

Curriculum Vitae

Jamie Susan Foster

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University of Florida Space Life Sciences Lab
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Professional Preparation

University of Hawai'i, Honolulu	Ph.D.	Zoology	1996-2000
University of Southern California	M.S.	Biological Sciences	1993-1996
University of Massachusetts, Amherst	B.S.	Zoology	1988-1992

Professional Experience

2005 - present Assistant Professor, Department of Microbiology and Cell Science
University of Florida, Space Life Science Laboratory, Kennedy Space Center, FL

2004 - 2005 Postdoctoral Researcher, NASA Ames Research Center, Moffett Field, CA

2003 - 2004 Visiting Scholar, Purdue University, West Lafayette, IN

2001 - 2003 Postdoctoral Researcher, National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD

Peer-Reviewed Publications (27 total)

Students mentored in my lab: *high school; **undergraduate; ***graduate; ****postdoc

27. Khodadad****, C.K. and **J.S. Foster** (2011) Metagenomic and metabolic profiling of nonlithifying and lithifying microbial mats. *PLoS One* in prep.
26. **Foster, J.S.**, K.R. Kerney**, M.L. Parrish*, C.L.M. Khodadad****, and Ahrendt**, S.R., (2011) Potential of the *Euprymna/Vibrio* symbiosis as a model to assess the impact of microgravity on bacteria-induced animal development. *Gravitational and Space Biology* in review.
25. Mobberley***, J.M., M Ortega**, **JS Foster** (2011) Comparative diversity analyses of modern marine thrombolites by barcoded pyrosequencing. *Environmental Microbiology* in press.
24. **Foster, J.S.**, and N. Shiel-Rolle (2011) Building scientific literacy through summer science camps: a strategy for design, implementation and assessment. *Science Education International* 22:85-98.
23. **Foster, J.S.**, and S.J. Green (2011) Microbial diversity in modern marine stromatolites. In: *Cellular Origin, Life in Extreme Habitats and Astrobiology: Stromatolites* (Tewari, V. ed) Springer, in press.
22. Khodadad****, C.L.M., A.R. Zimmerman, S. Uthandi, S.J. Green, **J.S. Foster** (2011) Taxa-specific changes in soil microbial composition induced by pyrogenic carbon amendments. *Soil Biology and Biochemistry* 43: 385-392.
21. Reid, P., **J.S. Foster**, G. Radtke, S. Golubic (2010) Modern marine stromatolites of Little Darby Island, Exuma Archipelago, Bahamas: environmental setting, accretion mechanisms and role of euendoliths. In: *Advances in Stromatolite Geology*, (Reitner, J; Thrauth, M.H.; Stüwe, K.; Yuen, D., Eds.) Springer, Berlin, pp. 77 - 90.
20. Myshrall***, K.L., J.M. Mobberley***, S.A. Havemann****, S.J. Green, P.T. Visscher, R.P. Reid, and **J.S. Foster** (2010) Biogeochemical cycling and microbial diversity in the modern marine thrombolites of Highborne Cay, Bahamas. *Geobiology*: 8(4):337-354
19. **Foster, J.S.** and J.M. Mobberley*** (2010) Past, present, and future: microbial mats as models for astrobiological research. In: *Cellular Origin, Life in Extreme Habitats and Astrobiology: Microbial Mats: Modern and Ancient Microorganisms in Stratified Systems*. (J. Seckbach and A. Oren, eds.) Springer, Berlin pp. 563-582.
18. **Foster, J.S.**, S.J. Green, S.R. Ahrendt**, S. Golubic, R.P. Reid, K.L. Hetherington, and L. Bebout. (2009) Molecular and morphological characterization of cyanobacterial diversity in the

