (\$500,000, 2 years, 2004-2006) (PI: D. Zimdars, Picometrix, Inc.) (subcontracted to NJIT: \$250,000, 2 years, 2004-2006; PI: J. Federici, Physics, Co-PIs: R. Barat, Chemical Engineering, and D. Hahn)

Meadowlands Environmental Research Institute: Effect of heavy metals on interactions between vesicular arbuscular mycorrhizal fungi (AMF) and *Spartina patens* in a restored urban salt marsh of the Hackensack Meadowlands (2002-2003) (PI)

Chevron Environmental Management Company (through Dan Raviv Assoc.): Phytoremediation of PHC- and PAH-contaminated soils: A treatability study using *Spartina patens* (2001-2003) (PI)

New Jersey Commission of Science and Technology: New Jersey Center for Micro-Flow Control (MFC): Development of MFC system hardware for micro- and nano-scale separation for colloidal and biological systems (2000-2005) (Co-PI, PI: N. Aubry (NJIT)); Contribution (together with S. Mitra, Chemistry): Microchip design for the detection of food-borne pathogens

Meadowlands Environmental Research Institute: Automated image analysis as tool to analyze the impact of heavy metal availability on microbial communities in contaminated estuarine salt marshes (2000) (PI)

Swiss National Science Foundation, Priority program "Biotechnology": *In situ* characterization of microbial structures and functions by whole cell hybridization (Co-PI)

Federal Office of Environment, Forests and Landscape (BUWAL) and Cantonal Office of Chemistry Basel: Quantification of microorganisms in heterogeneous environment by automated image analysis (Co-PI)

EU priority program IV, co-ordinated project HRAMI-2: *In situ* analysis of the community structure of toluene and *m*-xylene degrading, denitrifying bacteria in a Diesel oil contaminated aquifer (Co-PI)

Federal Office of Environment, Forests and Landscape (BUWAL): Development of detection protocols for recombinant and indigenous microorganisms in soil (1993-95) (Co-PI)

ETH Research Foundation: *In situ* analysis of bacterial populations and processes in the gut of the earthworm *Lumbricus terrestris* (1993-95) (Co-PI)

Swiss National Science Foundation, Priority program "biotechnology": Detection of nucleic acids in heterogeneous environmental systems (1993-95) (Co-PI)

2. Submitted, but not Funded, External Grants and Contracts

n/a

3. Funded Internal Grants and Contracts

Research Enhancement Program (Texas State University-San Marcos): Diversity of *Frankia* populations in soil (01/01/11-12/31/11) (PI)

Research Enhancement Program (Texas State University-San Marcos): Monitoring the amphibian pathogen Chytrid fungus (02/01/07-01/31/08) (PI, Co-PI: M.J.R. Forstner)

Research Enhancement Program (Texas State University-San Marcos): Saprophytic growth of *Frankia* populations in soil (01/01/06-12/31/06) (PI)

Deans Excellence Funds at Rutgers: Biogeoscience Research Initiative (2004) (Earth & Environmental Science Department, Co-PIs: D. Hahn (Biology/NJIT), E. Hamerlynck (Biology), L. Slater (Earth & Environmental Science) and N. Yee (Earth & Environmental Science))

Separately Sponsored Research Program at NJIT: Effect of plant-microbe interactions on the fate of inorganic contaminants in urban salt marshes (2000-2001) (PI)

Separately Sponsored Research Program at NJIT: Changes in *nifH* gene pool diversity as a measure for soil quality and contamination (1999-2000) (PI)

4. Submitted, but not Funded, Internal Grants and Contracts

n/a

5. Fellowships, Awards, Honors

2008	Presidential Award for Excellence in Science/Scholarship (Associate professor) at Texas State University-San Marcos
2012	Presidential Award for Excellence in Science/Scholarship (Full professor) at Texas State University-San Marcos
2016	Distinguished Professor
2016	Regents' Professor

IV. SERVICE (since 2000)

A. University

Institutional Biosafety Committee, Texas State University (December 2007 – Fall 2013)

JAMP Committee, Texas State University (Fall 2005 – Fall 2013)

NJIT Honors College Faculty Council (September 2003 – August 2004)

NJIT Faculty Advisory Board of the Otto H. York Center for Environmental Engineering and Science (CEES) (Chair: D. Watts) (January 2000 – August 2004)

NJIT Environmental Studies and Sustainability Council (ESSC) (Chair: D. Watts) (January 2000 – August 2004)

NJIT Screening Committee for the position of Director of the Council on Environmental Studies
(Chair: W.C. Van Buskirk) (Spring 2000)

