

## Math & Statistics Instructor, Emerging Data Scientist

### SUMMARY:

*A seasoned Instructor of Mathematics & Statistics with over 15 years of experience teaching curriculum college transfer courses and developmental math courses to college students. Educational background includes mathematical theory, applied mathematics, statistics, and computer programming. Previous graduate work focused in mathematical theory and statistics. Current graduate work in Data Science and Business Analytics.*

*My objective in the classroom is helping students learn mathematics while working to guide them as they evolve into successful professionals in an atmosphere where diversity is present and growth is a priority.*

*My objective as a data scientist is to answer big questions with data. I aim to approach every dataset with an open mind, handling data cleaning and preprocessing carefully, analyzing associations and patterns from differing perspectives using varying up-to-date technologies, staying engaged with 'what-if' and new variable ideas, and pioneering new thinking and learning methods in the field of data science.*

### EDUCATION:

University of North Carolina at Charlotte	Charlotte, NC
<b>M.S. Degree in Data Science and Business Analytics</b>	enrolled
<b>Graduate Certificate in Data Science and Business Analytics</b>	May 2020
Appalachian State University	Boone, NC
<b>M.A. Degree in Mathematics with Concentration in College Teaching</b>	August 2006
Appalachian State University	Boone, NC
<b>B.S. Degree in Mathematics, concentration in Applied Mathematics, general science emphasis</b>	August 2004
<b>Minor: Computer Science</b>	

### TECHNOLOGY:

Powerpoints, TI-Smartview Software Presenter, TI-Calculator, TI-Nspire Calculator, MS Access, MS Office, MS Viseo, Camtasia Studio, Elluminate Live Online Classroom, Smartboard and Sympodium with Smart Notebook Software, Pronto: Student Chat, Audio, Appshare and Whiteboard, Blackboard, Moodle, WebCT, Document Cam, Website Development (HTML and Dreamweaver), Maple (Math Modeling Software), Minitab (Statistics Software), Tableau, PowerBI, MySQL, SQLite

### SKILLS:

<b>Leadership:</b>	Negotiations, Presentation, Public Speaking, Facilitation, Team Building
<b>Programming Languages:</b>	HTML, SQL, SAL, MAL, R, C++
<b>Spoken Languages:</b>	English (primary), Spanish (secondary – conversational)

### PROFESSIONAL EXPERIENCE:

#### **Data Science and Business Analytics**

Project Portfolio: [patriciamariebarrier.github.io](https://patriciamariebarrier.github.io)

**Appalachian State University** Boone, NC

August 2017-Current

Lecturer:

Basic Statistics (STT 1810)  
Introduction to Statistics (STT 2810)  
Reasoning with Statistics (STT 2820)  
Introduction to Mathematics (MAT 1010)  
Business Math with Calculus (MAT 1035)

- Active Committee Member: Web, News, and Social Media Committee, Exit Survey Committee
- Leader in subgroup Social Media Committee responsible for Mathematics Department Facebook Page Updates
- ASU Faculty Transfer Mentor – Organized STEM Transfer Student Social hosted by our math department
- Participate in Intro to Statistics Group and Non-Tenure Track Group, meeting regularly for instructor collaboration and professional development
- Co-Authored Article *Tessellations: Tiling the Plane* published in The Centroid – The Journal of the North Carolina Council of Teachers of Mathematics Volume 44, Issue 1 of Fall 2018 (with Dr. Holly Hirst)
- Online Course Development Leader: member of university subgroup who received special training in effective Online course design and educational technology, earned Quality Matters Certification, and continue to meet with department colleagues as requested in order to help advise them in online teaching and technology

**University of North Carolina at Charlotte Charlotte, NC**

January 2020-August 2020

Online Course Design and Development:

Training – Statistics for Data Science Overview (self-paced, interactive modules for DSBA graduate students)

**Rowan-Cabarrus Community College Concord, NC**

August 2011-May 2017

Instructor:

Essential Mathematics (MAT 060 – now DMA 010, 020, 030)  
Introductory Algebra (MAT 070 – now DMA 040, 050)  
Intermediate Algebra (MAT 080 – now DMA 060, 070, 080)  
Survey of Mathematics (MAT 140, college transfer)  
Precalculus Algebra (MAT 171, college transfer – seated & online)  
Precalculus Trigonometry (MAT 172, college transfer)  
Statistical Methods I (MAT 152, college transfer – seated & online)

- Advise instructors with teaching technique recommendations, pacing advice, feedback regarding auditing regulations and legal feedback (FERPA and consistent policy standards)
- Collaborate with other faculty members in order to monitor and develop appropriate college curricula, course redesign and standard-setting, using data collection methods for both monitoring and improvement
- Involved with NCMATYC (N.C. Mathematical Association of two year colleges) and ICTCM (International Conference on Technology in Collegiate Mathematics)
- Continual achievement of Training Certifications, minimum of 30 hours professional development each year
- Representative for RCCC in NC State Redesign of the NCDAP Math Placement Test, redeveloping state standards for college math courses
- Master Advisor, selected by committee, specializing in overall curriculum interpretation, planning, and management for students