- marine stromatolites of Highborne Cay, Bahamas. *ISME Journal* 3: 573-587.
17. **Foster, J.S.**, and Drew, J.C. (2009). Astrobiology undergraduate education: students' knowledge and perceptions of the field. *Astrobiology* 9: 325-333.
 16. Stolz, J.F., R.P. Reid, P.T. Visscher, A.W. Decho, R.S. Norman, R.J. Aspden, E.M. Bowlin, J. Franks, **J.S. Foster**, D.M. Paterson, K.M. Przekop, G.J.C. Underwood, and L. Prufert-Bebout (2009) The microbial communities of the modern marine stromatolites at Highborne Cay, Bahamas. *Atoll Research Bulletin* 567:1-24
 15. **Foster, J.S.**, S.A. Havemann****, A. Singh, and L.A. Sherman (2009) Role of *mrgA* in peroxide and light stress in the cyanobacterium *Synechocystis* sp. PCC 6803. *FEMS Microbiology Letters* 293:298-304.
 14. **Foster, J.S.** and S.A. Havemann**** (2008). The basics of educational podcasting: enhancing the student learning experience. University of Florida, *IFAS EDIS publication* MB004
<http://edis.ifas.ufl.edu/MB004>
 13. Havemann****, S. A. and **J. S. Foster** (2008) A comparative characterization of the microbial diversity in an artificial microbialite model and a natural stromatolite. *Applied Environmental Microbiology* 74: 7410-7421.
 12. Donachie, S., **J. Foster**, and M. Brown (2007) Culture clash: Challenging the dogma of microbial diversity. *ISME Journal* 1: 97-102.
 11. **Foster, J.S.**, A.K. Singh, L.J. Rothschild and L.A. Sherman (2007) Growth-phase dependent differential gene expression in *Synechocystis* sp. strain PCC 6803 and regulation by a group 2 sigma factor. *Archives of Microbiology* 187(4): 265-79.
 10. **Foster, J.S.** and P.E. Kolenbrander (2004) Development of a multi-species oral bacterial community in a saliva-conditioned flowcell. *Applied and Environmental Microbiology* 70(7): 4340-8.
 9. **Foster J.S.**, P.C. Pan, and P.E. Kolenbrander (2004) Effects of antimicrobial agents on oral biofilms in a saliva-coated flowcell. *Biofilms*1:3-10.
 8. **Foster, J.S.**, R.J. Palmer Jr., and P.E. Kolenbrander (2003) The human oral cavity as a model for the study of genome-genome interactions. *Biological Bulletin*. 204:200-204.
 7. Kolenbrander, P.E., R.F. Lerud, D.S. Blehert, P.G. Eglund, **J.S. Foster**, and R.J. Palmer, Jr. (2003) The role of coaggregation in oral biofilm formation. In: *Biofilms in Medicine, Industry and Environmental Biotechnology*. Eds. P. Lens, A.P. Moran, T. Mahony, P. Stoodley, V. O'Flaherty. IWA Publishing, London. pp. 32-46.
 6. Kolenbrander, P. E., R.A. Anderson, D.S. Blehert, P.G. Eglund, **J.S. Foster**, and R.J. Palmer Jr. (2002) Communication among oral bacteria. *Microbiology and Molecular Biology Reviews*. 66:486-505.
 5. **Foster, J.S.**, S. von Boletsky, and M.J. McFall-Ngai (2002) A comparison of light organ development between *Euprymna scolopes* Berry and *Sepiolo robusta* Naef (cephalopod:sepiolidae). *Bulletin of Marine Science*. 70:141-153.
 4. **Foster, J.S.**, M.A. Apicella, and M.J. McFall-Ngai (2000) *Vibrio fischeri* lipopolysaccharide induces developmental apoptosis but not complete morphogenesis of the *Euprymna scolopes* light organ. *Developmental Biology*. 226:242-254.
 3. Visick, K.L., **J.S. Foster**, J.A. Doyno, M.J., McFall-Ngai, and E.G. Ruby (2000) *Vibrio fischeri lux* genes play an important role in colonization and development of the host light organ. *Journal of Bacteriology*. 182:4578-4586.
 2. **Foster, J.S.** and M.J. McFall-Ngai (1998) Induction of apoptosis by cooperative bacteria in the morphogenesis of host epithelial tissues. *Development Genes and Evolution* .208:295-303
 1. Doran, P., Wharton Jr., R.A., S.A. Spaulding and **J.S. Foster** (1994) Paleolimnology of Taylor Valley, Antarctica. *Antarctic Journal of the United States*. 29:234-239

Research Funding Awards (Past Five Years)

Project Title: *Molecular and metabolic mechanisms of carbon sequestration in marine thrombolites*

Source: NASA Graduate Student Researchers Program

Role: Principal Investigator

Total Award Amount: \$90,000

Effective Dates of Grant: 08/15/10 – 08/14/13

Project Title: *Effects of microgravity on the development of animal-bacterial symbioses*

