

College of Liberal Arts and Sciences

Fariborz Maseeh Department of Mathematics and Statistics

Post Office Box 751
Portland, Oregon 97207-0751503-725-3643 tel
noll@pdx.edu

January 15, 2015

Dear USCOTS 2015 Lifetime Achievement Award Review Committee,

It is our honor and great pleasure to nominate our mentor, friend and colleague, Dr. J. Michael Shaughnessy Emeritus Professor, for the 2015 USCOTS Lifetime Achievement Award in Statistics Education. We believe that this nomination letter and the additional letters of support demonstrate how deserving a candidate Mike is. This letter will illuminate Mike's significant and lasting contributions to the field of Statistics Education by summarizing his many achievements in research, teaching and service.

During his almost forty-year career, Mike has authored or coauthored more than 60 articles, books and book chapters related to the teaching and learning of probability and statistics. Through his research and writing, Mike has influenced the teaching and learning of statistics at both the K-12 and college levels. He authored two influential handbook chapters. The first, "Probability and Statistics: Reflections and Directions", appeared in the *First Handbook of Research on Mathematics Teaching and Learning* in 1992. His second chapter, "Research on Statistics Learning and Reasoning" appeared in the *Second Handbook of Research on Mathematics Teaching and Learning* in 2007. These handbook chapters provide an important synthesis of research into how students think and learn about probability and statistics. These chapters are often the first exposure new Statistics Education researchers receive as they begin their graduate studies in the field of Probability and Statistics Education. Mike co-authored *Statistical Questions from the Classroom* which has become an important book for teachers of statistics as they look to deepen their understanding of statistical concepts. It provides conceptual explanations for foundational statistics concepts that teachers need to teach their students. In addition, he has chapters in *Thinking and Reasoning with Data and Chance: 68th NCTM year book* and the *Challenge of Developing Statistical Literacy, Reasoning and Thinking*.

In 1999 the Eisenhower Foundation funded Mike to study the role of variability in middle and secondary students. This grant served as a platform for a larger National Science Foundation grant. From 2004-2008, Mike was the Principal Investigator for a National Science Foundation ROLE (Research on Learning and Education) grant that investigated middle and secondary students and their teachers conceptions of variability and distributions in statistics. His work from that project has been published in research journals (e.g., *Journal for Research in Mathematics Education*, *Mathematics Teacher*, and *Mathematics Teaching in the Middle School*) and presented at the International Conference on Teaching Statistics in 2006 and 2010. This research has impacted how the field understands student learning in this area.

Mike's research has also spanned an international audience. He has collaborated with Spanish researchers such as Carmen Batenaro, with Australian researchers, such as Katie Makar and Jane Watson and with New Zealand researchers such as, Maxine Phfannkuch.

In addition to his research activities, Mike is an excellent mentor and teacher. He was instrumental in starting the PhD program in Mathematics Education at Portland State University where he advised three doctoral students in dissertations related to probability and statistics education. During his teaching career, Mike taught probability and statistics courses for middle and high school teachers and he mentored graduate students so that they would learn to teach these courses as well. He received a grant through the Mathematics Learning Center of Oregon to develop materials for Portland State University's middle school teachers courses. He was integral in the development of activity based probability and statistics materials for pre and inservice middle school teachers. He worked with Teachers Development Group on the Oregon Mathematics Leadership Institute Partnership (OMLI) grant. This was a professional development grant and Mike led the probability and statistics component of the professional development.

As one of Mike's former graduate students, I (Jennifer Noll) can attest to the fact that he is an excellent mentor, role model and teacher. Mike approached the teaching of probability and statistics with enthusiasm and energy. He was always available when students had questions and he truly listened to students' ideas. He created a challenging, but positive learning environment that compelled students to engage in significant ideas of statistics education. Primarily his students were future or current teachers. His work with this group significantly impacted local teachers' statistical knowledge for teaching and likely in turn impacted how K-12 students learn statistics.

