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Yeping Li
Texas A&M University, yepingli@tamu.edu

W. James Lewis
University of Nebraska - Lincoln, jlewis@unl.edu

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EDITORIAL   **Open Access**

Recognizing and promoting interdisciplinary collaboration, leadership, and impact: award for interdisciplinary excellence in mathematics education (IEME award)

Yeping Li[1*] and W. James Lewis[2]

Introduction
The presentation of the Award for Excellence in Mathematics Education to Roger E. Howe in 2015 officially launched the award, with the goal of recognizing work of lasting significance and impact in advancing mathematics education as an interdisciplinary field, linking mathematics, educational studies, and practice. From the beginning, this unique award has emphasized *interdisciplinarity* in mathematics education, highlighting the importance of *boundary-crossing collaborations* among mathematicians, mathematics educators, scholars in other related fields, and practitioners of mathematics. To emphasize the importance of interdisciplinary collaboration in mathematics education, starting in 2019, the name of the award is changed from "Excellence in Mathematics Education" to "Interdisciplinary Excellence in Mathematics Education".

In the following sections, we provide further information about the rationale and background of the establishment of this award, and the unique features that help distinguish it from other prizes and awards in mathematics and mathematics education. The citations for previous awardees are also provided to highlight what this award aims to honor.

Why establish the IEME award?
The development of mathematics education as a field shows its close connections with multiple disciplines, especially mathematics. Before the twentieth century, mathematics education did not exist as a separate field,

nor were any organizations mainly concerned with the teaching and learning of mathematics as a subject. Not surprisingly, scholars who cared about the teaching and learning of mathematics were primarily mathematicians. But gradually and slowly, mathematics education started to develop around the turn of the twentieth century, when universities in several countries took steps to address the need to prepare more and better teachers (Kilpatrick 1992). The development of mathematics education in the first two-thirds of the twentieth century showed its deep roots in mathematics and, to a certain extent, in psychology. The majority of those people who are commonly recognized as having a significant influence on the teaching of mathematics, especially during the first two-thirds of the twentieth century, are all notable scholars such as Felix Klein (1849–1925), David Eugene Smith (1860–1944), and George Pólya (1887–1985) (see https://en.wikipedia.org/wiki/Mathematics_education), all of whom identified as mathematicians. The connections between mathematics and mathematics education were strong and apparent. In fact, mathematics education is still viewed as "the practice of teaching and learning mathematics, along with the associated scholarly research" in Wikipedia.

Mathematics education gradually gained some momentum in its development as a field starting in the second half of the twentieth century, when specific issues in diverse topic areas such as student learning, curriculum, testing, and teacher education, beyond teaching itself, began to be identified and studied. The growth of such studies and the attendant emergence of scholars who cared about such issues led to the establishment of new professional organizations such as National Council of Teachers of Mathematics (NCTM), conferences such as

* Correspondence: yepingli@tamu.edu
[1]Texas A&M University, College Station, TX 77843-4232, USA
Full list of author information is available at the end of the article

International Congress on Mathematical Education (ICME), and journals such as *Educational Studies in Mathematics*, the *Journal for Research in Mathematics Education*, and *ZDM*. Such establishments have also successfully led to the formation of much needed professional identities for mathematics educators, apart from the mathematics profession. As a possibly unintentional consequence, connections and communications between the mathematics community and the mathematics education community have waxed and waned over the years. As a result, there were times when too little or no discussion and exchange took place even when such exchange of ideas regarding the mathematical structure of the curriculum would have been appropriate or necessary. In fact, these two communities even got into "math wars" in the 1990s and 2000s, when the debate became overheated over the question of how and what mathematics can and should be taught and learned in school (Schoenfeld 2004; also see https://en.wikipedia.org/wiki/Math_wars). Such debates were evidenced not only at the national level, but also locally (Wu 2000) and in other education systems.