Source: Florida Space Grant Consortium

Role: Principal Investigator

Total Award Amount: \$5,000

Effective dates of grant: 11/1/10 – 10/31/2011

Project Title: *Molecular and metabolic analyses of thrombotic mats*

Funding Agency: NASA: Exobiology and Evolutionary Biology

Role: Principal Investigator

Total Award Amount: \$99,988

Effective Dates of Grant: 9/1/2009 – 8/31/2011

Project Title: *Integrating research-based activities into distance education courses using reusable learning objects and podcasting*

Source: University of Florida College of Agricultural and Life Sciences

Role: Principal Investigator

Total Award Amount: \$4,000

Effective Dates of Grant: 09/1/10 – 04/30/11

Project Title: *Optimizing carbon sequestration with environmental manipulations of modern microbialites*

Funding Agency: Florida Space Grant Consortium

Role: Principal Investigator;

Total Award Amount: \$25,000

Effective Dates of Grant: 10/1/2009 – 3/31/2011

Project Title: *Effects of environmental flux on carbonate biomineralization in marine microbialitic mats.*

Funding Agency: IFAS Innovation Fund

Role: Principal Investigator

Total Award Amount: \$47,000

Effective Dates of Grant: 10/1/2009 – 9/30/2010

Project Title: *Modeling microbial carbonate precipitation in simulated environmental conditions*

Funding Source: ICBR Space Biology

Role: Principal Investigator

Total Award Amount: \$3,317

Effective Dates of Grant: 01/15/2009 – 5/30/2009

Project Title: *Microbial Mats, Solar Radiation and the Molecular Response*

Funding Agency: Florida Space Grant Consortium

Role: Principal Investigator

Total Award Amount: \$25,000

Effective Dates of Grant: 8/14/2007 – 8/14/2009

Education Related Activities (Past Five Years)

- Generated a three-part series of reusable learning objects entitled “Introduction to Microbial Diversity” that includes a hands-on practical demonstration for using modern phylogenetic tools.
- Developed and implemented curriculum for international stromatolite and science camp in the Bahamas for low-income students.
- Developing Astrobiology Podcasts for UF undergraduates <http://jamiefosterscience.com/education.html>
- Served as a research mentor for summer NSF Research Experiences for Undergraduates program, Space Florida Internship program, NASA Ames High School Apprenticeship Research Program (SHARP), NASA Motivating Undergraduates in Science and Technology; and NASA Planetary Biology

Internship.

- Created and taught Astrobiology course for undergraduate students at UF (2007 - present)
- Hosted and organized the session: “Astrobiology: Pushing life to the limits” for the 2006 American Society for Microbiology General Meeting

Ad Hoc Reviewer for Scientific Journals

Advances in Space Research, Astrobiology, Environmental Microbiology, Geobiology, Harmful Algae, Journal of Experimental Marine Biology and Ecology; Journal of Photochemistry and Photobiology B: Biology; Microbial Ecology; Vie et Milieu.

Reviewer for Granting Agencies

National Science Foundation, NASA, Florida Space Grant Consortium

Collaborators & Other Affiliations

• Collaborators (Past Five Years)

L. Bebout (NASA-Ames), A. Decho (University of South Carolina), S. Donachie (University of Hawai’i), J. Drew (University of Florida), S. Golubic (Boston University), S.J. Green (Florida State University), A. Singh (Washington University), P. Reid (University of Miami), L. Sherman (Purdue University), P.T. Visscher (University of Connecticut).

• Graduate Advisors and Postdoctoral Sponsors

Margaret McFall-Ngai (University of Wisconsin; formerly University of Hawai’i)
Paul E. Kolenbrander (NIH - NIDCR),
Lynn J. Rothschild (NASA Ames Research Center)

• Thesis Advisor and Postgraduate-Scholar Sponsor

Graduate Students (5 total): Jennifer Mobberley, University of Florida, Ph.D. 2013; Angelo Karavolos, Ph.D. 2012; Matoya Robinson, University of Florida, M.S. 2007; Kristin Myshrall, University of Connecticut, Ph.D. 2011 (summer intern); Varun Paul, Missouri University of Science and Technology, Ph.D. 2012 (summer NASA Planetary Biology Intern).

Postgraduate- Scholars (2 total): Christina Khodadad, University of Florida, 2008 – present; Stephanie Havemann, Bayside High School, Palm Bay, FL, 2007 – 2008.

Mentored Undergraduates: (5 total)

Mentored High School Students (2 total):