

CURRICULUM VITAE

**Aimee J. Ellington**  
Virginia Commonwealth University

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**Education:**

**University of Tennessee** – Knoxville, Tennessee, 2000

**Doctor of Philosophy in Mathematics Education**

Dissertation – “The Effects of Hand-held Calculators on Precollege Students in the Mathematics Classroom – A Meta-Analysis.”

**University of North Texas** – Denton, Texas, 1993

**Master of Science in Mathematics**

Research Project – “NP Completeness and the Graph Coloring Problem”

**Columbia Union College** – Takoma Park, Maryland, 1991

**Bachelor of Science in Mathematics with Computer Science Minor**

Twenty hours toward secondary education certification.

**Academic Appointments and Other Significant Work Experience:**

**Virginia Commonwealth University** – Richmond, Virginia, 2007 – Present

Associate Professor, Department of Mathematics & Applied Mathematics

**Virginia Commonwealth University** – Richmond, Virginia, 2001 – 2007

Assistant Professor, Department of Mathematics & Applied Mathematics

**University of Tennessee at Chattanooga** – Chattanooga, Tennessee, 1994 – 2001

Instructor, Department of Mathematics

**Southern Adventist University** – Collegedale, Tennessee, 1993 – 1994

Instructor, Department of Mathematics

**University of North Texas** – Denton, Texas, 1991 – 1993

Teaching Fellow, Department of Mathematics

**Memberships In and Service To Professional Organizations:**

**Memberships:**

- Mathematical Association of America, Member 1993 – Present
- National Council of Teachers of Mathematics, Member 1995 – Present

- Greater Richmond Council of Teacher of Mathematics, Member 2001 – Present
- School Science and Mathematics Association, Member 2005 – Present
- Greater Richmond Council of Teachers of Mathematics (GRCTM), Program Committee Member for Fall 2002 Conference entitled “Infinity and Beyond” that was held at the Maggie L. Walker Governor’s School on October 27, 2002

**Reviewing for Refereed Journals:**

- *Journal for Research in Mathematics Education*, National Council of Teachers of Mathematics, 2003 – Present
- *Mathematics and Computer Education*, The MATYC Journal, 2002 – Present
- *School Science and Mathematics*, School Science & Mathematics Association, Inc. 2006 – Present
- *On-Math, Online Journal of School Mathematics*, National Council of Teachers of Mathematics, 2007 – Present

**Reviewing for Competitive Grant Proposals**

- Proposals for the National Science Foundation’s Course, Curriculum, and Laboratory Improvement program, Phase 1, 55 – 70 grants awarded, maximum of \$200,000 each, July 2007
- Proposals for the National Science Foundation’s Course, Curriculum, and Laboratory Improvement program, Phase 1, 55 – 70 grants awarded, maximum of \$200,000 each, July 2006

**Reviewing for Textbook Publishers**

- *Introductory Linear Algebra with Applications* 7<sup>th</sup> ed. textbook by B. Kohlman & D. Hill for Prentice Hall Publishing, October 2003
- *Elementary Linear Algebra* 9<sup>th</sup> ed. textbook by H. Anton for Wiley Publishers, March 2004
- *Survey of Calculus* textbook for McGraw-Hill Higher Education, 2002

**Special Awards, Fellowships, and Other Honors:**

Academic Achievement Award , Univeristy of Tennessee at Knoxville, College of Education, 2000

Outstanding Teacher Award, University of Tennessee at Chattanooga, Student Support Services, 1995 – 1996

### **Grants and Contracts:**

National Science Foundation Institutes: Preparing Virginia's Mathematics Specialists (with W. Haver, D. Walston, E. Gross, and V. Inge), co-Principal Investigator, \$3,726,915, August 2004 – July 2009.

Virginia Department of Education, Preparing Highly Qualified Middle School Mathematics Teachers Across Virginia, sub-award through the University of Virginia from the Virginia Department of Education through federal NCLB act, Principal Investigator for subaward, \$44,891, March 2006 – September 2007.

