Ashley N. Ferguson

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EDUCATION

Florida Institute of Technology, Melbourne, FL

Master of Science, Dual Degrees: Chemical Engineering and Applied Mathematics
GPA: 3.85/4.00, Graduation Date: July 26, 2013

Bachelor of Science, Dual Degrees: Chemical Engineering and Mathematical Sciences
GPA 3.80/4.00, Magna Cum Laude, Graduation Date: May 07, 2011

WORK EXPERIENCE

Instructor of Mathematics

University of South Carolina – Beaufort (August 2014 – Present)

- Classes taught: College Algebra, Intensive College Algebra, College Algebra Extension, Precalculus, Calculus for Business and Social Science, Calculus 1, Basic Concepts of Elementary Mathematics 1, Experiential Mathematics and Computation, General Physics II, General Physics II Lab, The Physics of How Things Work, The Physics of How Things Work Lab
- Prepare lectures and course material for in-person and virtual learning
- Serve on departmental curriculum committee to develop new courses and amend current course content

Graduate Teaching Assistant for Precalculus, Calculus 1 & 2, Differential Equations, and Partial Differential Equations (August 2011 – May 2013)

Florida Institute of Technology, Mathematical Sciences Dept, Melbourne, FL

- Reinforced materials taught in lecture sessions by working examples and explaining steps in detail
- Graded tests, quizzes, and homework
- Held office hours for additional questions and tutoring

PUBLICATIONS

- **Transport through random bimodal and multimodal fiber structures**
  Tomadakis, M.M., Fuselier, K., Almeer, F., Ferguson, A., Cowdrick, V.
  Chemical Engineering Science, Volume 212, February 2020

PROJECT EXPERIENCE

- **Investigation of Transport Properties of Bimodal Fibrous Media** (Spring 2013)
  - Expanded literature search on bimodal fiber structure transport properties to include papers published from 2010 – 2013
  - Analyzed the new articles and expressed the reported transport properties data in terms of the parameters used in previous work
  - Incorporated the new data into plots and edited past thesis and the new papers analyses into a manuscript to be submitted for publication to a technical journal
- **Continuous vs. Batch Fermentation, Florida Institute of Technology** (Spring 2011)
  - Designed continuous fermentation process for brewing beer
  - Compared with similar traditional batch fermentation process
  - Performed cost analysis to determine which method of fermentation is the most cost effective

- **Distillation Column Design, Florida Institute of Technology** (Fall 2010)
  - Developed a preliminary design of continuous sieve-plate distillation column
  - Determined optimum reflux ratio and estimated percent distribution of total annual cost
  - Wrote MATLAB code to aid in calculations for number of plates, reflux ratio, etc.
- **Shell and Tube Heat Exchanger Design, Florida Institute of Technology** (Spring 2010)
  - Designed shell-and-tube heat exchanger to serve as pre-heater for continuous sieve-plate distillation column
  - Determined optimum size based on length, diameter of the shell & tubes, pitch of the tubes, and pressure drops
  - Performed cost analysis for optimum design
- **Pipeline Design and Optimization, Florida Institute of Technology** (Fall 2009)
  - Designed a pipeline to transport vinyl chloride monomer from railway cars carrying cylindrical drums filled with 90% VCM to spherical storage tanks
  - Determined optimum pipe diameter based on most cost effective solution
  - Performed cost analysis for optimum design based on annual fixed cost and annual operating cost