A positive takeaway from these debates is that it is good for the improvement of mathematics teaching and learning when diverse views are on the table. Indeed, the acrimony of the math wars that followed the publication of the NCTM *Standards* (1989) led to the inclusion of mathematics advisory groups from major mathematical societies during the creation of NCTM's (2000) *Principles and Standards*. There were some other efforts to search for the "common ground" (Mervis 2006). But such debates can also have much negative impact when such debates are not reconcilable and do not lead to possible resolutions. Given that there are no easy answers to the fundamentally important question of how and what mathematics can and should be taught and learned in school, it becomes apparent and important that collaborations among mathematicians, mathematics educators, and scholars in other fields including psychology need to be re-emphasized and expanded.

In the spirit of emphasizing the *interdisciplinarity* in mathematics education, and of valuing *cross-boundary collaborations* among mathematicians, mathematics educators, scholars in other related fields, and practitioners of mathematics, the College of Education and Human Development at Texas A&M University established the award. Its goal is to make a contribution to the international fields of mathematics and mathematics education, and to encourage the development of boundary-crossing collaboration and common ground between mathematicians and mathematics educators. The establishment of the award is important at a time when both the mathematics and the mathematics education communities have become mature entities that are entrusted with the responsibility of promoting and expanding interdisciplinary collaborations in areas related to mathematics education.

It is worth pointing out that *excellence* with respect to "interdisciplinary collaboration, leadership, and impact in mathematics education" is what the award is designed to highlight.

How does this award differ from other prizes and awards in mathematics and mathematics education?

The Award for Interdisciplinary Excellence in Mathematics Education is an award that is open to international communities related to mathematics education to recognize and promote interdisciplinary collaboration, leadership, and impact in mathematics education. The award is perhaps unique, as it emphasizes and values boundary-crossing collaborations for, and contributions to, the improvement of mathematics education. It can be used to recognize mathematicians, mathematics educators, scholars in other related fields, or practitioners of mathematics. In contrast, many of the professional society awards require the recipient to be a member of the society. Specifically, the IEME award differs from existing prizes and awards in both mathematics education and mathematics societies, as the following brief survey tries to show.

Prizes and awards in mathematics education societies

The International Commission on Mathematical Instruction (ICMI), founded in 1908, has been a commission of the International Mathematical Union (IMU) since 1952. It is a worldwide organization devoted to research and development in mathematical education at all levels (see https://www.mathunion.org/icmi). It has three notable awards (see https://www.mathunion.org/icmi/awards/icmi-awards). Two awards were established in 2000: the Felix Klein Award established to honor lifetime achievement in mathematics education and the Hans Freudenthal Award to recognize a major cumulative program of research. The Emma Castelnuovo Award was established in 2013 to recognize outstanding achievements in the practice of mathematics education.

The National Council of Teachers of Mathematics (NCTM) has one award, the NCTM Lifetime Achievement Award (see https://www.nctm.org/Grants-and-Awards/Lifetime-Achievement-Award/). It was established in 1994 to honor current or past members of NCTM who have exhibited a lifetime of achievement in mathematics education at the national level.

The special interest group (SIG) of American Education Research Association (AERA), research in mathematics education (RME), has two awards (see http://sigrme.org/awards/): SIG/RME early career publication award established in 2001 to recognize an outstanding mathematics education research publication by an early

career scholar, and SIG/RME distinguished scholar award established in 2006 to recognize the programmatic research of a distinguished scholar in the field of mathematics education.

The Board of Directors of the Association of Mathematics Teacher Educators (AMTE) has established several awards for excellence in mathematics teacher education in different categories including, teaching that started in 2006, leadership and service that started in 2007, and scholarship that started in 2008 (see https://amte.net/about/awards). These awards stress that the recipients should be an "active member of the mathematics teacher education community" but do not quite specify that they must be a member of AMTE.

