

ABRAHAM AYEBO

Mailing Address

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RESEARCH/SCHOLARLY INTERESTS

Research and classroom applications in K-12 (especially middle school/ high school) teaching and learning, particularly in the areas of mathematics and statistics education, and educational equity, with special interests in

- Mathematical problem solving and reasoning
- Geometry and spatial skills
- Gifted education
- Pre-service and in-service teacher education
- Educational technology

ACADEMIC DEGREES

Ph.D., Mathematics Education (2010)

University of Nevada, Reno
Advisor: Lynda R. Wiest

M.S., Mathematics (2002)

University of Nevada, Reno

B. Sc., Mathematics (1996)

Kwame Nkrumah University of Science and Technology, Kumasi, Ghana

PROFESSIONAL EXPERIENCE

Employment

Assistant Professor, Department Mathematics /School of Education, North Dakota State University, Fargo, ND, 2012 – present

Lecturer, Department Mathematics, Computer Science and Statistics, Purdue University Calumet, Hammond, Indiana, 2010 - 2012

Graduate Assistant, Department of Educational Specialties, College of Education, University of Nevada, Reno, 2006 - 2010

Lecturer, Department of Mathematics, University of Nevada, Reno, 2002 - 2006

Teaching Assistant, Department of Mathematics, University of Nevada, Reno, 2000 - 2002

Secondary School mathematics teachers, Yaa Asantewaa Girls' Secondary School, Kumasi, Ghana, 1998 - 2000

University Courses Taught

North Dakota State University

Axiomatic Geometry (MATH 440/640), 2013

History of Mathematics (MATH 478/678), 2012

Differential Equations (MATH 266), 2013, 2014

Multivariate Calculus (MATH 259), 2012, 2013, 2014

Classroom Practice/Method of teaching mathematics (EDUC 481/681), 2013, 2014

Purdue University Calumet

Calculus for Business and Economics (MA 154), 2010 - 2012

Calculus II (MA 148), 2011 - 2012

Introductory Statistics (STAT 130), 2010 - 2012

Precalculus (MA 154), 2010 - 2012

University of Nevada Reno

Calculus I (MATH 181), 2002 - 2006

Calculus II (MATH 182), 2002 - 2006

Calculus for Business and Economics (MATH 176), 202 - 2006

Precalculus (MATH 154), 2000 - 2002

Method for teaching Elementary and Middle School Math (EDUC 413), 2008-2009

Publications

Ayebo, A. (in press). Teacher's perspectives on identifying and catering to the needs of mathematically gifted and talented students. *Malaysian Journal of Education*.

Assuah, C., & **Ayebo, A.** (in press). Lecturer's views on Ghana's undergraduate mathematics education. *International Journal of Education in Mathematics, Science and Technology*.

Okigbo, C., & **Ayebo, A.** (in press). Math for real: US Postage Rates. *Mathematics Teaching in the Middle School*.

Ayebo, A. (2014). Students views on learning Axiomatic Geometry using Geogebra. *Proceedings of the 12th International Conference on Education, Honolulu, Hawaii*, 942-946.

- Ayebo, A.** (2011). Voices from the Trenches: Teachers' perspectives on teaching mathematics to gifted/talented students. *Proceedings of the 33rd Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education*, 1260-1266.
- Wiest, L. R., **Ayebo, A.**, & Dornoo, M. D. (2010). Engaging all students with "impossible geometry." *Australian Senior Mathematics Journal*, 24(1), 57-63.
- Ayebo, A.**, & Wiest, L. R. (2010). Poematics: Exploring mathematics through poetry. *Mathematics Teaching in the Middle School*, 15(7), 378-381.
- Guiffrida, A. L., **Ayebo, A.**, & Yaber, Y. (2004). Inventory service measures under the Skew Exponential Power Distribution. *Proceedings of the 34th International Conference on Computers & Industrial Engineering*.
- Ayebo, A.**, & Kozubowski, T. J. (2003). An asymmetric generalization of Gaussian and Laplace laws. *Journal of Probability and Statistical Science*, 1(2), 187-210.