Virginia Department of Education, Preparing Highly Qualified Middle School Mathematics Teachers Across Virginia, sub-award through the University of Virginia from the Virginia Department of Education through federal NCLB act, Principal Investigator for subaward, \$69,660, May 2005 – September 2006.

National Science Foundation, Enhancing Workforce Preparation in Computer Science, Engineering, and Mathematics (with R. Farley, W. Haver, R. Moore, and B. Cregar), co-Principal Investigator, \$398,748, October 2002 – June 2006

Academic Technology Faculty Mentoring Grant, Principal Investigator, Dell laptop and geometry software (approximately \$2500), 2004 – 2005

### **Major University, College and Department Committees**

#### **University:**

- College of Humanities & Sciences Representative to Faculty Senate, 2004 – 2007
- Faculty representative on Student Activities Advisory Committee (SAAC), 2004 – 2006
- Commencement Marshall, May Graduation, 2003 – 2006
- Member of Selection Committee for the Board of Visitors Award, 2006 – 2007
- Member of Nominating Committee for Who's Who in American Colleges and Universities, February 2006
- Member of the VCU Walking Team, Spring 2007
- Member of VCU Heart Walk Team, Walk to benefit the American Heart Association, October 29, 2005

- Member of Faculty Team to welcome students and their families to VCU, Move-In Day, August 21, 2005 & August 20, 2006

#### **College of Humanities & Sciences:**

- Member of the Selection Committee for the Board of Visitors Award, 2006 – 2007
- Department of Mathematics and Applied Mathematics Representative to Faculty Council, 2006
- Member of Task Force to determine suitable course alternatives for students with documented disabilities in mathematics and foreign language, 2005 – 2006
- Member of Selection Committee for College of Humanities & Sciences Faculty Awards, 2004 – 2005
- Junior Faculty Presenter at the Faculty Mentoring Luncheon devoted to Teaching, October 12, 2004
- Evaluator of written materials for the General Education Assessment pilot project for SACS, May 14 – 16, 2003

#### **School of Education:**

- Member of STEP Committee for VCU’s Standards-Based Teacher Education Program in Mathematics and English Education, 2003 – Present
- Member of META Committee for developing an Interdisciplinary Bachelor of Science degree program for prospective K-5 school teachers, 2004 – Present

#### **Department of Mathematics and Applied Mathematics:**

- Member of the Executive Committee of the Department of Mathematics and Applied Mathematics, January 2007 – Present
- Member of the Management Team for the project “Preparing Virginia’s Mathematics Specialists” supported by a National Science Foundation Mathematics and Science Partnership grant, August 2004 – Present
- Member of the Management Team for the project “Mathematics Specialists in K-5 Schools: Research and Policy Pilot Study” supported by a National Science Foundation grant, June 2004 – Present
- Member of the Management Team for the project “Preparing Future Middle School Mathematics and Science Teachers: An Opportunity for Virginia” supported by a US

Department of Education Funds for the Improvement of Post Secondary Education grant, January 2002 – December 2005

- Chair of Undergraduate Credentials Committee, 2004 – 2007 (member since 2001)
- Member of Math 490 Mathematical Expositions Committee, 2004 – Present
- Research Director for the Gateway Committee for Project PRISM: Producing Results in Science and Mathematics, 2003 – Present
- Chair of SACS Assessment Committee, 2007– Present (member since 2002)
- Mathematics Department Representative to College of Humanities & Sciences Open House, October 16, 2004

## **Significant Teaching, Research, Professional, or Administrative Experience**

### **Research**

Understanding the Development, Role, and Impact of Mathematics Specialists, with Joy Whitenack in the School of Education, VCU IRB #3827, funded through the project “Preparing Virginia’s Mathematics Specialists” supported by a National Science Foundation Mathematics and Science Partnership grant, August 2004 – 2009