Prizes and awards in mathematics societies

The American Mathematical Society (AMS), which is dedicated to research advancement and dissemination, gives out several prizes and awards, but only one is specifically related to mathematics teaching and learning (see http://www.ams.org/profession/prizes-awards/prizes). The "Award for Impact on the Teaching and Learning of Mathematics" is given annually to a mathematician (or group of mathematicians) who has made significant contributions of lasting value to mathematics education. This award clearly recognizes and values mathematicians' contribution to mathematics education, but restricts its recipients to mathematicians and does not emphasizes cross-disciplinary collaborations and contributions.

The Mathematical Association of America (MAA) has the mission of advancing the understanding of mathematics and its impact on our world. Its membership is open to university, college, and high school teachers, in addition to pure and applied mathematicians, and many others in different fields. Thus, there are quite a few prizes and awards in several different categories, including research, teaching, service, and lecture (see https://www.maa.org/programs-and-communities/member-communities/maa-awards). For example, in the category of research awards, the Mary P. Dolciani Award was established in 2012 to recognize a pure or applied mathematician who is making a distinguished contribution to the mathematical education of K–16 students in the United States or Canada. The Annie and John Selden Prize for Research in Undergraduate Mathematics Education was established in 2004 to recognize researchers, at most one every other year, who have established a significant record of published research in undergraduate mathematics education and who have been in the field for at most 10 years.

In the category of teaching awards, the Deborah and Franklin Tepper Haimo Award began in 1993 to honor college or university teachers being recognized as extraordinarily successful and whose teaching effectiveness has been shown to have had influence beyond their own institutions. The Henry L. Alder Award for Distinguished Teaching by a Beginning College or University Mathematics Faculty Member was first made in 2004 to honor beginning college or university faculty whose teaching has been extra ordinarily successful and had influence beyond their own classrooms. In the category of service awards, the Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service to Mathematics was first presented in 1990. This award recognizes such contribution that influences the field of mathematics or mathematical education in a significant and positive way on a national scale. It should be noted that for the Haimo Award, the Alder Award, and the Gung and Hu Award, the recipient must be a member of the MAA.

It is clear that all of these awards in the fields of mathematics education and mathematics provide great recognitions to scholars for their accomplishments in different categories, but they differ from the IEME Award. One common feature is that these awards and prizes are almost exclusively for either mathematics educators or mathematicians, depending on which society established that prize or award. Although both the Mary P. Dolciani Award and the Yueh-Gin Gung and Dr. Charles Y. Hu Award for Distinguished Service established in the MAA emphasize contributions to mathematical education, they recognize such contribution from the mathematics side and not specifically to promoting interdisciplinarity in mathematics education.

The context of establishing the IEME award at Texas A&M University

A workshop was held at Texas A&M University campus, College Station, Texas, from March 26–28, 2015. The workshop was dedicated to honoring Roger E. Howe on the occasion of his 70th birthday, and to recognizing his contributions to mathematics education. Howe is an eminent mathematician whose work spans the fields of representation theory, automorphic forms, harmonic analysis, and invariant theory. A member of the U.S. National Academy of Sciences and the American Academy of Arts and Sciences, he is widely recognized as a scholar. In addition, over the last 20 years, he has invested time and effort in the study and improvement of K–12 mathematics education, focusing on curriculum, teaching, and teacher preparation, especially at the elementary school level. In addition, Howe has been working to support and engage mathematicians in K–12 education.

The workshop, organized by scholars from four different institutions (Deborah Loewenberg Ball from the University of Michigan, W. James Lewis from the University of Nebraska-Lincoln, Yeping Li from Texas A&M University, and James J. Madden from Louisiana State University), attracted more than 70 registered

speakers and participants from across the nation. These speakers and participants were mathematicians who are interested in issues in mathematics education, mathematics educators, scholars in other related fields, and practitioners of mathematics. The workshop focused on three themes related to Howe's professional interest in mathematics education: (1) the state of the field of mathematical knowledge needed for teaching, (2) the core ideas and practices in the K–12 mathematics curriculum, (3) support for mathematicians to engage productively in K–12 mathematics education. After the workshop, a book devoted to the contributions from this workshop and beyond was published (Li et al. 2018). The workshop also marked the starting point for a series of workshops on the theme of "Mathematics Matters in Education" (for further information about these workshops, see http://mme.tamu.edu).

