

# Richard D Myers, Ph.D.

## Academic Curriculum Vitae

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👤 rdm375

### Courses Taught

**Calculus I, MATH 1431**, University of St. Thomas: Summer 2006

**Calculus II, MATH 1432**, University of St. Thomas: Fall 2005, Spring 2006, Fall 2006

**Calculus III, MATH 2431**, University of St. Thomas: Spring 2007

**Differential Equations, MATH 2343**, University of St. Thomas: Fall 2005, Fall 2006

**Intro to Technical Computing, MATH 2338**, University of St. Thomas: Spring 2007

**Numerical Analysis, MATH 3339**, University of St. Thomas: Fall 2005, Spring 2007

**Linear Algebra, MATH 3334**, University of St. Thomas: Spring 2006

**Probability, MATH 3335**, University of St. Thomas: Fall 2006

**Real Analysis, MATH 4331**, University of St. Thomas: Fall 2006

**Junior Research Seminar, MATH 3181**, University of St. Thomas: Fall 2005, Spring 2006, Fall 2006

**Senior Research Seminar, MATH 4181**, University of St. Thomas: Spring 2006, Fall 2006

**Independent Study, MATH 4392**, University of St. Thomas: Spring 2006, Summer 2006, Fall 2006

### Courses Developed

**Junior/Senior Research Seminar, MATH 3181/4181**, University of St. Thomas

**Introduction to Technical Computing, MATH 2338**, University of St. Thomas

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## Undergraduate Research Supervision

Michael Deeb - *The Mathematics Behind Basket Ball*, Fall 2006

Ashley Gibbs - *Mathematics of Stringed Instruments*, Fall 2006

David Gutierrez - *The Use of Mathematics in Predicting Human Strength Performance*, Fall 2006

Kulvir Kaur - *The Techniques of Teaching Mathematics in Grades 8-12*, Fall 2006

Hai Le - *The Mathematics of Digital Photography*, Fall 2006

Michael Nguyen - *P vs. NP*, Fall 2006

Claudia Oramas - *Stabilization of Structures*, Fall 2006

Linh Tran - *Mathematics and Pool*, Fall 2006

Mary Tapado - *The Golden Mean*, Fall 2006

Giselle Ramos-Bryan - *Pascall's Triangle*, Spring 2006

Moses Khan - *The Relevance of Mathematics in Our Daily Lives*, Spring 2006

Ashley Gibbs - *Bezier Curves*, Spring 2006

Michael Nguyen - *Cryptology: The Study of Cryptography and Cryptanalysis*, Spring 2006

Janie Garcia - *Tomography: A mathematical Background for Medicine's Image Machine*, Spring 2006

Randhi Panapitiya - *Mathematical Relationships with Traffic Flow*, Spring 2006

Robin Stone - *Chaos, Fractals, and Perlin Noise in the Generation of Virtual Landscapes*, Spring 2006

Mary Tapado - *Wallpaper Patterns*, Spring 2006

Janie Garcia - *Galileo Galilei: His Life, His Work*, Fall 2005

Moses Khan - *The Life and Philosophy of Pythagoras*, Fall 2005

Dominic Novak - *Algorithmic Composition: How can math be used in the composition of music?*, Fall 2005

Giselle Ramos-Bryan - *Math in Art: Prospective Geometry*, Fall 2005

Robin Stone - *Unlocking Young Minds: Methods of Teaching Mathematics*, Fall 2005

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## The University of St. Thomas Research Symposium

Ashley Gibbs - *Bezier Curves in Application*, Spring 2006

Christopher LaVallee - *The Use of Mathematics in the Design of a Long-Bow*, Spring 2006

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## Academic Appointments

Sept 2005 – Aug 2007

**Visiting Assistant Professor of Mathematics**, University of St. Thomas – Houston, TX

- Taught undergraduate courses across calculus, linear algebra, probability, differential equations, and numerical analysis.
- Supervised undergraduate research and developed new curriculum offerings.
- Served on departmental curriculum revision committee.

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## Professional Service

Curriculum development and revision, University of St. Thomas

Departmental computing facilities director, Mathematics Dept, University of St. Thomas

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## Research Interests

- Numerical analysis for PDEs and ODEs
- Time integration methods and stability theory
- Adjoint methods and optimal control
- Scientific computing and high-performance simulation
- Computational fluid dynamics and pipeline flow modeling

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## Research Experience

Sept 2007 – Mar 2025

### Software Development Scientist, DNV

- Conducted long-term applied research in numerical methods for transient flow simulation.
- Developed, analyzed, and validated time integration schemes with provable stability and accuracy properties.
- Bridged theoretical numerical analysis with large-scale production simulation codes.
- Strong communicator of complex technical concepts to both expert and non-expert audiences
- Proven record of long-horizon technical ownership and sustained innovation

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## Publications

May 2019

### *Step Doubling for Pipeline Flow*

This paper defines and studies a simple, efficient method for discretizing pipeline equations in time.

Todd F Dupont, Richard D Myers

[onepetro.org/PSIGAM/proceedings-abstract/PSIG19/PSIG19/PSIG-1923/2121](http://onepetro.org/PSIGAM/proceedings-abstract/PSIG19/PSIG19/PSIG-1923/2121) (Paper presented at the PSIG Annual Meeting, London, UK, May 2019)

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## Education

Sept 2003 – Aug 2005

### University of Houston–University Park, PhD in Mathematics – Houston, TX

- Dissertation: *Numerically Consistent Approximations for Optimal Control Problems Applied to Stiff Chemical Systems*
- Abstract: In the context of the optimal control problems of state-finding and time based controls, adjoint discretizations for Runge-Kutta methods were developed that converge at the same rate as the solution and objective function.
- Advisor: Prof. Jiwen He

Sept 2000 – May 2002

### University of Houston–University Park, MS in Applied Mathematics – Houston, TX

Focused on Numerical Analysis and Scientific Computing: Numerical Odes, PDEs, Linear Algebra, Optimization, and Parallel Programming.

Sept 1995 – May 2000

### University of Houston–University Park, BS in Mathematics – Houston, TX

- Graduated Magna Cum Laude

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## Technical Skills

**Platforms:** Linux, Windows, WSL

**Languages:** Python, FORTRAN, C++, Bash

**Automatic Differentiation:** Odyssee, Tapenade

**Parallel Programming:** MPI, OpenMP

**Environments:** GCC, Clang, Make/CMake, MS Visual Studio, VS Code, TFS

**Document Processing:** LaTeX, Markdown, HTML

**Research Areas:** Numerical Analysis, Scientific Computing, Signal Processing, Machine Learning