

Dr. Diane Denny

Texas A&M University-Corpus Christi

Science & Engineering, Mathematics & Statistics

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Education

PhD, University of Maryland at College Park, 1997.

MA, University of Michigan, Ann Arbor, 1990.

MS, New York University, 1987.

BA, Wake Forest University, 1975.

Professional Employment

Associate Professor, Texas A&M University-Corpus Christi. (2005 - Present).

Assistant Professor, University of Wyoming. (1999 - 2005).

Visiting Assistant Professor, James Madison University. (1997 - 1999).

Graduate Teaching Assistant/Instructor, University of Maryland -College Park. (1990 - 1997).

Research assistant, KMS Fusion, Inc. (1987 - 1990).

Graduate Teaching Assistant, University of Michigan. (1987 - 1990).

Independent consultant, Advanced Technology, Inc. (1981).

Task Manager, Computer Sciences Corporation. (1977 - 1981).

Professional Memberships

American Mathematical Society

Society for Industrial and Applied Mathematics

TEACHING

Teaching Experience

MATH 1470, INTRODUCTION TO MODELING

MATH 2413, CALCULUS I

MATH 2414, CALCULUS II

MATH 3311, LINEAR ALGEBRA

MATH 3313, FOUNDATIONS TO HIGHER MATH

MATH 3315, DIFFERENTIAL EQUATIONS

MATH 3470, CALCULUS III

MATH 4301, INTRODUCTION TO ANALYSIS

MATH 4315, PARTIAL DIFFERENTIAL EQUATIONS

MATH 4385, APPLIED MODELING

MATH 5310, LEVELING INTRODUCTION TO ANALYSIS

MATH 5336, ADV DIFFERENTIAL EQUATIONS
MATH 5337, THEO & APPL PARTIAL DIFFERENTIAL
MATH 5378, MATH MODELING
MATH 5390, SPECIAL TOPICS IN MATHEMATICS
MATH 5393, LITERATURE REVIEW AND RESEARCH
MATH 5394, RESEARCH METHODS IN MATH
MATH 5396, DIS: Partial Differential Equations of Fluid Dynamics
MATH 5995, THESIS

SCHOLARLY AND CREATIVE ACTIVITIES

Publications

Refereed

Conference Proceedings

Denny, D. (2010). *Solution to a system of equations modeling compressible fluid flow with capillary stress effects* (vol. 2010, pp. 45-64). *Electronic Journal of Differential Equations*.

Journal Articles

Denny, D. (2016). Existence of a solution to a semilinear elliptic equation. *AIMS Mathematics*, 1(3), 208-211.

Denny, D. (2015). Existence of a solution to a system of equations modelling compressible fluid flow. *Electronic Journal of Differential Equations*, 2015(216), 1-28.

Denny, D. (2014). A converse of the mean value theorem for integrals of functions of one or more variables. *Journal of Mathematical Sciences and Mathematics Education*, 9(2), 1-12.

Denny, D. (2013). A unique positive solution to a system of semilinear elliptic equations. *Dynamical Systems and Differential Equations, DCDS Supplement 2013, Proceedings of the 9th AIMS International Conference*, 193-195.

Denny, D. (2011). Existence of a unique solution to a quasilinear elliptic equation. *Journal of Mathematical Analysis and Applications*, 653-668.

Denny, D. (2010). A unique solution to a nonlinear elliptic equation. *Journal of Mathematical Analysis and Applications*, 365, 467-482.

Denny, D. (2010). Existence and uniqueness of classical solutions to second-order quasilinear elliptic equations. *Electronic Journal of Differential Equations*, 2010(82), 1-21.

Denny, D. (2007). Existence and uniqueness of global solutions to a model for the flow of an incompressible barotropic fluid with capillary effects. *Electronic Journal of Differential Equations*, 2007(39), 1-23.

Denny, D. (2006). Computational solutions of the equations for a multi-dimensional diffuse-interface model of compressible fluid flow with capillary effects. *Journal of Mathematical Sciences and Mathematics Education*, 1(1), 1-6.

Denny, D. (2005). Solutions for a model of low-speed flow for fluids with capillary effects. *Communications in Applied Analysis*, 9, 43-66.

Denny, D. (2004). Existence of solutions to equations for the flow of an incompressible fluid with capillary effects. *Communications on Pure and Applied Analysis*, 3(2), 197-216.

Zeller, K., Zimmerman, G., Hehn, T., Donev, E., Denny, D. (2001). Analysis of inadvertent microprocessor lag time on eddy covariance results. *Journal of Applied Meteorology*, 40, 1640-1646.

Denny, D., Pego, R. (2000). Models of low-speed flow for near-critical fluids with gravitational and capillary effects. *Quarterly of Applied Mathematics*, 58, 103-125.

Presentations

Denny, D., "Existence of a unique solution to the nonlinear Poisson equation," The 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL. (July 2016).

