Amber Nicole Bible
Biosciences Division
Oak Ridge National Laboratory, Building 1061
P.O. Box 2008, Mail Stop 6445
Oak Ridge, TN 37831-6445
(865) 574-6739
biblean@ornl.gov

Professional Preparation

- University of Tennessee, Knoxville. Bachelor of Sciences in Biology with a concentration in Biochemistry, Cellular, and Molecular Biology. 2004.
- University of Tennessee, Knoxville. Doctor of Philosophy in Biochemistry, Cellular, and Molecular Biology. 2012.
- Oak Ridge National Laboratory. Post-doctoral research associate. Biosciences Division. 2012 – present.

Appointments

- 2016 – present: Research Associate, University of Tennessee, Knoxville.
    - Mentors: Dr. Gladys Alexandre and Dr. Jennifer Morrell-Falvey
    - Position is a continuation of my postdoctoral research at Oak Ridge National Laboratory.
- 2012 – 2015: Postdoctoral Research Associate, Oak Ridge National Laboratory.
    - Mentor: Dr. Jennifer Morrell-Falvey
    - Research in the Plant-Microbe Interfaces Scientific Focus Area studying the bacterial organism *Pantoea* sp. YR343 and the underlying mechanisms that govern root colonization of *Populus deltoides*
- 2005-2012: Graduate Research Assistant, University of Tennessee, Knoxville.
    - Mentor: Dr. Gladys Alexandre
    - Thesis: "Characterization of the function of the *Azospirillum brasilense* Che1 chemotaxis pathway in the regulation of chemotaxis, cell length, and clumping."
- My research interests are primarily in the area of plant-associated bacteria. I am fascinated by the multitude of interactions that take place between plants and microbes within the rhizosphere which can have significant effects on how plants grow. As a graduate student, I studied chemotaxis, as well as other behaviors, in *Azospirillum brasilense*, a microbe that has been shown to colonize the root surface of wheat. During my career as a post-doctoral research associate, I have worked with the non-model organism, *Pantoea* sp. YR343, a microbe isolated from the rhizosphere of *Populus deltoides*. My project has focused primarily on discerning the underlying mechanism(s) that govern root colonization by bacteria. My experiences as a graduate student, as well as a post-doctoral researcher, have provided an excellent platform from which to continue my studies in the field of plant-microbe interactions.

Conferences

- **Bible AN**, Alexandre G. "Characterization of an unusual chemotaxis histidine kinase, CheA, in *Azospirillum brasilense*." Poster presentation. Gordon Research Conference (Sensory Transduction in Microorganisms or STIM). January 2008.
- **Bible AN**, Alexandre G. "Function of unique domains of CheA1 from A. Brasilense in regulating multiple cellular behaviors." Poster presentation. BLAST X Conference (Bacterial Locomotion and Sensory Transduction) January 2009.
- **Bible AN**, Xie Z, Purschke F, Alexandre G. "Function of multiple chemotaxis-like pathways in mediating changes in motility patterns and cellular morphology in *Azospirillum brasilense*." Oral presentation. BLAST X Conference, January 2009.
- **Bible AN**, Alexandre G. "Modulation of clumping behavior by a chemotaxis-like pathway (Che1) in the alphaproteobacterium, *Azospirillum brasilense*." Poster presentation. Gordon Research Conference (STIM). January 2010.
- **Bible AN**, Alexandre G. "Modulation of clumping and flocculation behavior by a chemotaxis-like pathway (Che1) in the alphaproteobacterium, *Azospirillum brasilense*." Poster presentation. BLAST XI, January 2011.
- **Bible AN**, Melton SJ, Morrell-Falvey J, Pelletier D, Doktycz M. "Elucidating the roles of diguanylate cyclases in root colonization and biofilm formation by *Pantoea* YR343." Poster presentation. Gordon Research Conference (STIM), January 2014.
- **Bible AN**, Chang M, Morrell-Falvey J. "The flagellar biosynthetic protein, FliR, affects colony morphology and biofilm production in the soil bacterium, *Pantoea* YR343." Poster presentation. BLAST XIII, January 2015.
- **Bible AN**, Morrell-Falvey J. "A mutant lacking FliR, a component of the flagellar export apparatus, exhibits defects in flagellar biosynthesis and exopolysaccharide production that are overcome by modulating cyclic di-GMP levels." Poster presentation. BLAST XIV, January 2017.

