

PATRICIA J. BAYNHAM
Associate Professor and Chair of Biological Sciences

Department of Biological Sciences
St. Edward's University
3001 South Congress Avenue
Austin, TX 78704
512-233-1675

7025 Auckland Drive
Austin, TX 78749
512-608-3479
patricib@stedwards.edu

EDUCATION:

Ph.D. in Microbiology and Immunology (1999) Wake Forest School of Medicine,
Winston-Salem, NC.
California Teaching Certificate (1992) Chapman University, Orange, CA.
B.S. in Biology (1986) Presbyterian College, Clinton, SC.

ACADEMIC EXPERIENCE:

St. Edward's University, Austin, TX

Tenured, 2011-present
Associate Professor, 2008-present
Interim Dean, School of Natural Sciences 2013-14
Department Chair, Biological Sciences, 2007-8, 2012-13, 2014-15
Assistant Professor, Biological Sciences 2004-8

Thomas More College Crestview Hills, KY

Assistant Professor of Biology, 2000-2004
Faculty Coordinating Committee member 2002-3
Faculty Vice-chair, 2003-2004

Wake Forest University College of Medicine

Coordinator, Medical Microbiology Laboratory, 1996

PEDAGOGICAL TRAINING AND SERVICE

Science Teaching Fellow (STF) Program Facilitator: American Society for Microbiology (ASM) six month program originally supported by a Borroughs Wellcome grant. STF familiarized participants with teaching career options and techniques including course design, assessment and active learning. Led one webinar each year and assisted with the webinars of three co-facilitators (2013-2014).

SEU Teaching Symposium Committee Member: Worked with other committee members to vet proposals, plan the symposium and organized and led the plenary session regarding Wild Basin Creative Research Center (2010-11).

School of Natural Sciences Outstanding Faculty Advisor (2010-11)

Biology Scholars Program: ASM year-long research residency to train faculty in scholarship of teaching and learning (SoTL). This included a SoTL Institute, development of a project and online activities (2008-9).

ACADEMIC and PROFESSIONAL HONORS and SERVICE:

American Society for Microbiology, Committee on Minority Education, Chair of the Undergraduate Research Capstone subcommittee (2006-present)

Fellow, Texas Academy of Science (since 2012)

Faculty Development Committee (2010-11)

SOURCE Committee Co-Chair (2007-2008)

SOURCE Committee Member (2005-2014)

Natural Sciences Career Symposium Committee Member (2005-2009)

Search Committee, Director of Office of Sponsored Programs (2007-8)

Faculty Representative to JBWN Grand Opening Committee (2005-6)

Sigma Xi, Northern Kentucky Chapter (2002-03, VP, 2003-04 President)

Faculty Governance Association, Thomas More College (Representative 2002-3, Vice Chair 2003-4)

Beta Beta Beta Biological Honor Society

Omicron Delta Kappa Honor Society

EXTERNAL FUNDING:

2014 ADVANCing in Central Texas (ACT): Mentoring Mid-career SBS and STEM Women to full professor, NSF, 5 years (\$750,000, pending) Principal Investigator.

2011 Strengthening Food Safety Research and Education Capacity at St. Edward's University Through a Faculty Sabbatical Including Research and Course Development, USDA, 1 year (\$150,000) Project Director.

2009 Undergraduate Research Experiences in Microbiology and Developmental Entomology, USDA. 5 years (\$295,000) Project Director.

2007 Research Opportunity Award with UT collaborator – Marvin Whiteley, NSF funded summer 2007 research and travel to the International Pseudomonas Meeting in August 2007 (\$25,000).

- 2006 ASM General Meeting Minority Travel Grant awarded for travel and presentation at the General Meeting in Orlando, FL (\$1500).
- 2004 *RUI: The Role of AlgZ in the Twitching Motility of Pseudomonas Aeruginosa*, NSF, 1 year (\$45,000). Principal Investigator.
- 2003 Undergraduate Research Fellowship (in support of undergraduate student), American Society for Microbiology, 8 weeks (\$2000).
- 2001 *RUI: The Role of AlgZ in the Twitching Motility of Pseudomonas aeruginosa*, NSF, 3 years (\$240,000). Principal Investigator.

PUBLICATIONS (* undergraduate co-author):

Patricia J. Baynham (2010). Want to Inspire Science Students to Consider a Research Career? Host a Scientist in Your Classroom. *J. Microbiology and Biology Education*, May 2010, 11: 62-63.

