

J. REGAN BECKHAM

EDUCATION

2008 University of Delaware
Newark, DE *Ph.D. Applied Mathematics* Advisor: John A. Pelesko

2006 University of Delaware
Newark, DE *M.S. Applied Mathematics*

2003 University of Central Arkansas
Conway, AR *M.A. Mathematics Education* Advisor: Daniel J. Arrigo

2001 University of Central Arkansas
Conway, AR *B.S. Applied Mathematics (Physics Minor)*

EXPERIENCE

ASSOCIATE PROFESSOR
The University of Texas at Tyler; Tyler, TX 2014-Present

ASSISTANT PROFESSOR
The University of Texas at Tyler; Tyler, TX 2008-2014

TEACHING ASSISTANT
University of Delaware; Newark, DE 2003-2008

PUBLICATIONS

John, G., Heffner, E., Carter, T., Beckham, R., Smith, N., "Augmented Renal Clearance in Patients with Acute Ischemic Stroke: A Prospective Observational Study." *Neurocritical Care* 38, 35–40 (2023).

Back, Randy, and J. Regan Beckham. "A Magnetically Controlled Electrostatic-Elastic Membrane System." *Texas Journal of Science* Vol. 69 Issue 1, pp.47-66, June 2017 (accepted 2015)

Back, Randy, and J. Regan Beckham. "Ferrofilm in a magnetic field." *Physical Review E* 86.4 (2012): 046301.

Beckham, J. Regan, and John A. Pelesko. "An electrostatic-elastic membrane system with an external pressure." *Mathematical and Computer Modeling* 54.11 (2011): 2686-2708

Beckham, J. Regan, and John A. Pelesko. "Symmetry Analysis of a Canonical MEMS Model." *Methods and Applications of Analysis* 15.3 (2008): 327-340.

Arrigo, Daniel J., and Jon R. Beckham. "Nonclassical symmetries of evolutionary partial differential equations and compatibility." *Journal of mathematical analysis and applications* 289.1 (2004): 55-65.

GRANTS

UT Tyler Internal Grant (September 2018 - July 2019) Awarded September 1, 2018 (\$17,000). "Behavioral and mathematical models for nicotine intake and withdrawals in Zebrafish." PI Brent Bill, Co-PI's Randy Back, J. Regan Beckham, and Ayman Hamouda.

Teacher Quality Grant funded by Texas Higher Education Board. (funded June 2014 - April 2017) Awarded January 23, 2014, completed Spring 2018 (\$779,000). PI's Michael Odell, Cynthia Sherman, and Nathan Smith. Co-PI's Randy Back, Fredericka Brown, and J. Regan Beckham

PRESENTATIONS

"Drainage of a Cylindrical Ferro-Film in an External Field. 247th ACS National Meeting & Exposition. Dallas Texas. Spring 2014.
*Poster presented by students Nathan Fortenbury and Travis Hand

"Magnetically Controlled Capacitor Membrane System", Poster Session at APS March Meeting, Baltimore 2013.

"Non-uniform Forcing of a Magnetic Soap Film", Poster Session at APS March Meeting, Boston 2012.

"Modeling of Electrostatic-elastic Membrane Systems Arising in MEMS", Presentation at AMS Joint Meeting, San Francisco 2010.

"A Constrained Capacitive System Arising in MEMS", Presentation at SIAM Conference on Analysis of PDE's, Miami 2009.

"Analysis of the Electrostatic Deflections of an Elastic Membrane with Tailored Dielectric using Symmetry", Poster Session at the Frontiers in Applied and Computational Mathematics (FACM), NJIT 2007.

"Nonclassical Symmetries of Evolutionary Partial Differential Equations and Compatibility", MAA OK-AR Meeting, Tulsa 2003.

PROFESSIONAL

Algorithm development for Cardonex Inc. 2025-2026

Consulting Project for Texas Department of Public Safety, 2021 - 2022.

Algorithm development for Education Advanced Inc. 2019-2024

Mathematical advisor for Pharmacy PhD Residency Program at CHRISTUS Trinity Mother Francis Health Systems. 2018-present.

Consulting Projects for Texas Department of Public Safety, 2017 - 2018.

Workload/Course Offerings Project. Internal project for the Provost office. UT Tyler. 2017-2018

ACTIVITIES

Participated in The 27th Annual Workshop on Mathematical Problems in Industry, New Jersey Institute of Technology, Summer 2011.

SERVICES

Coordinate and work the "How Does That Work?" math and science summer camp for middle school students. 2020-present.

Mentored student groups for the SCUDEM/SIMIODE math modeling competition. 2018 and 2019.

Visited classes at Van Intermediate School as a part of the No Excuses University Initiative. 2019.

Designed and conducted workshop on Reflection and refraction, joint with Randy Back. APS and AAPT meeting, UT Dallas. 2017.

Guest Speaker, STEM week, UT Tyler Innovation Academy, Spring 2013.

Guest Speaker, Mu Alpha Theta Induction Ceremony, Robert E. Lee HS, Fall 2012.

Conducted a teacher in-service workshop on "Fostering Algebraic Thinking", Summer 2009.

HONORS

UT Tyler Department of Mathematics Faculty Teaching Award, May 2018

UT Tyler Certificate of Achievement, Faculty and Staff Publications and Presentations Reception, February 2015

University of Delaware Excellence in Teaching Award for Graduate Student Teaching, May 2007

Baxter/Sloyer Excellence in Teaching Award for Graduate Student Teaching, May 2007

SIAM Outstanding Efforts and Accomplishment award for the SIAM
Student Chapter of Delaware, May 2007

Nicholas P. Pyrros Excellence in Teaching Award, May 2004