

# BRITTANY M. BERDY

## Education and Awards

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**Ph.D., Biology** – Northeastern University – Boston, MA

May 2017

Awards: College of Science Dean's Award for Graduate Student Excellence in Leadership (2016)

**M.S., Biology** – Northeastern University – Boston, MA

June 2014

**B.A., Biology (*summa cum laude*)** – Skidmore College – Saratoga Springs, NY

May 2010, GPA 3.94

Awards: Dowd-Lester Award: Outstanding Biology Major (2010), Phi Beta Kappa (2010), Periclean Honors Society (2010), Department Honors and Highest Honors (2010)

## Skills

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### Instrumentation

Light and fluorescence microscopy, confocal microscopy, electron microscopy (transmission and scanning), microplate readers, thermocyclers, MALDI-TOF (Bruker MALDI Biotyper), spectrophotometers, microtomes

### Lab Skills

Experimental design, bacteria cultivation using standard and newly developed approaches, designing of new cultivation devices, isolation of bacteria from complex cultures, DNA isolation and purification, PCR techniques, gel electrophoresis, southern blotting, cloning and transformation, differential staining techniques, DNA sequence analysis

### Computer

Microsoft Office, Open Office, Apple iWorks, Adobe Photoshop, CometScore, Spartan '08, Geneious, ImageJ, PAST3, FigTree, FinchTV, MEGA, Minitab, WordPress

### Teaching

Curriculum design and development, laboratory instruction, online teaching platforms

## Highlighted Experience

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**LABORATORY OPERATIONS MANAGER** - Epstein Lab, Northeastern Univ. - Boston, MA – 2015 - 2017

- Oversee laboratory operations including coordination and review of business with other administrative offices
- Monitor and manage lab safety including preparation and maintenance of standard operating procedures, laboratory safety practices, and documents
- Administer proper safety training to all employees and ensure employees remain up to date
- Ensure all laboratory documents, protocols, and projects are registered and in compliance with university EHS policies and guidelines
- Manage biohazard and chemical waste for the lab
- Developed and maintain lab website
- Sole person in charge of purchasing all lab supplies, maintaining vendor relations, and providing oversight for equipment repair

## **RESEARCH ASSISTANT - Epstein Lab, Northeastern Univ. - Boston, MA – 2011 - 2017**

- Current project: design, development, and optimization of novel cultivation device to achieve microbial cultivation and isolation in a single step
- Consult on projects with other departments, Universities, and companies to provide expertise in areas of microbial cultivation
- Utilization, design, and implementation of novel cultivation approaches
- Studied the composition of an Arctic sediment microbial community by examining the overlap and success of culture-independent vs. cultivation approaches
- Development of a vast culture collection containing over 1000 isolates, obtained from a variety of environments, using standard and innovative in-situ cultivation approaches
- Phylogenetic analysis of organisms using 16s rRNA gene sequencing
- Analysis of large genomic datasets from Illumina sequencing
- Coordinated and organized establishment of a temporary lab space abroad in a remote area of the Arctic. This required working with the USDA, NSF, and the associated CH2M Hill Polar Service Team to ensure all guidelines, permits, and protocols were in place and that lab operations could occur safely and effectively in Greenland
- Trained and mentored undergraduates and exchange students in laboratory techniques and experimental design

## **INSTRUCTOR FOR MICROBIOLOGY (ONLINE) – Mass. General Hospital, Institute of Health Professionals - Boston, MA – 2013 - Present**

- Assisted head instructor in curriculum design and maintenance
- Facilitated online discussion boards
- Grading of quizzes, exams, papers, and discussion boards

## **LABORATORY ASSISTANT – Anatomic Pathology, Tri-Institutional Laboratory of Comparative Pathology, Memorial Sloan Kettering Cancer Center – New York, NY - Jun 2010 – January 2011**

- Assisted with routine tests including blood sampling, anal swabs, and necropsies on lab animals ranging from mice to pigs, from three surrounding institutions

## **COLLABORATIVE RESEARCH – Dr. Corey Freeman-Gallant, Skidmore College – Saratoga Springs, NY - 2008 – 2010**

- Studied the effect of oxidative stress on sexual signaling in the Common Yellowthroat
- Developed standardized procedures for use of single cell gel electrophoresis to analyze oxidative stress
- Investigated loci for used in paternity analysis in birds

## **Publications and Presentations**

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**Berdy, B.,** Spoering, A., Ling, L., & Epstein, S. 2017. The ichip, a cultivation platform for isolation of previously uncultivable microorganisms. *Nature Protocols*. Accepted

Kim, S., De Jonghe, D., Kuelsa, A., Feldman, D., Vatanen, T., Bhattacharyya, R., **Berdy, B.,** Gomez, J., Nolan, J., Epstein, S., & Blainey, P. 2017. High throughput Automated Microfluidic Sample Preparation for Microbial Genomics. *Nature Communications*. 8.

**Brittany Berdy,** Dawoon Jung, Manny Torralba, Slava Epstein, Karen Nelson. (2014) “Microbial Dynamics in Thule.” Talk at Thule Airbase: Thule, Greenland (main speaker)

Sebastian Doerfert\*, **Brittany Berdy\***, Eva Wunschel, Maria Sizova, Josh Timmons, Dawoon Jung, Gary Kruppa, Slava Epstein. (2014) MALDI-TOF applications for dereplication and identification of environmental microorganisms isolated from Thule,

Greenland. Boston Bacterial Meeting 2014: MA (poster presentation).

**Berdy B**, Buerger S, Sousa A, Edson E, Halligan K, Ling L, Spoering S, Epstein SS. (2013) Bacterial slow growth – a common survival strategy? Boston Bacterial Meeting 2013: Boston, MA (poster presentation).

**Berdy B**, Buerger S, Sousa A, Edson E, Halligan K, Ling L, Spoering S, Epstein SS. (2013) Do Slow Growers Exist? RISE 2013: Boston, MA and American Society of Microbiology General Meeting 2013: Denver, CO (poster presentation).

Freeman-Gallant, C., Amidon, J., **Berdy, B.**, Wein, S., Taff, C. & Hausmann, M. F. 2011. Oxidative damage to DNA related to survivorship and carotenoid-based sexual ornamentation in the common yellowthroat. *Biol. Lett.* Published online before print January 19, 2011. (doi:10.1098/rsbl.2010.1186)

## Leadership Experience

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**President/Co-founder** – Biology Graduate Student Association, Northeastern Univ. - Boston, MA 2014-2016

- Organized Career Development Panels to help PhD students interact with various professionals and answer questions on pursuing multiple career options in the Science field
- Helped organize and host a College-wide Career Development Seminar 3-Part Series (by Propel Careers)

**Ph.D. Student Council Representative** - Northeastern Univ. - Boston, MA 2014-2016

**President of Graduate Biology Club** – Northeastern University – Boston, MA 2013-2014

**European Career Fair organizing committee** - MIT - Cambridge, MA 2012-2013

- Solicited companies and vendors to participate in the fair
- Helped design and construct the advertisement booklet for all final participating companies and vendors

**Academic Council** – Skidmore College – Saratoga Springs, NY 2009-2010