**Stanly Community College Albemarle, NC**

August 2013-May 2016

Online Instructor:

Survey of Mathematics (MAT 140, college transfer, accelerated pace – online)  
Quantitative Literacy (MAT 143, college transfer, accelerated pace – online)

**Central Piedmont Community College Charlotte, NC**

August 2011-May 2015

Instructor:

College Algebra (MAT 161, college transfer, accelerated pace)

**Cleveland Community College Shelby, NC**

January 2009-August 2011

Instructor:

Essential Mathematics (MAT 060)

Introductory Algebra (MAT 070 – seated & online)

College Algebra (MAT 161, college transfer)

Precalculus Algebra (MAT 171, college transfer, Huskins)

Precalculus Trigonometry (MAT 172, college transfer, Huskins)

- Instructed seated and online courses, active faculty member through committee work, professional development, and student advising, strong incorporation of technology in the classroom, and dedication to betterment of school as a whole
- Taught college's first online developmental math course
- Pioneered use of new Elluminate Technology: Negotiated with sales representatives to get access to Voffice classroom, and Piloted Live Online Class Instruction for our school
- Development and Maintenance of departmental webpage and personal faculty homepage
- Served on Schedule Committee to help arrange a new course scheduling scheme that is functional between all of the divisions in the college

**Spartanburg Community College Spartanburg, SC**

June 2008-January 2009

Instructor:

Introduction to Algebra (MAT 101)

Intermediate Algebra (MAT 102)

Probability and Statistics (MAT 120, college transfer)

- Taught two accelerated, 5 week summer courses.
- Kept students involved and successfully learning in a high-paced course, both in lecture and through group-work (102, 120)
- Strong use of TI-83, with statistical interpretation being a primary focus (120)

**Blue Ridge Community College Flat Rock, NC**

August 2006-May 2008

Instructor:

Essential Mathematics (MAT 060)

Introductory Algebra (MAT 070)

Intermediate Algebra (MAT 080)

Algebra & Trigonometry (MAT 121, college transfer)

Mathematical Concepts II (MAT 142, college transfer)

- Full responsibility for syllabus development, instructional strategies, and grading
- Implemented use of TI-83 (070, 080, 121)
- Used a student-lead, portfolio-based instructional technique with prospective elementary teachers (142)

**BINE Internship with Appalachian State University Puebla, Puebla Mexico**

January 2006-June 2006

Cultural Immersion and Research in Mexico

International Thesis Instructor:

- Taught English Thesis Writing and Research Methods to masters level class
- Observed math classes, one at the middle school level and one at the college level, for exposure to culturally different teaching trends in the mathematics classroom and to aid in the establishment of suggestions for math instructors in the USA who work with Hispanic students

- Learned to communicate in Spanish at a basic, yet proficient, level
- Wrote manual entitled *Cultural Differences Observed in Mexico: Suggestions for Mathematics Instructors when Teaching Students with Limited English Proficiency*

### **Appalachian State University Boone, NC**

August 2004-December 2005

Instructor (Fall 05):

Introduction to Statistics (STT 2810)

College Algebra with Applications (MAT 1020)

- Taught non-math majors in an applications course and in a statistics course
- Implemented technology in the classroom using the TI-83 (1020) and the statistical software package Minitab (2810)
- Designed and implemented on-line class materials using WebCT, including instant feedback quizzes, class calendars, grades, and handouts

Graduate Teaching Assistantship (2004-05):

College Algebra with Applications (MAT 1020)

- Taught, both under supervision and with complete independence, courses to non-math majors
- Learned to use impartial grading, effective teaching structure and topic pacing, and to prepare comprehensive student exams
- Gained experience introducing math concepts in the form of word problems, with interpretation training being a major component

### **Caldwell Community College Boone, NC**

August 2004-December 2005

Instructor:

Essential Mathematics (MAT 060)

Introductory Algebra (MAT 070)

Intermediate Algebra (MAT 080)

- Instructed developmental level math classes in mixed classrooms of both nontraditional and recent high school graduate students
- Successfully dealt with a wide range of math comprehension skills in each class, where learning disabilities were present, including math anxiety

Professional Math Tutor:

Worked within the Academic Support Department as a professional math tutor helping college students to understand and to be successful in their math courses

- Assisted students in math courses ranging from developmental level to calculus, as well as statistics
- Intensive work done with students possessing learning disabilities such as ADHD, Anxiety, and Bipolar Disorder, including non-traditional students who often had either forgotten, or were completely lacking, in their math foundation

### **Watauga Youth Network Boone, NC**

November 1998-June 2000

Assistant Site Coordinator:

