

Alecia N. Septer

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Disciplinary Fields

Microbiology, Host-Microbe Interactions, Bacterial Physiology and Gene Regulation, Inter-cellular Communication, Molecular Biology, Genetics and Genomics

Educational Background

The Ohio State University, Columbus, Ohio

Microbiology

B.S. 2004

University of Georgia, Athens, GA

Microbiology

Ph.D. 2012

Professional Positions

2015- Assistant Professor, Dep. of Marine Sciences, Univ. of North Carolina

2014-2015 Postdoctoral Fellow, Dep. of Microbiology & Immunology, UNC Chapel Hill

2012-2014 Postdoctoral Fellow, Dep. of Molecular & Cellular Biology, Harvard University

Selected Honors and Awards

2013-2015 Gordon and Betty Moore Foundation Life Sciences Research Foundation
Postdoctoral Fellowship

2010-2012 Achievement Awards for College Scientists (ARCS) Foundation Fellowship

2008-2011 National Defense Science and Engineering Graduate Fellowship

Selected Publications

1. L Speare, A Cecere, K Guckes, S Smith, M Mandel, M Wollenberg, T Miyashiro, and **AN Septer**. Bacterial symbionts use a type VI secretion system to eliminate competitors in their natural host. *PNAS*. (36) E8528-E8537. (2018)
2. NL Lyell, **AN Septer**, AK Dunn, D Duckett, JL Stoudenmire, EV Stabb. An expanded transposon-mutant library reveals that *Vibrio fischeri* δ -aminolevulinate auxotrophs can colonize *Euprymna scolopes*. *Applied and Environmental Microbiology*. doi: 10.1128/AEM.02470-16 (2017)
3. **AN Septer**, JL Bose, A Lipzen, J Martin, CA Whistler, and EV Stabb. Bright luminescence of *Vibrio fischeri* aconitase mutants reveals a connection between citrate and the Gac/Csr regulatory system. *Molecular Microbiology*. (2015)
4. LM Wenren, N Sullivan, L Cardarelli, **AN Septer**, and KA Gibbs. Two independent pathways for self recognition in *Proteus mirabilis* are linked by type VI-dependent export. *mBio*. vol. 4 no. 4 e00374-13. (2013)
5. **AN Septer**, NL Lyell, and EV Stabb. The iron-dependent regulator Fur controls pheromone-signaling and luminescence in the squid symbiont *Vibrio fischeri* ES114. *Applied and Environmental Microbiology*. vol. 79 no. 6 1826-1834. (2013)
6. **AN Septer** and EV Stabb. Coordination of the Arc regulatory system and pheromone-mediated positive feedback in controlling the *Vibrio fischeri* *lux* operon. *PLOS ONE*. vol 7, issue 1; e49590. (2012)
7. **AN Septer**, Y Wang, EG Ruby, EV Stabb, and AK Dunn. The haem-uptake gene cluster in *Vibrio fischeri* is regulated by Fur and contributes to symbiotic colonization. *Environmental Microbiology*. 13(11)2855-2864. (2011)
8. **AN Septer**, JL Bose, AK Dunn, and EV Stabb. FNR-mediated regulation of bioluminescence and anaerobic respiration in the light-organ symbiont *Vibrio fischeri*. *FEMS Microbiology Letters*. 306:72-81. (2010)

9. M Merighi, **AN Septer***, A Carroll-Portillo, A Bhatiya, S Porwollik, M McClelland, JS Gunn. Genome-wide analysis of the PreA/PreB (QseB/QseC) regulon of *Salmonella enterica* serovar Typhimurium. *BMC Microbiol.* 9:42. (2009) (* **Indicates co-first authorship**)
10. M Merighi, A Carroll-Portillo, **AN Septer**, A Bhatiya, and JS Gunn. Role of *Salmonella enterica* Serovar Typhimurium Two-Component System PreA/PreB in Modulating PmrA-Regulated Gene Transcription. *J. Bacteriol.* 188:141-149. (2006)

Selected Oral Presentations († Indicates UNC undergraduate researcher)

1. **AN Septer**. Bacterial symbionts use a type VI secretion system to compete for host colonization sites. University of Georgia, Athens, GA. Department of Microbiology Distinguished alumni seminar series. November 29, 2019. **Invited by graduate students.**
2. **AN Septer**. Bacterial symbionts use a type VI secretion system to compete for host colonization sites. Loyola University Medical Center, Maywood, IL. Department of Microbiology and Immunology. November 15, 2019. **Invited talk.**
3. S Smith, L Speare, A Garikipati†, **AN Septer**. Self-regulation of the type VI secretion system controls lethal interactions among *Vibrio fischeri*. 6th ASM Conference on Cell-Cell Communication in Bacteria. Athens, GA. Oct 16-19, 2017. **Invited talk**, presented by L Speare.
4. L Speare, A Cecere, M Wollenberg, Mandel M, Miyashiro T, **AN Septer**. Interbacterial killing spatially structures a host-associated microbiome. ASM Mechanisms for Interbacterial Cooperation and Competition. Washington, DC. March 1-4, 2017. **Invited talk.**
5. **AN Septer**. Inter-bacterial killing and the physical environment drive spatial structuring of symbiont populations. Biophysics Modeling Group. Simons Foundation. New York, New York. November 2, 2016. **Invited talk.**
6. **AN Septer**. Squid symbionts use a molecular syringe to kill competitors. Curriculum in Environment and Ecology. UNC, Chapel Hill. October 13, 2016. **Invited talk.**
7. **AN Septer**. *Vibrio fischeri* populations distinguish between self and other to engage in complex social interactions. Investigations of Host-Microbe Interactions XXVIII. Honolulu, HI. May 13-15, 2016. **Invited talk.**
8. **AN Septer**. *Vibrio fischeri* populations distinguish between self and other to engage in complex social interactions. UNC-CH Department of Microbiology and Immunology Research in Progress. May 4, 2016.
9. **AN Septer**. Friend or Foe? Deciphering the complex social lives of bacteria. University of North Carolina Asheville. Department of Biology Seminar Series. February 12, 2015. **Invited talk.**
10. **AN Septer** and KA Gibbs. Genomic instability contributes to self-recognition behavior in *Proteus mirabilis*. ASM General Meeting. Boston, MA. May 17-20, 2014. **Selected for a young investigator oral presentation.**

UNC Teaching Experience

Instructor on record for Marine Biology (MASC452/BIOL457), Communicating Science and Interdisciplinary Seminar (MASC705/706), and Marine Microbial Symbioses (MASC446/BIOL452)
 Guest lectures for Marine Ecological Genomics (MASC447), Marine Microbiology (MASC443),
 Advanced Special Topics in Biology (BIOL690)

Professional Memberships

2006-present American Society for Microbiology