Conference Presentations

- Ayebo, A.** (2014, June). *The development of Pre-service Teachers' Technological Pedagogical and Content Knowledge (TPACK) in a Mathematics Methods Course*. Presentation conducted at the Science & Mathematics Teacher Imperative Conference, Milwaukee, WI.
- Ayebo, A.** (2014, March). *The mathematically gifted: How can we meet their needs?* Presentation conducted at the Annual Conference of the North Dakota Council of Teachers of Mathematics, Fargo, ND.
- Ayebo, A.** (2014, January). *Students views on learning Axiomatic Geometry using Geogebra*. Presentation conducted at the 12th International Conference on Education, Honolulu, Hawaii.
- Ayebo, A.** (2013, November). *Enhancing the Teaching and Learning of Mathematics using iPad Applications*. Presentation conducted at the School Science & Mathematics Association Annual Convention – San Antonio, TX
- Ayebo, A.** (2013, June). *Engaging Pre-service Mathematics Teachers with Smart Technology*, . Presentation conducted at the Science & Mathematics Teacher Imperative Conference, St. Louis, Missouri.
- Ayebo, A.** (2013, April). *Using Tablet Technology to enhance students' understanding of mathematics concepts*. Presentation conducted at the Annual Conference of the North Dakota Council of Teachers of Mathematics, Minot, ND.
- Ayebo, A.** (2011, October). *Voices from the Trenches: Teachers' perspectives on teaching mathematics to gifted/talented students*. Presentation conducted at the 33rd Annual

Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education , Reno, NV.

Ayebo, A., & Wiest, L. R. (2011, April). *Teachers' perspectives on teaching mathematics to gifted/talented students*. Presentation conducted at the Annual Convention of the American Educational Research Association, New Orleans, LA.

Ayebo, A., & Wiest, L. R. (2009, October). *Teachers' views on teaching mathematics to gifted/talented students*. Presentation conducted at the 108th Annual Convention of the School Science and Mathematics Association, Reno, NV.

Ayebo, A. & Amankonah, F. (2008, November). *Strategies for teaching mathematics to gifted and talented students*. Presentation conducted at the Regional Conference of the National Council of Teachers of Mathematics, Reno, NV.

Ayebo, A., & Wiest, L. R. (2008, October). *Teachers' perspectives on mathematics instruction for gifted/talented students*. Paper presented at the 2008 Annual Convention of the School Science and Mathematics Association, Reno, NV.

Wiest, L. R., **Ayebo, A.**, & Dornoo, M. D. (2008, April). *Engaging all students with "impossible geometry."* Paper presented at the 2008 National Council of Teachers of Mathematics Annual Meeting and Exposition Conference, Salt Lake City, UT.

Ayebo, A. (2002, July). *Asymmetric generalizations of Gaussian and Laplace laws*. Paper presented at the Institute of Mathematical Statistics Annual Meeting, Banff, Canada.

Editorial/Referee Experience

- Editorial Board Member, *Computers in the School* journal, Fall 2008 – present.
- Manuscript reviewer, *Mathematics Teaching in the Middle School* journal, Fall 2009 - present.
- Editorial Assistant, Proceedings of the 29th Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Lake Tahoe, NV, 2008.
- Manuscript reviewer, Proceedings of the 2012 Annual Convention of the American Educational Research Association, Vancouver, Canada.
- Manuscript reviewer, Proceedings of the 33rd Annual Conference of the North American Chapter of the International Group for the Psychology of Mathematics Education, Reno, NV, 2011

Grant Activity

- Noyce Scholarship Program at NDSU (\$800,000.00), Co-PI, Spring 2014, awarded.
- Provost Research and Scholarship Travel Fund (\$300.00), Spring 2014, awarded.
- North Dakota Education Collaborative (\$300,000), Co-PI, Fall 2013, declined.
- Expanding Your Horizons (\$1,000,000.00), Co-PI, Spring 2013, declined.
- North Dakota Educational Collaborative (\$5,000,000.00), Fall 2012, declined.

Honors and Awards

- Recipient, “Service above Self” Award from the Grant Institute to attend three-day Grant Writing workshop at the University of Nevada, Reno, January 2008.
- Recipient, Laha Award from the Institute of Mathematical Statistics to attend the Institute of Mathematical Statistics Annual Meeting in Banff, Canada, July 2002.

Professional Memberships

- National Council of Teachers of Mathematics
- American Educational Research Association
- National Association of Gifted Children
- School Science and Mathematics Association
- Mathematical Association of America
- North Dakota Council of Teachers of Mathematics

Student Advising/ Supervisory Committees

Undergraduate Senior Seminar Advising

Sean Lengenfelder, (2013). *The disparity of perception of problem difficulty between teacher and Students.*

Sarah Ukkelberg (2014). *Success in Introductory Calculus: The role of High School and Pre-calculus preparation.*

Graduate Committee member

Amanchi, Adithya S. (2014). *Applied nonparametric statistical tests to compare evolutionary and swarm intelligence approaches.* Computer Science, Masters

Mohamed D. Sylla (in progress), Statistics, Masters

REU Mentoring

Oshay Austin (2014). *An examination of question types in calculus textbooks using the Revised Bloom's Taxonomy.*

Other Service Activities

Advisor, African Students Association

Member, Mathematics Department Assessment Committee (2013-2014)

Member, Mathematics Department Tri-College Math Contest

Member, Mathematics Department Rao Exam for undergraduates

Member, Search committee for Teacher Education position (2014)