The workshop provided a powerful context for highlighting the importance of collaborative efforts, especially from the mathematics community and the mathematics education community, to discuss how to educate the next generation of students about mathematics. To capture the spirit of the workshop, this award of interdisciplinary excellence in mathematics education was initiated before the workshop in 2015, with support from then Dean (Dr. Douglas Palmer) of the College of Education and Human Development at Texas A&M University for its establishment. Howe was naturally identified, and confirmed by the workshop's organizing team, as the first recipient of the award. The award was officially presented to Howe during the workshop in 2015.

The establishment of this award at Texas A&M University also benefited from reading about the Frederic Esser Nemmers Prize in mathematics established at Northwestern University (see https://www.math.northwestern.edu/about/nemmers-prize.html). Although the Nemmers Prize differs from the IEME award and is designed for recognizing achievement and work of lasing significance in mathematics, it specifically places a request for the recipient to spend several weeks in residence at Northwestern University. With a similar intention, the IEME award established at Texas A&M University is also designed to offer an option (not a condition) to the recipient to spend two weeks in residence at Texas A&M University.

From the beginning, the intent was to create an international award that aims to promote and value interdisciplinary excellence in mathematics education. One scholar has been selected and awarded each year since 2015 through an international call for applications and nominations, followed by an external panel review and internal vetting process. In its second year, the award was given to Dr. Anthony D. Gardiner (UK). After 2016, these awardees are: Dr. Jeremy Kilpatrick (USA), 2017

award recipient; Dr. Sybilla Beckmann Kazez (USA), 2018 award recipient. Citations for all awardees are provided at the end of this article.

What is the IEME award and its nomination process?

The purpose of this award is to recognize work of lasting significance and impact in advancing mathematics education as an interdisciplinary field, linking mathematics, educational studies and practice. In particular, the award recognizes major contributions to new knowledge and scholarship, and as well, exemplary contributions in promoting interdisciplinary collaboration in mathematics education.

The annual award includes a commemorative plaque and a cash prize (US$3000). The recipient also is invited to present a keynote address, with all travel expenses covered, at a workshop at Texas A&M University dedicated to advancing mathematics education. Moreover, subject to the availability of the recipient, a housing allowance and a US$5000 stipend are offered to the recipient to spend two weeks in residence at Texas A&M University interacting with students and faculty in seminars and informal mentoring sessions.

Nominations for the Award of Interdisciplinary Excellence in Mathematics Education are invited annually. For an award in a specific year, the application and nomination process usually start the year before, with a deadline normally January 1 of the award year.

Criteria

Candidacy for the award is open to anyone with a record of outstanding contributions in the fields of education, mathematics, and mathematics education whose work has had a broad impact on crosscutting scholarship or interdisciplinary collaboration in mathematics education. Individuals of all nationalities and institutional affiliations are eligible to be nominated.

Nominations from experts in the field are preferred to institutional nominations; however, individual and self-nominations are also acceptable.

Required materials

- A letter of no more than three pages describing the nominee's professional experience, accomplishments, and qualifications for the award.
- A brief curriculum vitae of the nominee.

Past recipients of the award

There have been four recipients of this award from 2015 to 2018, one every year (information about the award also available at http://mme.tamu.edu). The citations provided below highlight the awardees' scholarly

contributions, leadership and impact in mathematics education as an interdisciplinary field.

Citation for the 2015 Award for Excellence in Mathematics Education to Dr. Roger E. Howe

It is with great pleasure that the Award Committee hereby announces that the 2015 Award is given to Dr. Roger Howe, Yale University, New Haven, CT, USA, in recognition of his more than forty years of sustained and distinguished lifetime achievement in mathematics research, his work impact on mathematics education and in promoting interdisciplinary collaboration in mathematics education.