Megan L. Boulette, **Patricia J. Baynham**, Peter A. Jorth, Irena Kukavica-Ibrulj, Aissa Longoria*, Karla Barrera*, Roger C. Levesque and Marvin Whiteley (2009). Characterization of Alanine Catabolism in *Pseudomonas aeruginosa* and Its Importance for Proliferation *In Vivo*. *J. Bacteriol.*, Oct 2009; 191: 6329 - 6334.

Patricia J. Baynham, Deborah M. Ramsey, Borys V. Gvozdyev*, Ellen M. Cordonnier*, and Daniel J. Wozniak (2006). The *Pseudomonas aeruginosa* Ribbon-Helix-Helix DNA-Binding Protein AlgZ (AmrZ) Controls Twitching Motility and Biogenesis of Type IV Pili. *J. Bacteriol.* 2006 188: 132-140.

Ramsey, D.M., **P. J. Baynham**, and D. J. Wozniak (2005) Binding of *Pseudomonas aeruginosa* AlgZ to Sites Upstream of the *algZ* Promoter Leads to Repression of Transcription. *J. Bacteriol.* 187: 4430-4443.

Wozniak, D. J., A. B. Sprinkle, and **P. J. Baynham** (2003). Control of *Pseudomonas aeruginosa* *algZ* expression by the alternative sigma factor AlgT. *J. Bacteriol.*, 185: 7297-7300.

Baynham, P.J., A. L. Brown, L. L. Hall *, and D.J. Wozniak (1999). *Pseudomonas aeruginosa* AlgZ, a ribbon-helix-helix DNA binding protein, is essential for alginate synthesis and *algD* transcriptional activation. *Molecular Microbiology* 33: 1069-1080.

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Baynham, P.J. and D.J. Wozniak (1996). Identification and characterization of AlgZ, an AlgT-dependent DNA-binding protein required for *Pseudomonas aeruginosa* *algD* transcription. *Molecular Microbiology* 22: 97-108.

Miles, L.A., G.M. Fless, A.M. Scanu, **P. Baynham**, M.T. Sebald, P. Skocir, L.K. Curtiss, E.G. Levin, J.L. Hoover-Plow, and E.F. Plow (1995). Interaction of Lp(a) with plasminogen binding sites on cells. *Thrombosis & Haemostasis*. 73: 458-65.

Levin, E.G., L.A. Miles, G.M. Fless, A.M. Scanu, **P. Baynham**, L.K. Curtiss, and E.F. Plow (1994). Lipoproteins inhibit the secretion of tissue plasminogen activator from human endothelial cells. *Arteriosclerosis & Thrombosis*. 14: 438-42.

Santell, L., K. Marotti, N.S. Bartfeld, **P. Baynham**, and E.G. Levin (1992). Disruption of microtubules inhibits the stimulation of tissue plasminogen activator expression and promotes plasminogen activator inhibitor type 1 expression in human endothelial cells. *Experimental Cell Research* 201: 358-65.

SELECTED PEER REVIEWED MEETING PRESENTATIONS

(*undergraduate co-author, 45 undergraduate students mentored **indicates that a version of this presentation was also given on campus):

Jana Soares and Patricia Baynham. (2014) "Can probiotic bacteria control *Salmonella enterica* St. Paul in the model organism *Caenorhabditis elegans*?" Texas Academy of Science (TAS), Galveston, TX.

Lawrence Edwards* and Patricia Baynham. (2013) "Will exposure to sub-lethal concentrations of Triclosan lead to the development of microbial tetracycline resistance?" Annual Biomedical Research Conference for Minority Students ABRCMS, Nashville, TN.

Anabel Rodriguez*, Patricia Baynham, Aaron Conrado, and Marvin Whiteley (2013) "Eavesdropping on bacterial communication: Can normal flora increase the resistance of *Pseudomonas aeruginosa* PA14 to Tobramycin, Ciprofloxacin, or Tetracycline?" TAS, Kerrville, TX.

Erika Guin*, Patricia J. Baynham, Aaron Conrado, and Marvin Whiteley (2012) "Detecting potential quorum sensing inhibitors produced by skin and oral isolates using a *Chromobacterium violaceum* indicator strain" ABRCMS, San Jose, CA.

Goldie DaCosta* and Patricia J. Baynham (2011) "Antagonistic effects of coriander, garlic and ginger against *Escherichia coli* O157:H7 in ground beef". Poster presentation. Texas Academy of Science (TAS) Annual Meeting, Austin, TX.

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John Taylor Gabriel* and Patricia J. Baynham(2011) "Organic acids in barbeque marinade inhibit the growth of *Salmonella enterica* in chicken". Oral presentation. TAS Annual Meeting, Austin, TX.

Carlos Mendoza* and Patricia J. Baynham (2010) "Antimicrobial Properties of Cinnamon and Chili Seed Essential oils against *Salmonella enterica* on Whole Minimally Processed Strawberries. ABRCMS, Charlotte, NC.