Mike's service to the Statistics Education community is also seen through his work with the National Council of Teachers of Mathematics (NCTM). He served as a member of the Board of Directors of NCTM from 2001-2004 and from 2010-2012 was President of the NCTM. As President of NCTM he advocated for K-12 Statistics Education, and in one of his summing up statements wrote about the importance of statistics for all. Mike used his position as NCTM President to highlight the importance of Statistics Education and the development of statistical literacy for all citizens.

The details of each of Mike's contributions to Statistics Education would take up space beyond what any reasonable application can accommodate. Yet, it should be clear that Mike has had a long career devoted to the improvement of Statistics Education, both K-12 and college. Through his teaching of undergraduates, teachers (pre-service and inservice) and graduate students, through his research and writing activities, and through his service as NCTM President, he has strongly influenced the field of Statistics Education. We believe that the evidence presented here shows that Mike is exceptionally deserving of the USCOTS Lifetime Achievement Award and we respectfully ask the committee to give your support to Mike for this nomination.

On a personal note, Mike is also a positive person and an amazing individual in many other ways. In 1992 he was founding member of the Faculty and Staff Portland State University Community Chorus

and the lead tenor. He also sings for Satori Men's Chorus and does a 'mean' solo. He has an incredible voice, clearly more than three standard deviations above the norm! He also enjoys sampling (pun intended) wine and beer with friends and family.

Please join us by honoring our dear friend, J. Michael Shaughnessy with the USCOTS Lifetime Achievement Award.

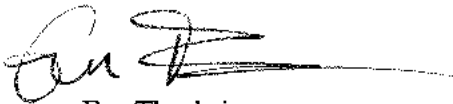
Sincerely,



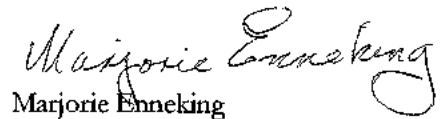
Jennifer Noll
Assistant Professor



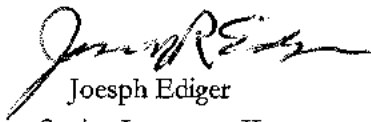
Jeanette Palmiter
Professor



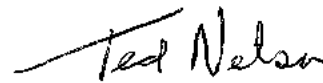
Eva Thanheiser
Associate Professor



Marjorie Enneking
Professor Emeritus



Joseph Ediger
Senior Instructor II



Ted Nelson
Professor Emeritus

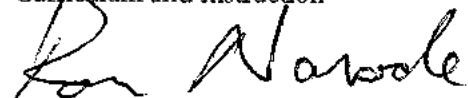
Fariborz Maseeh Department of Mathematics and Statistics



Karen Marrongelle
Interim Dean
College of Liberal Arts and Sciences

Ron Narode
Professor

Curriculum and Instruction





January 24, 2015

Dear USCOTS 2015 Lifetime Achievement Award Review Committee;

I am writing to support the nomination of J. Michael Shaughnessy for the Lifetime Achievement Award in statistics education.

My association with Mike began in 1982 when he invited me to participate in a session he had organized at the NCTM Research Pre-Session on using clinical interviews to study students' mathematical and statistical thinking. But I already knew his work from his 1977 *Educational Studies in Mathematics* article that I'd read with interest as this was the first article I was aware of that applied the research of Kahneman and Tversky to the design of probability instruction.

Since that time, I have had many interactions, both formal and informal, with Mike on aspects of statistics education. He has a broad perspective not only on the practice of teaching statistics but on the developmental history of the field of statistics education. This is most evident in his 2013 interview with Allan Rossman, which was published in the *Journal of Statistics Education*. He has used this in-depth perspective to provide the field with comprehensive reviews of research in the 1992 and 2007 editions of the *Handbook of Research on Mathematics Teaching and Learning*. These are both frequently cited by researchers as having inspired the direction of their research.