Howe's mathematical work has been predominantly concerned with representation theory, which is a general tool for deriving consequences of symmetry. Representation theory has applications in nearly all areas of mathematics, and also in the physical sciences. Howe first introduced the concept of the reductive dual pair – often referred to as a "Howe pair" – in a preprint during the 1970s, followed by a formal paper in 1989. Today, Howe continues to work on representation theory, including applications to harmonic analysis, automorphic forms, and invariant theory.

As an educator, Howe has championed national initiatives to advance mathematics education through engaging mathematicians and contributing to issues in mathematics curriculum and teacher education. He served on the Study Committee for the report *Adding It Up* of the National Academy of Sciences on the state of U.S. mathematics education, and on the Steering Committee for the first Conference Board of the Mathematical Sciences (CBMS) report on *The Mathematical Education of Teachers*. He was a member and chair of the Committee on Education of the American Mathematical Society, served on the steering committee of the Park City Mathematics Institute, has served on several committees for the College Board, and currently is on the Education Advisory Committee of the Mathematical Sciences Research Institute (MSRI). He has been an item reviewer for the National Assessment of Educational Progress (NAEP). He served for six years on the U.S. National Commission on Mathematics Instruction (USNC/MI), and is currently in his second term on the Executive Committee of the International Commission on Mathematics Instruction (ICMI). Howe's writing on mathematics education seeks to illuminate and

clarify the ideas underlying key stages of mathematical learning.

Howe received his doctorate in 1969 from the University of California, Berkeley. He taught at the State University of New York in Stony Brook from 1969 to 74. During that time, he also belonged to the Institute for Advanced Study and served as a research associate at the University of Bonn in Germany. Howe has been Professor of Mathematics at Yale University since 1974, and served as chair of the Mathematics Department 1992–1995. He was the inaugural Frederick Phineas Rose Professor (1997–2002), and is currently the William Kenan Jr. Professor of Mathematics. Howe is currently also a faculty fellow at Texas A&M University Institute for Advanced Study.

Howe belongs to the National Academy of Sciences, the American Academy of Arts and Sciences, and the Connecticut Academy of Science and Engineering, and was a fellow of the Japan Society for the Advancement of Science and the Institute for Advanced Studies at the Hebrew University of Jerusalem. In 2006, Howe received the American Mathematical Society Award for Distinguished Public Service for his "multifaceted contributions to mathematics and to mathematics education." He became a fellow of the American Mathematical Society in 2012.

Citation for the 2016 Award for Excellence in Mathematics Education to Dr. Anthony David Gardiner

It is with great pleasure that the Award Committee hereby announces that the 2016 Award is given to Dr. Anthony D. Gardiner, currently retired from University of Birmingham, United Kingdom, in recognition of his more than forty years of sustained and multiple major contributions to enhancing the problem-solving skills of generations of mathematics students in the United Kingdom (UK) and beyond.

Gardiner's major achievements include:

- orchestrating teams of volunteers from many constituencies, including teachers, mathematics educators and university mathematicians, to create a portfolio of mathematics contests, leading eventually to the creation of the UK Mathematics Trust, which creates problem-solving challenges taken by well over half a million students per year;
- creating structures that dramatically increased and broadened participation in mathematics competitions

and other activities supporting UK participation in the International Mathematics Olympiad;

- leading the UK IMO team (1990–1995);
- creating problem-solving journals for school students (including grading thousands of solutions personally), leading eventually to the *Problem Solving Journal for Secondary Students* (edited by Dr. Gardiner since 2003, with a circulation over 5000);
- authoring 16 books on mathematical thinking and mathematical problem solving, including *Understanding Infinity, Discovering Mathematics: the art of investigation, Mathematical Puzzling* (all reprinted by Dover Publications), the four volume series *Extension Mathematics* (Oxford), and the recent *Teaching mathematics at secondary level* (Open Book Publishers).