**Patricia J. Baynham and Lisa M. Goering (2010) "Undergraduate Research Experiences In Microbiology and Developmental Entomology". North American Colleges and Teachers of Agriculture Conference, State College, PA.

**Patricia J. Baynham (2010) "Introducing Epidemiology: the Field, Primary Literature, and Global Impact". TAS Annual Meeting, Stephenville, TX.

Sunil Rathore* and Patricia J. Baynham (2010) "Phenotypic Characterization of *Pseudomonas aeruginosa* Isolates from Cystic Fibrosis Patients." TAS Annual Meeting, Stephenville, TX.

**Patricia J. Baynham (2009) "Can Classroom Interaction with Scientists Positively Influence Science Majors to Consider a Research Career?" American Society for Microbiology Conference for Undergraduate Educators (ASM CUE), Fort Collins, CO.

Maria Anna Taylor*, Patricia J. Baynham, Erika Saenz*, Lauren M. Mashburn, and Marvin Whiteley (2008) "The role of Lipid A phosphates and the cell wall associated lipoproteins OprF, OpfI, and OprL on membrane vesicle formation in *Pseudomonas aeruginosa*." ABRCMS, Orlando, FL.

Patricia J. Baynham (2008) "Can Popular Science Literature Convince Biology Majors to Consider a Research Career?" ASM CUE, Beverly, MA.

Aissa Longoria*, Patricia Baynham and Karla Barrera*, St. Edward's University, Austin, TX and Lindsay Aye, Kelli L. Palmer and Marvin Whiteley "Analysis of Carbon Preference Indicates Alanine as a Preferred Energy Source for *Pseudomonas aeruginosa*." (2008) TAS Annual Meeting, Corpus Christi, TX.

Patricia J. Baynham, Aissa Longoria*, Karla Barrera*, Lindsay Aye, Kelli L. Palmer, Marvin Whiteley (2007) "Carbon preference analysis implicates alanine as a preferred energy source for *P. aeruginosa* in cystic fibrosis sputum." Pseudomonas Meeting, Seattle, WA.

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Karla Barrera*, Patricia J. Baynham, Aissa Longoria*, Lindsay Aye, Kelli L. Palmer, and Marvin Whiteley (2007) "The Leucine Responsive Regulatory Protein Regulates Alanine Catabolism in *Pseudomonas aeruginosa*." ABRCMS, Austin, TX.

Stephanie Meyer*, Kimberly Bandy*, Borys Gvozdyev*, and Patricia J. Baynham (2007) "The Role of the *Pseudomonas aeruginosa* DNA-Binding Protein AmrZ in the Regulation of Phenazine Biosynthesis." American Society for Microbiology General Meeting, Toronto, Canada.

Hernandez, P.* and P. J. Baynham (2006) The Role of the *Pseudomonas aeruginosa* DNA-Binding Protein AmrZ (AlgZ) in Twitching Motility. ASM General Meeting, Orlando, FL.

Gauvain, T. T. * and P. Baynham (2006) IDENTIFICATION OF GENES REGULATED BY THE AMRZ PROTEIN OF *PSEUDOMONAS AERUGINOSA*. Texas Academy of Science, Beaumont, TX.

Baynham, P. J. (2004). The Role of Alginate Regulator *algZ* in *Pseudomonas aeruginosa* Twitching Motility. University of Georgia Department of Microbiology invited talk, Athens, GA.

Kremer, S.L.*, P. J. Baynham, and D. J. Wozniak (2004). Analysis of *Pseudomonas aeruginosa* Polysaccharide Genes that Play a Role in Biofilm Formation. 2004 American Society for Microbiology (ASM) General Meeting, New Orleans, LA.

Whisman, T. R.*, E. M. Cordonnier*, and P. J. Baynham (2004). Identification of AlgZ-Dependent Genes Using a Genomic SELEX Approach in *Pseudomonas aeruginosa*. 2004 American Society for Microbiology (ASM) General Meeting, New Orleans, LA.

Gvozdyev, B.*, K. Parvatiyar, D. J. Hassett, P. J. Baynham (2003). Involvement of *Pseudomonas aeruginosa* AlgZ in the Regulation of Biofilm Development. Argonne National Laboratory, Chicago, IL.

Crowley, J.E.*, E. T. Cordonnier, and P. J. Baynham (2003). Phage Sensitivity Experiments to Determine the Role of *algZ* in the Expression of Type IV Pili on the Surface of *Pseudomonas aeruginosa*., 2003 American Society for Microbiology (ASM) General Meeting, Washington, D.C.