

Betty Jean Harmsen

Education

Ph.D. in mathematics, August 1995; University of Nebraska-Lincoln, Lincoln NE

Research area - difference equations; advisor, Dr, Allan Peterson

Certification, Special Education, K-12, University of Nebraska at Omaha, Omaha NE, 1978

Lifetime Teaching Certification, Mathematics and Biology, 7th - 12th grade, Nebraska

M.A. in mathematics, University of Nebraska-Lincoln, Lincoln NE, 1968

B.A. in mathematics, minor in biology, William Penn College, Oskaloosa IA; 1963

Experience

2007-15 Executive Director of Haiti Share, Inc. (non-salaried position)

2001-04 Nebraska Informatics Center for the Life Sciences, coordinator

1998-00 Dana College, Blair, NE, tenure track, assistant professor

1996-97 NW Missouri State University, Maryville, MO, tenure track, assistant professor

1995-96 University of Nebraska at Omaha, mathematics instructor

1990-95 University of Nebraska-Lincoln, Lincoln, NE, teaching assistant

1984-90 University of Nebraska at Omaha, math instructor

1977-82 Westside Alternative School, Omaha, NE, mathematics teacher

1976-77 Brownell-Talbot, Omaha, NE, math teacher (part-time)

1973-75 Westside High School, mathematics teacher (half-time)

1970-73 Westside High School, substitute teacher

1965-70 Westside High School, Omaha, NE, mathematics teacher

1964-65 University of Nebraska-Lincoln, teaching assistant

1963-64 Alvo-Eagle High School, Eagle, NE, mathematics teacher

Courses: Seventh grade math, remedial mathematics in high school and college, Algebra 1 and 2, Geometry, Trigonometry, Topics in Mathematics, College Algebra, Finite Mathematics, Business Calculus, Math for Elementary Teachers, Pre-Calculus, Calculus I, II, III, Differential Equations, Discrete Mathematics, Linear Algebra, Abstract Algebra.

Research Publications

Discrete Sturm-Liouville Problems with Nonlinear Parameter in the Boundary Conditions, joint work with Aihua Li, accepted by the Journal of Difference Equations and Applications in January, 2007.

Discrete Sturm-Liouville Problems with Parameter in the Boundary Conditions, joint work with Aihua Li, Journal of Difference Equations and Applications, (2002), Vol. 8 (11), pp. 969-981.

Using Remainder Polynomials to Solve Discrete Sturm-Liouville Problems, Dynamic Systems and Applications, Vol. 8 (1999), 461-470.

Discrete Versions of Continuous Isoperimetric Problems, joint work with Calvin Ahlbrandt, Journal of Difference Equations and Applications, (1998), Vol. 3, 449-462.

The (2,2) Right Focal Variational Problem, Communications in Applied Analysis, (1997), Vol. 1, No. 2, 167-183.

The Discrete Variational Problem: The Vector Case with Right Focal Constraints, PanAmerican Mathematical Journal, (1996), Vol. 6, No. 2, 23-37.

The Discrete Variational Problem with Right Focal Constraints, PanAmerican Mathematical Journal, (1995), Vol. 5, No. 1, 43-61.

Selected Research Talks

- 2004 The 24th Annual Southeastern-Atlantic Regional Conference on Differential Equations, Chattanooga, TN, October 22&23, 2004 (contributed)
- 2001 AMS Southeastern Section Meeting, Chattanooga, TN, October 5-6, 2001 (invited).
- 1998 AMS, Southeastern Section, University of Louisville, Louisville, KY (invited).
- 1998 First Pacific Rim Conference on Mathematics, City University of Hong Kong, Kowloon, Hong Kong (contributed).
- 1997 Third Midwest Southeastern Atlantic Joint Conference of Differential Equations, Vanderbilt University, Nashville, TN (invited).

Curriculum Development

- 1997-1982 Developed and implemented the math curriculum at Westside Alternative School.
- 1998-2000 Initiated a Basic Math Competency Program at Dana College and wrote the text for the program.

Selected Pedagogical Talks and Articles

- 2004 Two guest lectures in Genetic Sequence Analysis Class at the University of Nebraska Medical Center.
- 2000 Talk: Formulas: the Heart of Dana's Math Competency Program, Nebraska-S.E. South Dakota MAA Sectional, Nebraska Wesleyan University, Lincoln, NE, April 29, 2000.
- 1983 Article: Using the Front Page News to Teach Mathematics, 1983 NCTM Yearbook: "The Agenda in Action."
- 1983 Talks: Several pedagogical speeches on a local, state and national level.

Selected Professional Service

- Helped to organize the 2004 Nebraska EPSCoR State Conference on Bioinformatics and Bio-medical Computing, April 21, 2004, Omaha, NE.
- Refereed a paper for the Journal of Computational and Applied Mathematics, November 2000.
- Organized a special session for the Third Midwest Southeastern Atlantic Joint Conference of Differential Equations, Vanderbilt University, Nashville, Tennessee, 1997.
- Refereed a manuscript for the Pi Mu Epsilon Journal, 1996.
- Committees: curriculum, textbook selection, long-term planning, recruitment, faculty affairs.

Computer Skills

Microsoft Office, Adobe Illustrator, Photoshop & Indesign, Dreamweaver, Salesforce, Latex

Contact Information

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