- Worked with middle schools in Watauga County with at risk children to accelerate their academic progress
- Interfaced with teachers and parents to find individualized solutions
- Helped 70 students to perform better in school and move on to high school

### **Avery High School Teacher Cadet Program Newland, NC**

Nov.1998-Dec. 1998

Teaching Intern:

- Taught Algebra I & II to a classroom of mixed level, emergency care, high school boys
- Prepared all lesson plans and introduced lecture material in such a way that both algebra classes (I & II) could be

combined during explanation

- Established a functional atmosphere among teenage boys who had primarily been placed into emergency care as a form of juvenile punishment
- Successfully taught a mixed math class while managing both disciplinary problems and overcoming learning disabilities

#### **Crossnore School, Inc. Children's Home Crossnore, NC**

Dec. 1997-May 1999

Math and Science Tutor:

- Tutored groups of emotionally strained students and assessed each child's needs on an individual basis
- Prepared all lesson plans and kept records of individual academic progress
- Interfaced with social worker and house parents in understanding the child's overall performance at school and within the orphanage
- Helped 30 students to grow academically and helped 29 of 30 to reach grade level comprehension
- Taught annual workshops to classes of 15 to 20 high school students and prepared them for the upcoming school year, including: Geometry, Algebra I, Algebra II
- Assisted a non-bilingual Spanish-speaking student in learning basic English

#### **ACADEMIC EXTRACURRICULAR:**

#### **ASU Math Club, Appalachian State University Boone, NC**

Dec. 2002-May 2004

Math Club President:

- Planned and directed team building activities, community service events, fundraiser drives, professor-student interaction socials, academic involvement, and club promotion
- Expanded club membership from 5 members to over 35 members
- Increased campus and community involvement from 1 or 2 annual events to several events per month, resulting in professor involvement more than tripling, and other club heads sitting in on our meetings for new ideas
- Sponsored exam study halls where math tutoring was provided

#### **ACADEMIC AWARDS:**

#### **Mathematical Contest in Modeling**

Spring 2004

Certificate of Achievement:

Worked in team of 3 to solve an application oriented problem. Used Excel to observe long-term behavior of problem and wrote computer code in C++ to simulate mathematical algorithm.

#### **PROFESSIONAL DEVELOPMENT:**

- Attended NCMATYC, Spring 2014, Spring 2016, Spring 2017
- Completed Online Teaching in Blackboard Certification Course through RCCC, Spring 2014
- Attended Math Curriculum Improvement Project (CIP) Conference, Spring 2014
- Attended RCCC Summer Institute. Earned College Transfer and Academic Advising Certifications. Also earned Accessibility and Copyright Law Training Certifications. Attended annually, 2011-2015
- Attended ICTCM Math Technology Conference, Spring 2012
- Attended *Instructional Design* Seminar at CCC, Guest Speaker: Dr. Diane Chapman of NC State University, September 2010
- Attended *Best Practices for Online Course Design* at CCC, Guest Speaker: Dr. Diane Chapman of NC State University, March 2010
- Attended *Managing Online Education* Online Seminar provided by The Teaching Professor, October 2009
- Attended *Professional Stress Management* Seminar at CCC, Guest Speaker: Steve Leatherwood, MA, LPC of Shelby NC, October 2009

- Attended Weekly Pedagogy Training Seminars during graduate studies, Appalachian State University (Aug 2004-Dec 2005)

#### **PROFESSIONAL INVOLVEMENT:**

- Co-Authored Article *Tessellations: Tiling the Plane* published in The Centroid – The Journal of the North Carolina Council of Teachers of Mathematics Volume 44, Issue 1 of Fall 2018 (with Dr. Holly Hirst)
- Volunteer Math and Statistics Tutor for RCCC Student Tutoring & Academic Resource Center, Spring 2016
- Summer Institute Advisory Committee for RCCC, new member Spring 2016
- Center for Teaching and Learning (CTL) Advisory Committee for RCCC, new member Spring 2016
- Master Advisor, selected by committee, specializing in overall curriculum interpretation, planning, and academic advising for students, Fall 2013 & Spring 2014
- NC State Redesign of the NCDAP Math Placement Test, redeveloping state standards for college math courses, Spring 2013
- QEP Committee for RCCC, Fall 2011 & Spring 2012
- CCC&TI Quality Enhancement Program Committee (QEP), Fall 2009 & Spring 2010
- Schedule Committee- Restructured CCC&TI Course Scheduling, Spring 2010
- Speaker for Colleague Training Seminar, Tea & Technology: *Incorporating the Smart Podium in the Classroom*, December 2009
- Guest Speaker at Guy Jacobson Memorial Mathematics Colloquium: *A Mathematician's Views on Minesweeping and Partying*. Topics: graph theory & probability, November 2008
- Wrote manual entitled *Cultural Differences Observed in Mexico: Suggestions for Mathematics Instructors when Teaching Students with Limited English Proficiency*, August 2006