### **Teaching**

#### **Courses Redesigned or Introduced at Virginia Commonwealth University:**

- Math 362 Algebra and Functions – Redesigned Fall 2007
- Math 504 Algebraic Structures – Redesigned Spring 2007
- Math 361 Numbers and Operations – Introduced Spring 2006
- Math 661 Numbers and Operations for K-5 Mathematics Specialists – Introduced Summer 2004
- Math 554 Using Technology in the Teaching of Mathematics – Introduced Fall 2004
- Math 303 Investigations in Geometry – Redesigned in Spring 2003
- Math 505 Modern Geometry – Redesigned in Fall 2003
- Math 691 Geometry with Applications – Introduced in Fall 2002

#### **Courses Taught:**

##### Virginia Commonwealth University, 2001 – Present:

- Math 141 Algebra with Applications
- Math 200 Calculus I
- Math 303 Investigations in Geometry

- Math 310 Linear Algebra
- Math 361 Numbers and Operations
- Math 504 Algebraic Structures
- Math 505 Modern Geometry
- Math 554 Using Technology in the Teaching of Mathematics
- Math 591 Euclidean and Non-euclidean Geometry
- Math 591 Linear Algebra for Educators
- Math 691 Geometry with Applications
- Math 661 Numbers and Operations for K-5 Mathematics Specialists

University of Tennessee at Chattanooga, 1994 – 2001:

- Math 105 Elementary Algebra
- Math 106 Intermediate Algebra
- Math 123 Mathematics in our Modern World
- Math 131 College Algebra
- Math 136 Calculus for Management, Life, and Social Sciences
- Math 144 Precalculus I
- Math 145 Precalculus II
- Math 151 Calculus I
- Math 152 Calculus I Laboratory
- Math 161 Calculus II
- Math 210 Introductory Statistics
- Math 214 Principles of Elementary Mathematics

Southern Adventist University, 1993 – 1994:

- Math 080 Elementary Algebra
- Math 103 Survey of Mathematics
- Math 120 Precalculus Algebra
- Math 181 Calculus I
- Math 200 Elementary Linear Algebra

**Advising/Research Committees**

- Advisor for Mathematical Sciences undergraduate majors, 2001 – Present
- Advisor for Secondary Mathematics track within Mathematics major, 2001 – Present
- Advisor for BS in Science with mathematics concentration track for preservice middle school teachers, 2001 – Present
- Masters Project Advisor for Angela Wood, “Characteristics in the Fourth Dimension”, completed August 10, 2004
- Masters Project Advisor for Cynthia Didawick, “The Solid Story – A Study of the Platonic Solids”, completed July 30, 2004

- Masters Project Advisor for Charity Manis, “Does Attendance Rates of Students Correlate to the Standard of Learning Math Test Scores in Grades 5 and 8?”, completed June 22, 2004
- Masters project committee chair for Jessica Smith, “The Importance of Experimental Design In Water Quality Monitoring Projects: Christians Creek”, completed August 5, 2004
- Masters project committee chair for Rebecca Beale, “Thermal Characteristics of Painted and Unpainted Eastern Bluebird (*Sialia sialis*) Nest Boxes”, completed August 5, 2004
- Masters project committee member for Kristina Anthony, “The Mathematics of Tidal Prediction”, completed July 15, 2004
- Masters project committee member for Dorothea Martin, “Polychlorinated Biphenyls (PCB) Levels in Blue Catfish from Portions of the James River”, completed December 10, 2005

## Scholarly Contributions

### Refereed Papers Published or In Press:

Ellington, A. J. (2007) A capstone course for pre-service mathematics teachers which uses technology as its unifying theme, *Mathematics and Computer Education*, 41 (1), 55 – 66.

Ellington, A. J. & Haver, W. E. (2006). The impact of assessing introductory mathematics courses. In B. Madison (Ed.), *Assessment of Student Learning in College Mathematics: Towards Improved Programs and Courses* (pp. 76 – 96). Tallahassee, FL: Association for Institutional Research.

Ellington, A. J. & Haver, W. E. (2006). Contribution of a first year mathematics course to quantitative literacy. In R. Gillman (Ed.), *Current Practices in Quantitative Literacy* (pp. 97-103). Washington, DC: Mathematical Association of America.