Publications

- Fernando R, Foster JS, **Bible A**, Ström A, Pestell RG, Rao M, Saxton A, Baek SJ, Yamaguchi K, Donnell R, Cekanova M, Wimalasena J. "Breast cancer cell proliferation is inhibited by BAD: regulation of cyclin D1." *Journal of Biological Chemistry*. 2007. 282 (39): 28864-73.
- **Bible AN**, Stephens BB, Ortega DR, Xie Z, Alexandre G. "Function of a chemotaxis-like signal transduction pathway in modulating motility, cell clumping, and cell length in the alphaproteobacterium *Azospirillum brasilense*." *Journal of Bacteriology*. 2008. 190 (19): 6365-75. Cover photo.
- Wasim M, **Bible AN**, Xie Z, Alexandre G. "Alkyl hydroperoxide reductase has a role in oxidative stress resistance and in modulating changes in cell surface properties in *Azospirillum brasilense* Sp245." *Microbiology*. 2009. 155 (Pt. 4): 1192-202.
- Edwards AN, Siuti P, **Bible AN**, Alexandre G, Retterer ST, Doktycz MJ, Morrell-Falvey JL. "Characterization of cell surface and extracellular matrix remodeling of *Azospirillum brasilense* chemotaxis-like 1 signal transduction pathway mutants by atomic force microscopy." *FEMS Microbiology Letters*. 2011. 314 (2): 131-9.

- **Bible A**, Russell MH, Alexandre G. ""The *Azospirillum brasilense* Che1 chemotaxis pathway controls swimming velocity, which affects transient cell-to-cell clumping." *Journal of Bacteriology*. 2012. 194 (13): 3343-55.
- Jing X, Wright E, **Bible AN**, Peterson CB, Alexandre G, Bruce BD, Serpersu EH. "Thermodynamic characterization of a thermostable antibiotic resistance enzyme, the aminoglycoside nucleotidyltransferase (4')." *Biochemistry*. 2012. 51 (45): 9147-55. Correction published in 2015. 54 (32): 5120.
- Qi X, Nellas RB, Byrn MW, Russell MH, **Bible AN**, Alexandre G, Shen T. "Swimming motility plays a key role in the stochastic dynamics of cell clumping." *Physical Biology*. 2013. 10 (2): 026005.
- Russell MH, **Bible AN**, Fang X, Gooding JR, Campagna SR, Gomelsky M, Alexandre G. "Integration of the second messenger c-di-GMP into the chemotactic signaling pathway." *mBio*. 2013. 4 (2): e00001-13.
- **Bible AN**, Khalsa-Moyers GK, Mukherjee T, Green CS, Mishra P, Purcell A, Aksenova A, Hurst GB, Alexandre G. "Metabolic adaptations of Azospirillum brasilense to oxygen stress by cell-cell clumping and flocculation." *Applied and Environmental Microbiology*. 2015. 81(24): 8346-8357.
- Polisetti S, **Bible AN**, Morrell-Falvey JL, Bohn PW. Raman chemical imaging of the rhizosphere bacterium *Pantoea* sp. YR343 and its co-culture with *Arabidopsis thaliana*. *Analyst*. 2016. 141 (7): 2175-2182.
- **Bible AN**, Fletcher SJ, Pelletier DA, Schadt CW, Jawdy SS, Weston DJ, Engle NL, Tschaplinski TJ, Masyuko R, Polisetti S, Bohn PW, Coutinho TA, Doktycz MJ, Morrell-Falvey JL. A carotenoid-deficient mutant in *Pantoea* sp. YR343, a bacteria isolated from the rhizosphere of *Populus deltoides*, is defective in root colonization. *Frontiers in Microbiology*. 2016. doi: 10.3389/fmicb.2016.00491
- Hansen RH, Timm AC, Timm CM, **Bible AN**, Morrell-Falvey JL, et al. (2016) Stochastic Assembly of Bacteria in Microwell Arrays Reveals the Importance of Confinement in Community Development. *PLOS ONE* 11(5): e0155080. https://doi.org/10.1371/journal.pone.0155080
- Gullet JM, **Bible AN**, Alexandre G. (2017) Distinct domains confer CheA with unique functions in chemotaxis and cell length in *Azospirillum brasilense* Sp7. *Journal of Bacteriology*. JB.00189-17. doi: 10.1128/JB.00189-17.

Synergistic activities

- Supervision of high school and undergraduate students in lab projects.
- Involvement with ASPIRE ("Aspiring students participating in research and education") through NSF with Dr. Gladys Alexandre (2011).
- Alexander Hollaender Graduate Fellowship (Spring 2009 Winner)
- Graduate student recruitment (2007-2009), member of BCMB recruiting committee (Spring 2010).
- PEER Program Graduate Student Mentor (Fall 2009 – Spring 2010).
- Discussion Leader, "Transcriptional Regulation, Two Component Systems and Phosphorelays". Gordon Research Seminar, January 2014.
- Poster Judge for BCMB/GST retreat (Spring 2015 and Spring 2017).