

**Sandra M. Buerger, Ph.D.**

**Email:** [sbuerger@partners.org](mailto:sbuerger@partners.org)

**Lecturer, Prerequisites for the Health Professions, Center for Interprofessional Studies and Innovation**

Dr. Buerger has a research background in Microbiology. She received her Ph.D. from Northeastern University, where she conducted research in the Epstein Lab. Her focus was on the cultivation of novel species, microbial survival strategies in the environment, microbial dormancy, and growth induction. She examined the growth patterns of marine microorganisms, the involvement of signaling or other molecules in inducing and enhancing growth and the isolation of novel microorganisms. She has also developed single-cell based approaches to examine microbial individuality. She examined growth induction of dormant mycobacteria via observations of growth kinetics, and followed the growth inducing activity via bioassay-guided fractionation, HPLC, LC/MS, and NMR (in collaboration with J. Clardy, Harvard University Medical School). She is currently examining trends in historical tuberculosis infection rates, as well as historical trends in pathology, etiology and epidemiology of diseases.

In addition to her research interests, Dr. Buerger is also very interested in STEM education trends, including problem-based and project-based learning, maximizing learning outcomes in the online environment, as well as career development for undergraduate students and graduate students in the STEM fields. She has taught classes both in the traditional classroom and online in Introductory Biology, Microbiology, Environmental Science/Ecology and on the social impact and interpretation of science by society.

**Education**

PhD, Northeastern University, Boston, MA

BA, Boston University, Boston, MA

**Research Interests:**

Communication and survival strategies in environmental microbial communities, dormancy in medically relevant microbes, and trends in bacterial infections.

**Selected Publications and Presentations**

**Buerger S, Spoering A, Gavriš E, Leslin C, Ling L, Epstein SS. (2012) Microbial scout hypothesis, stochastic exit from dormancy, and the nature of slow growers. Applied and Environmental Microbiology. 78:9.**

**Buerger S**, Spoering A, Gavrish E, Leslin C, Ling C, Epstein SS. (2012). Microbial scout hypothesis and microbial discovery. *Applied and Environmental Microbiology*. 78:9.

Shoja M, Tubbs R, D'Antoni A, Loukas A, **Buerger S** (Eds). (*in preparation- target date May 2015*) *A Guide to the Scientific Career: Communication, Conducting Research and Writing Effective Papers*. Wiley.

**Buerger S** (2014) "Aligning Expectations Between Community College Life Sciences Programs and Life Sciences Companies." Talk at Breakout Session: Mass STEM Summit: Worcester, MA.

**Buerger S** (2013) "Mycobacterium: Patterns of Dormancy and Growth." Talk at Boston University College of General Studies Faculty Talks: Boston, MA.

**Buerger S**, Crawford J, Gavrish E, Clardy J, Epstein SS (2010) Microbial survival strategy may include stochastic exit from dormancy. ASM 2010: San Diego, CA and BBM 2010: Boston, MA (poster presentation).

**Buerger S**, Hong S, Lucey K, Epstein SS (2008) Single-cell approach to microbial cultivation reveals an unusual growth strategy. ISME 2008: Cairns, Australia (poster presentation).

**Buerger S**, Nichols D, Lewis K, Epstein SS (2006) Marine Microbial Consortia as model systems to study the great plate count anomaly. ISME 2006: Vienna, Austria (poster presentation).