B. Department

Chair, Department of Biology (since Fall 2013)

Ph.D. Program Director, Aquatic Resources (Fall 2008 – Summer 2013)

Cell Biology Search Committee (Chair D. Garcia) (Fall 2010 - Spring 2011)

Wildlife Ecology/Conservation Biology Search Committee (Chair) (Fall 2007 - Spring 2008)

Texas State Mitte Chair Search Committee (Fall 2006 - Spring 2007)

Rutgers-Newark M.S. Biological Science Comprehensive Exam Committee (June 2006)

Texas State Biology Department Graduate Committee (since May 2005)

Texas State Biology Department Safety Committee (since May 2005)

Texas State Biology Department Greenhouse Committee (since August 2005)

Rutgers-Newark M.S. Biological Science Comprehensive Exam Committee (January 2006)

Rutgers-Newark M.S. Biological Science Comprehensive Exam Committee (May 2005)

Ph.D. Environmental Science Qualifying Exam Committee, NJIT (May 2005)

NJIT Biology undergraduate advising (Summer 2003 – August 2004, together with F. Nadim and J. Golowasch, NJIT, Department of Mathematics)

NJIT Chemical Engineering Undergraduate Curriculum Committee: working group “Chemical kinetics & reactor design, bioengineering, process dynamics & control, process & plant (& product?) design” (Spring 2003)

Rutgers Biological Science/Ecology Track Qualifying Exam Committee (Chair: E. Knox) (January 2000 – August 2004)

NJIT Chemistry Faculty Search Committee (Chair: S. Mitra) (Winter/Spring 2003)

Rutgers Biological Science/Ecology Faculty Search Committee (Chair: E. Bonder) (Winter/Spring 2003)

Rutgers Biological Science/Ecology Faculty Search Committee (Chair: E. Kirby) (Winter/Spring 2002)

NJIT Environmental Engineering Undergraduate Curriculum Committee (Chair: L. Axe) (January 2002 – August 2004)

NJIT Environmental Science Undergraduate Curriculum Committee (Chair: G. Miller Jonakeit) (Fall 2001/Spring 2002)

Rutgers Biological Science Undergraduate Curriculum Committee (Chair: G. Miller Jonakeit) (Fall 2000)

C. Community

None

D. Professional

A. Peer reviewing activity (papers, books, proposals, panels, thesis, tenure/promotion)

Journals: About 20 manuscripts yr⁻¹: Applied and Environmental Microbiology; Archives of Microbiology; FEMS Microbiology Ecology; FEMS Microbiology Reviews; Systematic and Applied Microbiology; Soil Biology & Biochemistry; International Journal of Systematic Bacteriology; Plant and Soil; Microbiology; Molecular Ecology; European Journal of Soil Biology; Journal of Bacteriology; Bulletin of Environmental Contamination and Toxicology; Re/Views in Environmental Science and Bio/Technology

Proposals: National Science Foundation (Biology, Engineering); U.S. Environmental Protection Agency; Swiss National Science Foundation; Meadowlands Environmental Research Institute (MERI); SDE/GWIS (Sigma Delta Epsilon/Graduate Woman in Science), Israel Science Foundation (ISF), Texas Academy of Science, NSERC (Canada), DSM (Germany)

Panels: U.S. Environmental Protection Agency, Fellowship Program “Terrestrial Systems Ecology” (6-F6 and 6 F1, February 2006)

U.S. Environmental Protection Agency, Fellowship Program “Terrestrial Systems Ecology” (6-F6, March 2005)

NSF Bioengineering and Environmental Systems, SBIR/STTR phase 1, “Sensors 1” (04SB1BT-21, March 2004)

U.S. Environmental Protection Agency, Fellowship Program “Terrestrial Systems Ecology” (4-F4, February 2004)

B. Editorial Activity

1999-2007 **Editorial Board** “Applied and Environmental Microbiology” (re-appointed 2001 and 2004 for second and third 3-year term, 3-term limitation) (published monthly by the American Society for Microbiology [ASM], Washington, DC)

2001-2005 **Advisory Board** “Re/Views in Environmental Science and Bio/Technology” (published by Kluwer Academic Publisher)

2000-2010 **Executive Editor** “Aquatic Microbial Ecology” (published bi-monthly by Inter-Research, Oldendorf, Germany)

E. Organizations

1. Honorary

None

2. Professional

Since 1998 **American Society for Microbiology (ASM)**

Since 1996 **German Society for General and Applied Microbiology (VAAM)**

Since 1995 **International Society of Soil Science (ISSS)**