

Jason Samuels

Assistant Professor of Mathematics
CUNY-BMCC

C.V.

Education

PhD	Mathematics Education	Columbia University	2010
MS	Mathematics	SUNY-Stony Brook	2000
BS	Mathematics	Duke University	1996

Academic Positions

Assistant Professor	CUNY-BMCC	2010-present
Instructor	CUNY-BMCC	2005-2010
Instructor	Bergen CC (NJ)	2004-2005
Instructor	South Suburban College (IL)	2002-2004

Research Interests

Use of local linearity in calculus instruction
Visualization in mathematics education
Technology in mathematics education
Problem Solving

Books and Book Chapters

Samuels, J. (2012) *The Use of Technology and Visualization in Calculus Instruction*.
Saarbrücken, Germany: Lambert Academic Publishing.

Refereed Publications

- Samuels, J. (2012) The Effectiveness of Local Linearity as a Cognitive Root for the Derivative in a Redesigned First-Semester Calculus Course. In S. Brown, S. Larsen, K. Marrongelle, and M. Oehrtman (Eds.) *Proceedings of the 15th Annual Conference on Research in Undergraduate Mathematics Education (CRUME)*, Portland, OR: The Special Interest Groups of the Mathematical Association of America on Research in Undergraduate Mathematics Education (SIGMAA-RUME), p155-161.
- Samuels, J. (2012) An Innovative Approach to Derivative Instruction: Using Technology to Explore Local Straightness. *Abstracts of Papers Presented to the American Mathematical Society*, 33(1), p511.
- Samuels, J. (2011) The relationship between learner characteristics and learning outcomes in a revised first-semester calculus course. In Wiest, L & Lamberg, T (Eds.) (2011) *Proceedings of the 33rd Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*. Reno, NV: University of Nevada, Reno, p666-674.
- Samuels, J. (2010) The use of technology and visualization in calculus instruction. In *Proceedings of the Second Annual Teachers College Educational Technology Conference*, New York City: Columbia University Teachers College, p63-65.
- Krauss, D & Hirsch, J & Samuels, J & Sanchez-Bravo, G & Nguyen, P. (2009) Thermoregulatory Estimate for the Threshold Body Size of the Evolution of Feathers in Dinosaurs. *Journal of Vertebrate Paleontology*, 29(3) supplement. 69th Annual Meeting, Society of Vertebrate Paleontology.

Other Publications

- Samuels, J. (2012). [Review of the book: *What does understanding mathematics mean for teachers?: Relationship as a metaphor for knowing*, by Y. Handa].
- Samuels, J. & Heath, DJ. (2010) Local Linearity Mathlet (computer application for learning calculus), published by PLATO Inc.
- Samuels, J. (2007) Divide Greater Numbers. *Math Professional Resources Handbook – Grade 3*. Boston: Houghton Mifflin.
- Samuels, J. (2007) Multiplication and Division Properties, Expressions, and Equations. *Math Professional Resources Handbook – Grade 4*. Boston: Houghton Mifflin.
- Samuels, J. (2007) Integers. *Math Professional Resources Handbook – Grade 5*. Boston: Houghton Mifflin.
- Samuels, J. (2007) Integers. *Math Professional Resources Handbook – Grade 6*. Boston: Houghton Mifflin.

Refereed Presentations

- Samuels, J. (2012) A straight path to calculus understanding. Presented at the 2012 New York State Mathematical Association of Two-Year Colleges (NYSMATYC) Conference, Valhalla, NY.
- Samuels, J. (2012) A New Way to Teach the Derivative - Using Technology and Local Straightness. Teachers Teaching with Technology Conference, Jamaica, NY.
- Samuels, J. (2012) A New Way to Teach the Derivative: Using Local Linearity. The 2012 Annual Meeting of the Metro New York Section of the Mathematical Association of America (MAA-Metro NY), NY, NY.
- Samuels, J. (2012) A New Way to Teach the Derivative Using Applets. 24th annual International Conference on Technology in Collegiate Mathematics (ICTCM-24), Orlando, FL.
- Samuels, J. (2012) The Effectiveness of Local Linearity as a Cognitive Root for the Derivative in a Redesigned First-Semester Calculus Course. 15th Annual Conference on Research in Undergraduate Mathematics Education (CRUME), Portland, OR.
- Samuels, J. (2012) An Innovative Approach to Derivative Instruction: Using Technology to Explore Local Straightness. Joint Mathematics Meetings (JMM), Boston.
- Samuels, J. (2011) Calculus redesigned: A new approach to calculus instruction. 37th AMATYC Annual Conference, Austin, TX.
- Samuels, J. (2011) A better way to teach calculus. 37th AMATYC Annual Conference, Austin, TX.
- Samuels, J. (2011) The Relationship Between Learner Characteristics and Learning Outcomes in a Revised First-Semester Calculus Course. 33rd Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), Reno, NV.
- Samuels, J. (2011) A new way to teach calculus – with visualization, technology and local linearity. MAA MathFest, Lexington, KY.
- Samuels, J. (2011) Better graphs, better formulas, and a little technology – making statistics a more unified course. MAA MathFest, Lexington, KY.
- Samuels, J. (2010) The use of technology and visualization in calculus instruction. Teachers College Educational Technology Conference, New York.