For providing novel research to the field, for helping the field put into perspective the research of the last 40 years, for preparing hundreds of teachers to teach probability and statistics K through university, for mentoring several graduate students who are now leaders in the field of statistics education, for helping enrich the conversation between mathematics and statistics educators, Mike is most deserving of this recognition.

Sincerely,

A handwritten signature in black ink, appearing to read "Clifford Konold".

Clifford Konold

Director, Scientific Reasoning Research Institute



UNIVERSITY OF MASSACHUSETTS
AMHERST

Department of Teacher Education
and Curriculum Studies

College of Education
117 Furcolo Hall
813 North Pleasant Street
Amherst, MA 01003-9308

January 24, 2015

Dear USCOTS Lifetime Achievement Award Committee:

It is my great honor to recommend J. Michael Shaughnessy for the 2015 USCOTS Lifetime Achievement Award.

I first became acquainted with Mike through his scholarship when I was a mathematics education doctoral student in the Mathematics Department at Western Michigan University. I remember discovering and reading, *Research in Probability and Statistics: Reflections and Directions*, in the 1992 Handbook of Research on Mathematics Teaching and Learning, edited by Doug Grouws. It was with a sense of wonder and awe that I digested that incredibly useful resource as a budding statistics educator. That work along with another paper Mike co-authored with Jane Watson and several colleagues in 2003, *The Measurement of School Students' Understanding of Statistical Variation*, catapulted me into research in statistics education and were pivotal in leading to what would become my dissertation focus. The 2007 Second Handbook of Research on Mathematics Teaching and Learning Chapter, *Research on Statistics Learning and Reasoning* was a much-awaited synthesis of more recent research in statistics education and continues to be an important resource. Clearly, being asked to author chapters in research handbooks like these alludes to Mike's giant status in the mathematics education world with respect to statistics education. Mike has numerous publications related to statistics education, but his focus on issues of variability and variation as big statistical ideas has significantly impacted the field and the subsequent work of other scholars, myself included.

As President of the National Council of Teachers of Mathematics from 2010-2012, Mike utilized his national platform and influence to continue to elevate the importance of statistics in the curriculum for all students. For example, in *Summing Up*, August 2010, he addressed "Statistics for All—the Flip Side of Quantitative Reasoning" and made a plea for all students to have the opportunity to learn to reason and make decisions where uncertainty is present. He has been a tireless advocate for statistics and probability in the school curriculum and was able to increase his circle of influence by leading the world's largest and leading professional organization for mathematics teachers, a position that indicates his commitment to research, teaching, and learning. His affinity for NCTM goes back at least to 1981, when he published *Misconceptions of Probability: From Systemic Errors to Systemic Experiments and Decisions* in the first NCTM Yearbook to focus on teaching of probability and statistics. He has authored or contributed to influential research-based practitioner publications such as *Navigating through Probability in Grades 9-12* and the *Focus in High School Mathematics* series, to name two. His contributions to and through NCTM have been of the highest quality and have impacted countless teachers, researchers, and students.

Finally, Mike has been a kind, generous, and inspirational mentor to his own students as well as those of us from afar. For example, he agreed to serve on an advisory board for an NSF grant I was writing before we'd ever even met. He carefully read my proposal and offered wonderful feedback and direction—more than once!! Since then, I have met Mike on numerous occasions at professional events, nationally and internationally, and he is always genuinely interested in the work I am pursuing and perhaps more importantly, just how life is going. I know Mike gives generously of his time and expertise and shepherds more than a few young scholars into this vibrant field of study. I've found Mike to be an exceptional person, scholar and steward for statistics education and he has my highest regard. It is my humble honor to recommend him to you.

Sincerely,

A handwritten signature in blue ink that reads "SM".