Denny, D., "Existence of a unique solution to a quasilinear elliptic equation with data at an interior point," Coastal Bend Mathematics and Statistics Symposium, TAMUCC. (March 26, 2016).

Denny, D., "A unique solution to a quasi-linear elliptic equation," SIAM Conference on the Analysis of Partial Differential Equations, SIAM, Orlando, FL. (December 2013).

Denny, D. (Author & Presenter), "A unique solution to a system of nonlinear equations modelling compressible fluid flow," International Conference on the Theory, Methods and Applications of Nonlinear Equations, Kingsville, TX. (December 2012).

Denny, D. (Author & Presenter), "A unique positive solution to a system of nonlinear elliptic equations," The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, FL. (July 2012).

Denny, D. (Author & Presenter), "A unique solution to a quasilinear elliptic equation," ICIAM 2011, Society for Industrial and Applied Mathematics, Vancouver. (July 2011).

Denny, D. (Author & Presenter), "Existence of a unique solution to a quasilinear elliptic equation with data at an interior point of the domain," Joint Mathematics Meetings, American Mathematical Society, New Orleans. (January 2011).

Denny, D. (Author & Presenter), "Existence of a unique solution to equations modeling fluid flow with time-dependent density data," SIAM Conference on Analysis of Partial Differential Equations, Society for Industrial and Applied Mathematics, Miami. (December 2009).

Denny, D. (Author & Presenter), "Existence of a solution to equations modeling fluid flow with capillary stress effects," Eighth Mississippi State-UAB Conference on Differential Equations and Computational Simulations, Mississippi State University. (May 2009).

Denny, D. (Author & Presenter), "Existence of a solution to equations modeling fluid flow with capillary stresses," Texas Partial Differential Equations Conference, Texas State University-San Marcos. (March 2009).

Denny, D. (Author & Presenter), "A uniqueness result for equations modeling the flow of a viscous, barotropic fluid under periodic boundary conditions," American Mathematical Society Conference, American Mathematical Society, Washington, D.C. (January 2009).

Contracts, Grants and Sponsored Research

Grant

Denny, Diane (Co-Principal), Jensen, David Allen (Co-Principal), Mestas-Nunez, Alberto M. (Co-Principal), Tarazaga, Pablo (Principal), "Surface circulation of Corpus Christi Bay using HF radar observations for applications such as oil spill trajectory modeling," Sponsored by Texas General Land Office, State, \$100,000.00. (2008 - 2010).

Denny, Diane (Co-Principal), Stanescu, Dan (Principal), "Scientific Computing Research Environments for the Mathematical Sciences," Sponsored by National Science Foundation, Federal, \$47,000.00. (2004 - 2005).

SERVICE

Department

Library Representative. (2013 - Present).

Serve as an Island Days coordinator in the Department. (2012 - Present).

Attended Island Day. (2006 - Present).

Mathematics Seminar Coordinator. (2009 - May 2015).

Committee Member, Graduate Program Review Committee. (2012 - 2013).

Helped grade Calculus common final exam questions for student learning assessment. (2011 - 2013).

Committee Member, Graduate Committee. (2006 - 2013).

Attended meetings of calculus instructors which discussed calculus. (2012).

Served as substitute teacher for one class for another Math Department faculty member. (2012).

Participated in the assessment of math student project reports/theses. (2010 - 2012).

Attended meetings to review Calculus textbooks and SLOs. (2011).

Attended Graduate Studies Open House at TAMUCC. (2007 - 2011).

Presented research talk at Mathematics Department Seminar at TAMUCC. (2010).

Committee Member, Search Committees for Math Ed and Applied Math positions. (2008 - 2009).

Committee Member, Undergraduate Program Review Committee. (2008 - 2009).

Committee Member, Calculus Committee. (2005 - 2006).

Committee Member, 120-hour committee. (2005).

College

Committee Member, S&E Advisory Committee for the BS in Integrated Sciences. (2016 - Present).

Committee Member, S&E Curriculum Committee. (2013 - Present).

Committee Member, S&E Scholarship Committee. (2009 - May 2014).

Committee Member, General Science Degree Committee. (2011).

Committee Chair, S&T Awards Committee. (2007 - 2008).

Committee Member, S&T Awards Committee. (2006 - 2008).

University

Faculty Senate. (May 2015 - May 2016).

Committee Member, Core Curriculum Committee. (2006 - 2009).

Professional

Session Chair, 11th AIMS Conference on Dynamical Systems, Differential Equations and Applications. (July 2016).

Reviewer, Journal Article, Electronic Journal of Differential Equations. (2011).

Session Chair, ICIAM 2011 Conference. (2011).
Reviewer, Journal Article, Mathematical Methods in the Applied Sciences. (2011).
Session Chair, American Mathematical Society Conference. (2009).
Session Chair, Society for Industrial and Applied Mathematics Conference. (2009).