In addition, Gardiner's expertise on the problem-solving abilities of English schoolchildren, and his insights into omissions in UK mathematics education have led to his being consulted by multiple UK Ministers of State for Education, and have influenced significant changes in the UK mathematics curriculum. Gardiner has also served in multiple high level leadership positions in mathematics education both in the UK and internationally, including the Council of the London Mathematical Society, and member of the Education Committee (1990s), Presidency of the (UK) Mathematical Association in 1997–1998, chair of the Education Committee of the European Mathematical Society (2000–2004), and Senior Vice President of the World Federation of National Mathematics Competitions (2004–2008). He has addressed major teacher conferences in more than 10 countries, and he was an Invited Lecturer at the 10th International Congress of Mathematics Education in 2004. He has organized many meetings and programs to support mathematics education, teacher professional development, and to promote problem solving. He has contributed numerous articles to newspapers and magazines to communicate the goals of successful mathematics education to a broader public. Both the extent and impact of Gardiner's efforts are remarkable. He provides an inspiring example of how a mathematician can have a positive impact on mathematics education; he is a most worthy recipient of the Texas A&M Award for Excellence in Mathematics Education.

Gardiner received his doctorate in 1973 from the University of Warwick, UK. He taught at the University of East Africa from 1968 to 1969, University of Birmingham from 1974 to 2012. During that time he worked at the Free University of Berlin on a fellowship, and held many visiting positions including at the University of Bielefeld in Germany, the University of Waterloo, the University of Melbourne and the University of Western Australia.

Citation for the 2017 Award for Excellence in Mathematics Education to Dr. Jeremy Kilpatrick

It is with great pleasure that the Award Committee hereby announces that the 2017 Award is given to Dr. Jeremy Kilpatrick, University of Georgia, USA, in recognition of his more than fifty years of distinguished and sustained contributions in mathematics education research. Through his writing and leadership, Dr. Kilpatrick has also promoted the development of mathematics education as an interdisciplinary field that bridges theory and practice and connects mathematics education with the discipline of mathematics.

Throughout his academic career, Dr. Kilpatrick has published groundbreaking papers, book chapters and books — many of which are now standard references in the literature — on problem solving, on the history of research in mathematics education, on teachers' proficiency, on curriculum change and its history, and on assessment. In particular, he edited *Adding It Up: Helping Children Learn Mathematics,* published in 2001 by National Academies Press. Google Scholar currently counts nearly 2500 citations of this work. Kilpatrick has also co-edited several other important volumes, including *A Research Companion to Principles and Standards for School Mathematics* and *A History of School Mathematics*, both published by the National Council of Teachers of Mathematics. Kilpatrick's numerous contributions and services to mathematics education have rested on his extraordinary ability to reflect on, critically analyze, and synthesize essential aspects of mathematics education as it has developed since the early twentieth century, while always insisting on the need for reconciliation and balance among the points of view taken, the approaches undertaken, and the methodologies adopted for research.

Kilpatrick's immense amount of professional service has been a significant aspect of his contributions to the mathematics education community. Among his numerous accomplishments as an editor, he was the editor of the *Journal for Research in Mathematics Education*, 1982–1988, and a co-editor of the *International Handbook of Mathematics Education* (1996) and the *Second International Handbook of Mathematics Education* (2003). Kilpatrick served three terms on the Executive Committee of the International Commission on

Mathematical Instruction, ICMI (1987–1998), including two terms (1991–1998) as one of its two Vice Presidents. He also served on a large number of commissions, committees, boards, and panels in the US, including AERA, the College Board, ETS, MAA, Mathematical Sciences Education Board, NCTM, NAEP, National Academy of Education, National Research Council, and National Science Foundation. Kilpatrick has also worked productively with mathematicians, mathematics educators, and general education professionals on committees and reports that have informed and shaped the direction of important developments nationally and internationally.