Invited Presentations

- Samuels, J. (2011). A New Way to Teach Calculus: The Use of Technology, Visualization, and Local Linearity in Calculus Instruction. Presented to the Mathematics Department at BMCC, NY NY.
- Samuels, J. (2011). A New Approach to Calculus Instruction. Presented to the Calculus Research Group, webinar.
- Samuels, J. (2004). Math on a rainy afternoon: Godel's incompleteness theorem, its historical context and future implications. Presented for the Undergraduate Mathematics Seminar at Elmhurst College, Elmhurst IL.

Grants, Projects and Awards

- 2012 BMCC Faculty Development Grant of \$3000 for “Investigation of Student Learning Paths in a Reorganized Calculus Curriculum” - PI
- 2012 Service Teaching and Research (STaR) Fellow, NSF-funded program for early career mathematics educators, to spend summer in Park City, UT at the Park City Math Institute, for workshops and networking
- 2011 BMCC E-Learning Grant of \$4000 for “An Improved Method for Online Calculus Instruction” – PI
- 2010-2011 OLI/OLPU Grant from the Gates Foundation coordinated by CUNY, Carnegie Mellon and Ithaca - participating instructor
- 2009-10 Eugene Hellmich Fellowship (Columbia University, Teachers College)
- 2007-2008 PSC-CUNY Grant of \$3000 for “The Use of Interactive Technology in Calculus Instruction” - PI
- 2005-06 Floosie Bruyning Fellowship (Columbia University, Teachers College)
- 2004-05 Eugene Hellmich Fellowship (Columbia University, Teachers College)
- 2003-2004 Project NEXT Fellow (for promising new faculty) (MAA, Illinois)

Courses Taught

- Algebra (Intro, Intermediate, College)
- Calculus (I,II)
- Statistics (Intro, Honors)
- Finite/Discrete Mathematics
- Math for Respiratory Therapy
- Foundation of Mathematics (for teachers)

Coursework

- 81 credits of graduate course work in Mathematics, including study in: topology, algebra, real analysis, complex analysis, differential geometry, algebraic topology, dynamical systems, Lie groups, mathematical physics
- 39 credits of graduate course work in Education, including study in: mathematical thinking, mathematical teaching and learning, mathematics curriculum, visualization, psychology, statistics, instructional design, educational technology, research methods

Professional Activities

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| Math Team coach (BMCC) | 2006-present |
| team finished first in national contest 3 years in a row | |
| Math major advisor (BMCC) | 2011-present |
| Organizing Committee of the CUNY Math Challenge (CUNY) | 2008-present |
| Freshman-level Mathematics Course Committee (BMCC) | 2005-present |
| Calculus Committee (BMCC, Bergen CC) | 2004-present |
| Technology Committee (BMCC, Bergen CC, SSC) | 2002-present |
| Organizing Committee for the 2012 Annual Conference of the Metro NY Section of the MAA | 2011-2012 |
| Planning Committee, BMCC Technology Day 2012 | 2011-2012 |
| Search Committee for Technology Supervisor (BMCC) | 2010 |
| CCCIR grant reviewer (CUNY) | 2008 |
| PSC-CUNY grant reviewer | 2006 |
| Distance Learning Committee (SSC) | 2002-2004 |
| Textbook selection: Calculus (SSC, chair), college algebra (SSC, chair), statistics (SSC, BMCC) | |

Professional Organizations

North American Chapter of the International Group for the Psychology of Mathematics
Education (PME-NA)

American Mathematical Association of Two-Year Colleges (AMATYC)
currently serving on the Math Intensive Committee and the Innovative Teaching and
Learning Committee (helped draft the AMATYC position paper on Open Educational
Resources)

Mathematical Association of America (MAA)
member of the Special Interest Group for Research in Undergraduate Mathematics Education
(SIGMAA RUME)