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# Richard D. Myers, Ph.D.

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## Experience

**Principal Software Development Scientist**, DNV – Katy, TX (Remote) Apr 2022 – Apr 2025

- Worked primarily on bug fixes and enhancements for SPS (Stoner Pipeline Simulator)
- Investigated feasibility of incorporating Attune/GTO thermal shell heat calculations into Synergi Gas's Slow Transient engine
- Began work on a tool to convert LANL's GasModels.jl models into Attune/GTO Statefinding models and SPS models
- Reverse engineered Enbridge's SlackLine Flow estimation methodology (ask me how ;^))
- Focused on technical leadership, innovation, and long-term project vision within DNV's global engineering framework

**Senior Software Development Scientist**, DNV – Katy, TX (Hybrid) July 2012 – Apr 2022

- Supported software development for state finding using adjoint methods and transient optimization for gas pipeline networks in Synergi Gas 4
- Merged software updates and tested code changes prior to internal release
- Assisted Henry Rachford with development systems
- Automated testing for Quickstart and GTO to support Richard Carter
- Implemented step doubling in SPS (Stoner Pipeline Simulator), achieving quadratic convergence of time solutions
- Reverse engineered SPS's SlackLine Flow modeling
- Expanded development work across SPS in addition to Synergi Gas 4
- Note: DNV is the corporate successor to GL Noble Denton, GL Industrial Services, and Advantica

**Senior Software Development Scientist**, GL Noble Denton – Houston, TX (Hybrid) Jan 2010 – July 2012

- Supported software development for state finding using adjoint methods and transient optimization for gas pipeline networks in Synergi Gas 4
- Merged software updates and tested code changes prior to internal release
- Worked through transitional phase following merger with GL Industrial Services and Advantica
- Note: GL Noble Denton succeeded GL Industrial Services and Advantica

**Software Development Scientist**, GL Industrial Services – Houston, TX (Hybrid) Sept 2007 – Jan 2010

- Supported software development for state finding using adjoint methods and transient optimization for gas pipeline networks in Synergi Gas 4
- Merged software updates and tested code changes prior to internal release
- Note: GL Industrial Services succeeded Advantica

**Software Development Scientist**, Advantica – Houston, TX Aug 2007 – Sept 2007

- Short tenure prior to merger; contributed to ongoing development projects for safety and modeling tools
- Worked on compressor station scheduling in Synergi Gas 4

**Visiting Assistant Professor**, University of St. Thomas Aug 2005 – Aug 2007

- Taught undergraduate mathematics courses in calculus, differential equations, numerical analysis, linear algebra, probability, and real analysis
- Directed junior and senior undergraduate research seminars and independent studies

**Director of Computing Facilities, Mathematics Department**, University of St. Thomas Nov 2006 – present

- Managed departmental computing facilities and instructional technology

**Teaching Assistant**, University of Houston Aug 2003 – Aug 2005

**Research Assistant**, University of Houston June 2000 – May 2003

## Education

**University of Houston**, Ph.D. in Mathematics 2005

- Advisor: Jiwen He
- Dissertation: Numerically Consistent Approximations for Optimal Control Problems Applied to Stiff Chemical Systems

**University of Houston**, M.S. in Applied Mathematics 2002

**University of Houston**, B.S. in Mathematics (Magna cum Laude) 2000

## Publications

**Step Doubling for Pipeline Flow** May 2019
Todd F. Dupont, Richard Myers
onepetro.org/PSIGAM/proceedings-abstract/PSIG19/PSIG19/2121 (Proceedings of the PSIG Annual Meeting)

## Teaching

**Courses Taught (University of St. Thomas)**

- Fall 2005: MATH 1432 Calculus II; MATH 3339 Numerical Analysis; MATH 2343 Differential Equations; MATH 3181 Junior Research Seminar
- Spring 2006: MATH 1432 Calculus II; MATH 3334 Linear Algebra; MATH 3181 Junior Research Seminar; MATH 4392 Independent Study
- Summer 2006: MATH 1431 Calculus I; MATH 4392 Independent Study
- Fall 2006: MATH 1432 Calculus II; MATH 3335 Probability; MATH 2343 Differential Equations; MATH 4331 Real Analysis; MATH 3181 Junior Research Seminar; MATH 4181 Senior Research Seminar; MATH 4392 Independent Study
- Spring 2007: MATH 2431 Calculus III; MATH 3339 Numerical Analysis; MATH 2338 Introduction to Technical Computing; MATH 3181 Junior Research Seminar; MATH 4181 Senior Research Seminar

**Courses Developed (University of St. Thomas)**

- MATH 3181 / MATH 4181 Junior/Senior Research Seminar
- MATH 2338 Introduction to Technical Computing

## Research

**Undergraduate Research Projects Directed — Fall 2006**

- Michael Deeb — The Mathematics Behind Basketball
- Ashley Gibbs — Mathematics of Stringed Instruments
- David Gutierrez — Mathematics in Predicting Human Strength Performance
- Kulvir Kaur — Teaching Mathematics in Grades 8–12
- Hai Le — Mathematics of Digital Photography
- Michael Nguyen — P vs. NP
- Claudia Oramas — Stabilization of Structures
- Linh Tran — Mathematics and Pool
- Mary Tapado — The Golden Mean

**Undergraduate Research Projects Directed — Spring 2006**

- Giselle Ramos-Bryan — Pascal's Triangle
- Moses Khan — Relevance of Mathematics in Our Daily Lives
- Ashley Gibbs — Bezier Curves
- Michael Nguyen — Cryptology
- Janie Garcia — Tomography and Medical Imaging
- Randhi Panapitiya — Mathematics of Traffic Flow
- Robin Stone — Chaos, Fractals, and Perlin Noise
- Mary Tapado — Wallpaper Patterns

**Undergraduate Research Projects Directed — Fall 2005**

- Janie Garcia — Galileo Galilei
- Moses Khan — Pythagoras
- Dominic Novak — Algorithmic Composition
- Giselle Ramos-Bryan — Mathematics in Art
- Robin Stone — Teaching Mathematics

**University of St. Thomas Research Symposium**

- 2006 — Ashley Gibbs: Bezier Curves in Application
- 2006 — Christopher LaVallee: Mathematics in the Design of a Longbow

## Professional References

Available upon request.