Ellington, A. J. (2006). The effects of graphing calculators on student achievement and attitude levels in mathematics – A meta-analysis. *School Science and Mathematics*, 106 (1) 16-26.

Ellington, A. J. (2006). An assessment of general education mathematics courses’ contribution to quantitative literacy. In L. Steen (Ed.), *Supporting Assessment in Undergraduate Mathematics* (pp. 81-85). Washington, DC: Mathematical Association of America.

Ellington, A. J. (2005). A modeling-based approach to college algebra. *Academic Exchange Quarterly*, 9 (3), 131-135.

Ellington, A. J. (2005). A modeling-based college algebra course and its effect on student achievement. *Primus*, 15 (3), 193-214.

Hardin, J. R., & Ellington, A. J. (2005). Using multimedia to facilitate software instruction in an introductory modeling course. *INFORMS Transactions on Education*, 5 (2), January 2005 online (ite.pubs.informs.org)

Ellington, A. J. (2004). Investigations in geometry – A hands-on course for 6-8 preservice teachers. *Journal of Mathematics and Science: Collaborative Explorations*, 7, 17-21.

Ellington, A. J. (2004). The calculator's role in mathematics attitude. *Academic Exchange Quarterly*, 8 (2), 110-114.

Ellington, A. J. (2003). A meta-analysis of the effects of calculators on students in precollege mathematics classes. *Journal for Research in Mathematics Education*, 34 (5), 433-463.

#### **Papers Under Review:**

Ellington, A. J. & Hardin, J. R. The Use of Video Tutorials in a Mathematical Modeling Course Taken by Pre-service Teachers, *Mathematics and Computer Education*, submitted January 2007

#### **Invited Publications:**

Ellington, A. J. (2001). An annotated list of web sites for mathematics educators. *Journal of Adventist Education*, 63 (5), 43-45.

Dessart, D. J., DeRidder, C. M., & Ellington, A. J. (1999). The research backs calculators. In Z. Usiskin (Ed.), *Mathematics Education Dialogues* (Vol. 2, No. 3, pp. 6). Reston, VA: National Council of Teachers of Mathematics.

#### **Research Presentations at Professional Meetings:**

Whitenack, J., Ellington, A., Schneider, P., Warren, G., Adler, L., Eberle, K. Teachers Exploring Place Value and the Operations Using DMI Materials, Regional Meeting of the National Council of Teachers of Mathematics, October 2007

Campbell, P., Heaton, R., Whitenack, J. W., Nelson, B. S., & Ellington, A. J. *The Development, Activity, Pedagogical Practices and Impact of Mathematics Coaches in Elementary and Middle Schools*, Annual Meeting of the American Educational Research Association, April 2007

Ellington, A. J., Inge, V., & Whitenack, J. W. *Assessing K-5 Teacher Leaders' Mathematical Learning: What Have the Test Makers and the Test Takers Learned?*

Annual Meeting of the National Council of Supervisors of Mathematics, Atlanta, GA, March 2007

Whitenack, J. W., Heaton, R., & Ellington, A. J. *Developing Case Studies of Elementary and Middle Level Teacher Leaders*, Annual Meeting of the National Council of Supervisors of Mathematics, Atlanta, GA, March 2007

Burrill, G., Ellington, A. J., & Zbiek, R. M. *The Impact of Graphing Calculators on Student Performance: Implications for the Classroom*, Research Pre-session for Annual Meeting, National Council of Teachers of Mathematics, Atlanta, GA, March 2007

Whitenack, J. W. & Ellington, A. J. *Teachers Explore the Nature of Rational Numbers: A Case for Inquiry in a Mathematics Specialist Program*, Joint Meetings of the American Mathematical Society & Mathematical Association of America, New Orleans, LA, January 2007

Ellington, A. J. *The Effects of Graphing Calculators on Student Achievement and Attitude Levels in Mathematics – A Meta-Analysis*, Annual Meeting, National Council for Teachers of Mathematics, St. Louis, MO, April 2006