Kilpatrick received his doctorate in mathematics education in 1967 from Stanford University, and taught at Teachers College, Columbia University, 1967–1975, as an assistant and then associate professor. He joined the University of Georgia as a Professor of Mathematics Education in 1975. In 1993 he was appointed a Regents Professor at Georgia. Over the years he has directly nurtured more than 50 doctoral students, as well as worked in Brazil, Colombia, El Salvador, Italy, New Zealand, Singapore, South Africa, Spain, Sweden, and Thailand.

Kilpatrick was selected as an Inaugural Fellow of the American Educational Research Association in 2009, and elected to the US National Academy of Education in 2010. He received the NCTM Lifetime Achievement Award for Distinguished Service to Mathematics Education in 2003, and the 2007 Felix Klein Medal honoring lifetime achievement in mathematics education from the International Commission on Mathematical Instruction. He has also received several Fulbright awards, and an honorary doctorate from Gothenburg University in Sweden.

Citation for the 2018 Award for Excellence in Mathematics Education to Dr. Sybilla Beckmann Kazez

It is with great pleasure that the Award Committee announces that the 2018 Award is given to Dr. Sybilla Beckmann Kazez, University of Georgia, USA, in recognition of her distinguished and sustained contributions in improving mathematical education for pre-service elementary teachers through textbook development, teaching, and research. By emphasizing the integration of mathematical key topics and pedagogy in elementary teacher preparation, Beckmann Kazez has promoted the development of mathematics teacher education as an interdisciplinary field.

Beckmann Kazez's efforts in strengthening mathematics teacher preparation started with her teaching of the mathematics courses for elementary teacher candidates at University of Georgia. Dissatisfied with the available textbooks, she decided to write a text for her own use. It has since been published by Addison-Wesley (now Pearson). Its distinctive character, with patient, sensible and down-to-earth, but thorough and careful, explanations of key mathematics topics, has won it wide acceptance among mathematically discerning instructors. Beckmann Kazez went to great lengths to make sure the text addressed the most relevant topics in authentic ways, including teaching a 6th grade mathematics class at a local public school. Her book is intended for use with an inquiry-based teaching style, and it has become the leading teacher preparation textbook in the U.S. for this approach. Building on her textbook development and teaching, she has also become actively engaged in mathematics education research. She collaborates with her colleagues to study how teacher candidates approach multiplicative thinking, especially proportional reasoning. This research, funded by NSF, provides further empirical support to her textbook development.

Beckmann Kazez's understanding of the issues of mathematics education have led to her being sought beyond her home institution to contribute to projects of national and international significance. As examples, she was part of the Work Team for developing the Common Core State Standards in Mathematics (CCSSM). She was recruited by the National Research Council to help write their report on early childhood mathematics education. She was part of the writing team for the recent CBMS report: *The Mathematical Education of Teachers*. She was also recruited by the Institute for Education Sciences of the U.S. Department of Education to write a guide to *Improving Mathematical Problem Solving in Grades 4 to 8*. Through these widely promulgated documents and reports, she has exercised considerable influence on mathematics education nationwide. She recently contributed to international mathematics education through membership on the International Program Committee of the ICMI Study 23 on Whole Number Arithmetic. She has also developed a website, called the Mathematics Teaching Community, aiming to engage mathematicians in discussing and sharing how to teach mathematics well.

Beckmann Kazez received her doctorate in mathematics in 1986 from the University of Pennsylvania. After a post-doctoral appointment at Yale University, in 1988, she joined the University of Georgia, where she has been assistant, associate, and then full professor. She has received several teaching awards from the University of Georgia, and in 2011 she was awarded the Josiah Meigs Distinguished Teaching Professorship. She received the Louise Hay Award for Contributions to Mathematics

Education from the Association for Women in Mathematics in 2014, and Mary P. Dolciani Award from the Mathematical Association of America in 2015.

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Author details
[1]Texas A&M University, College Station, TX 77843-4232, USA. [2]University of Nebraska-Lincoln, Lincoln, NE 68588, USA.

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