

## PROMOTION RECOMMENDATION

**The University of Michigan-Dearborn  
College of Arts, Sciences, and Letters  
Department of Mathematics and Statistics**

Angela S. Krebs, assistant professor of mathematics and statistics, Department of Mathematics and Statistics, College of Arts, Sciences, and Letters is recommended for promotion to associate professor of mathematics and statistics, with tenure, in the Department of Mathematics and Statistics, College of Arts, Sciences, and Letters.

### **Academic Degrees:**

B.S.	1988	Mathematics, Michigan Technological University
M.S.	1991	Mathematics, Michigan State University
Ph.D.	1999	Mathematics Education, Michigan State University

### **Professional Record:**

1999-Present	Assistant Professor, University of Michigan-Dearborn
1998-1999	Instructor, University of Michigan-Dearborn
1991-1993	Instructor, Baker College of Flint
1988-1989	High School Teacher, Croswell-Lexington Community Schools

### **Summary of Evaluation:**

**Teaching:** Professor Krebs is rated excellent in her teaching. Her teaching responsibilities are the content and methods courses for students seeking elementary certification. The Department is responsible for all content and methods courses for elementary certification students. Professor Krebs has participated in the redesign and teaching of these courses. She also teaches and supports the content courses required of students seeking an endorsement in mathematics on their elementary certificate. Part of this support is working with the adjuncts that teach these courses. This is a critical role in that the Department and the mathematics education faculty are sensitive to the high quality and reputation of this endorsement program. The mathematics education faculty is also responsible for advising of the endorsement students.

**Research:** Professor Krebs is rated excellent in her research. She focuses on applied research in mathematics education. Her department was favorably impressed with her recent publication output and also with the research review letters, which emphasize that her research involves the mathematical reasoning of elementary school students that she then relates to the professional development of teachers.

### **Recent and Significant Publications:**

- A. Krebs, Studying students' reasoning in writing generalizations, *Mathematics Teaching in the Middle Schools*, 2005, v. 10, no. 6, 284-287.
- A. Krebs, Middle grades students' algebraic understanding in a reform curriculum, *School Science and Mathematics*, 2003, v. 103, no. 5.

- A. Krebs and K. Burgis, Using standards-based curriculum materials: A professional development model, *Journal of Mathematics Education Leadership*, 2003, v. 6, no. 2, 8-12.
- A. Krebs and K. Burgis, The mathematical education of Michigan elementary teachers, *Mathematics in Michigan*, 2003, v. 41, no. 2, 205.
- A. Krebs and K. Burgis, How likely is it? A probability unit from the Connected Mathematics Project, *Mathematics in Michigan*, 1996, v. 36, no. 3, 2-8.

**Service:** Professor Krebs is rated significantly capable in her service. The department noted that a very significant service area for Professor Krebs has developed recently through the advising of students seeking an elementary education major or minor in mathematics. Because the courses required for these majors are taught in the department, it is constructive that the advising is also taking place there. Strong professional activity was also noted as being very positive.

**External Reviewers:**

**Reviewer (A)**

“In my judgment, each of the seven published papers is of very good quality. The different papers address different audiences and have different purposes, but all have significant content and are very well written. The papers deal with important contemporary issues in mathematics education ... and they build on the best of current research and thinking in the field. They include interesting data from work with teachers and students, and they draw thoughtful conclusions from that work. In my judgment, the trajectory of work shown in Dr. Krebs’ publications gives very solid promise of future productivity.”

**Reviewer (B)**

“She has worked closely with teachers and with other mathematics educators. She is involved in looking closely at learners’ thinking. Perhaps the highest compliment is that I find her conference presentations and the materials that were sent to me helpful in my own understanding of the larger task of creating materials that will most effectively help children and teachers to learn the important ideas of mathematics. With respect to the work of others at a similar stage of professional development, I have been an external reviewer for tenure consideration for several people in recent years, and Dr. Krebs’ work is easily the most sophisticated of that group.”

**Reviewer (C)**

“Her writing that documents the effectiveness of a problem-centered curriculum (CMP) is extremely valuable because it helps to validate one of the main thrusts of NCTM’s *Principles and Standards*. Dr Krebs’ work in algebraic thinking, a topic that is just beginning to receive the attention it deserves, is critical in helping teachers understand the applications of this mathematical strand across the entire mathematical landscape. I find the work of Dr Krebs to be of the highest quality and superior to the work of others whom I have known at a similar stage of their academic careers. Given the primacy of the teaching mission at UM-Dearborn I find the quality and quantity of Dr. Krebs’ work to be exceptional.”

**Reviewer (D)**

“There are clear lines of research and focus in the scholarly activities of Dr. Krebs. The areas of task selection and analyses, assessment through problem solving, and teacher professional development are extremely critical areas for the mathematics education research and scholarly

communities. I am pleased to provide a positive assessment of Dr Krebs' scholarly contributions and potential as you consider her for tenure and promotion."

Reviewer (E)

"The scholarship produced by Dr. Krebs carries great importance to the field. Particularly appealing about her work is that although she studies the mathematical reasoning of students, she extends her work to professional development for teachers. Compared to other assistant professors I have known who are in institutions where teaching is primary and scholarly activity is highly valued, Angela has been very productive. The focus in her work, combined with the commitment to integrate research into practice is impressive."

Reviewer (F)

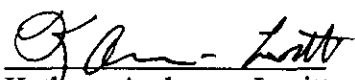
"I was so impressed with her as a person, her work ethic, and her knowledge and interest in mathematics and mathematics education that we offered her a position as a graduate student on our NSF-funded *Connected Mathematics Project* (CMP). She made a substantial contribution to our work on CMP and on other research projects that were associated with us. I have long argued that we need to help teachers see their classrooms as a source of data for problem solving. The manuscript, 'Analyzing Student Work as a Professional Development Activity,' gives a terrific boost to the strength of this argument."

Reviewer (G)

"The second component involves work that she has been doing at UM-Dearborn with her colleagues there, focusing on improving the teaching of mathematics courses for prospective teachers. This is a critically important area of work, as elementary teachers, in particular, tend to have weak content knowledge in mathematics. Mathematics teacher educators have struggled to find ways to address this issue, and the work of Krebs and her colleagues is pushing the field forward in this area."

**Summary of Recommendation:**

Professor Krebs has been rated excellent by the department review committee in the areas of research and teaching and significantly capable in service. She has been successful in the classroom with a demanding student audience. Her service has been very positively student oriented on campus and has a vigorous professional component. Her research output has appeared in respected journals and is well regarded. We are very pleased to recommend, with the strong support of the College of Arts, Sciences, and Letters Executive Committee, Angela S. Krebs for promotion to associate professor of mathematics and statistics, with tenure.



Kathryn Anderson-Levitt  
Dean  
College of Arts, Sciences, and Letters



Daniel Little  
Chancellor  
University of Michigan-Dearborn

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