Dick, T., Ellington, A., Heaton, R., Newborn, D., Whitenack, J. *Preparing Mathematics Specialists*, Research Pre-session for Annual Meeting, National Council for Teachers of Mathematics, St. Louis, MO, April 2006

Ellington, A., Haver, W., Inge, V., & Whitenack, J. *Quality of Virginia's Mathematics Specialists*, 2006 Learning Network Conference – Teacher Quality, Quantity, and Diversity, Washington, DC, January 2006

Agras, N., & Ellington, A. *Building Learning Communities*, Presentation and Panel Discussion for Project NEXT participants at the Joint Meetings of the American Mathematical Society & Mathematical Association of America, San Antonio, TX, January 2006

Ellington, A. J. *A Modeling-based College Algebra Course and Its Effect on Student Achievement*, Joint Meetings of the American Mathematical Society & Mathematical Association of America, San Antonio, TX, January 2006

Ellington, A. J. *Calculators in the Classroom – A Review of Recent Research Findings*, Southwest Consortium for the Improvement of Mathematics and Science Teaching (SCIMAST) Spring Forum, Baton Rouge, LA, April 2004

Cai, J., Ellington, A., Izsak, A., Silver, E., & Williams, S. *Publishing in the Journal for Research in Mathematics Education*, 90 minute Research Pre-session talk at the Annual Meeting of the National Council of Teachers of Mathematics, Philadelphia, PA, April 2004

Ellington, A. J. *An Assessment of the Contribution of Two General Education Mathematics Courses on the Quantitative Reasoning of Students*, Joint Meetings of the American Mathematical Society & Mathematical Association of America, Phoenix, AZ, January 2004

Ellington, A. J. *Graphing Calculators in the Classroom – What Does the Research Say?* VCU Mathematics Department Colloquium, Richmond, VA, December 2003

Ellington, A. J., & Farley, R. W. *Virginia Commonwealth University B.S. in Science Program* Statewide Conference on the Preparation of Middle School Science and Mathematics Teachers, Harrisonburg, VA, October 2003

Ellington, A. J. *Math 303 Investigations in Geometry – A Hands-on Course for K-8 Preservice Teachers* Statewide Conference on the Preparation of Middle School Science and Mathematics Teachers, Harrisonburg, VA, October 2003

Ellington, A. J. *Calculators in the Classroom: A Review of Recent Research Findings* Annual Meeting, National Council for Teachers of Mathematics, San Antonio, TX, April 2003

Ellington, A. J. *An Assessment of General Education Mathematics Courses Contribution to Quantitative Literacy at Virginia Commonwealth University*, Joint Meetings of the American Mathematical Society & Mathematical Association of America, Baltimore, MD, January 2003

Ellington, A. J. *Assessing Quantitative Literacy* Mathematical Association of America PREP Assessment Workshop, Baltimore, MD, January 2003

Ellington, A. J. *Calculators in the Classroom: A Look at Results of Recent Research* Spring Conference, Greater Richmond Council for Teachers of Mathematics, Richmond, VA, March 2002

Ellington, A. J. *Assessing The Quantitative Literacy Skills of Students Who Complete A Contemporary Mathematics Course* FIPSE Sponsored Colloquium, Richmond, VA, July 2002

Ellington, A. J. *Preparing Middle School Teachers* FIPSE Sponsored Colloquium, Richmond, VA, July 2002

Ellington, A. J. *Assessing Quantitative Literacy* Mathematical Association of America PREP Assessment Workshop, Richmond, VA, May 2002

Ellington, A. J. *Calculators in the Classroom: What Does the Research Say?* Joint Meetings of the American Mathematical Society & Mathematical Association of America, San Diego, CA, January 2002

Ellington, A. J. *The Effects of Calculators in the Classroom – Results of a Meta-Analysis*  
Richmond City Mathematics Teachers Colloquium, Richmond, VA, August 2001

Ellington, A. J., Hard, D., & Pratt, E. *Statistics for the Classroom: Focusing Teachers' Attention on Ongoing Teaching and Learning* 45<sup>th</sup> Annual Conference of the Tennessee Mathematics Teachers Association, Knoxville, TN, April 1997