Sandra R. Madden
Associate Professor, Mathematics & Statistics Education

College of Education
School of Teaching and Learning

2403 Norman Hall
Gainesville, FL 32611-7048

January 29, 2015

To the USCOTS 2014 Lifetime Achievement Award Review Committee:

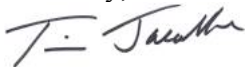
It is my pleasure to recommend J. Michael Shaughnessy for the 2014 Lifetime Achievement Award. I have the honor of knowing Mike for the past seven years. Although I was not a doctoral student of his, he has become a tremendous advisor and mentor over the years. His willingness to invest in the development of young faculty even though they did not attend his institution is a testament to the reason I believe he is most deserving of this award. The contributions of J. Michael Shaughnessy extend far beyond the many chapters and articles for which he is an author. He has impacted many scholars in the field of statistics education and the outcomes of those efforts will continue to impact the field year after year.

Mike has made great contributions through numerous research studies and handbook chapters. Those accomplishments are well known and speak for themselves. My recommendation stems from the first moment I met him while giving a talk at a conference. I was brand new to the field of statistics education and had no idea what Mike looked like although I obviously knew his name. During my session I got a great question from the audience that pushed my thinking. Afterward, this kind gentleman came up to me to introduce himself. It was Mike reaching out to a young scholar to make a connection that would help me become a better statistics educator. I have seen him do this sort of thing conference after conference. He helps push the field forward by inspiring others to invest in a field that has meant so much to him.

The guidance of Mike could not be more apparent than when I received feedback during my third year review that statistics education was not a worthy field to pursue in mathematics education. He was steadfast in his advice and encouraged me to continue working in this area as well as to continue to pursue funding to support a grant to develop assessments of statistical literacy. This advice also ran counter what others were telling me. Having the support, mentorship, and guidance from Mike Shaughnessy, one of the biggest researchers in the field, empowered me to continue to pursue this project. His inspiration helped lead to the LOCUS project getting funded by NSF, where he has served on the advisory board since 2011.

I cannot overstate the impact J. Michael Shaughnessy has had on the field of statistics education. He is an amazing scholar, mentor, and friend who has inspired many to continue to work in this amazing field. Mike is one of the most energetic people I have ever had the pleasure of working with. According to CAUSE, this award "...is presented...to an individual who, over an extended period of time, has made lasting contributions, with broad impact to the field of statistics education." I cannot imagine a better nominee than Mike Shaughnessy. His efforts have bridged the fields of mathematics education and statistics education in a way that only he could do. He has helped establish the field of statistics education as an acceptable area of research in mathematics education. Mike has inspired many more than me to pursue lines of inquiry in the field. He has helped many become great, but no one will ever be as great as J. Michael Shaughnessy.

Sincerely,



Tim Jacobbe, Associate Professor of Mathematics and Statistics Education
jacobbe@coe.ufl.edu, 352-273-4232

The Foundation for The Gator Nation

An Equal Opportunity Institution

School of Education

28 January 2015

To the USCOTS 2015 Lifetime Achievement Award Review Committee

I am privileged to recommend **J. Michael Shaughnessy**, Professor Emeritus of Mathematics and Statistics at Portland State University, for the USCOTS 2015 Lifetime Achievement Award. The focus of this award is for contributions to the teaching and learning of college-level statistics. Mike's contributions have spanned from college level and teacher education into school-level statistics, where I am most familiar with his work. Other letters will no doubt highlight his extensive impact on teaching, learning and research at the college level.

In 2000, I met Mike in the first semester of my PhD program introduced by my mathematics education supervisor at the University of Texas as someone I "must" meet in probability and statistics education. He immediately put me at ease and warmly welcomed me to the field of probability and statistics education. Mike not only spent a great deal of time with me that afternoon going through the major contributors that I needed to read and meet, but also strongly encouraged me to send in a proposal as a new scholar for the upcoming the *Forum for Research in Statistical Reasoning, Thinking and Reasoning* (SRTL) in Australia, a small working conference where nearly all of these key contributors would also be presenting (including himself). SRTL has become my research "home" for the past 15 years where I am now co-Director of the collaborative organisation with Dr Dani Ben-Zvi. I can confidently say that Mike is one of the main reasons that I moved into statistics education as my primary research area. At every stage of my career, Mike has been there as my mentor and inspiration. He took me under his wing, as I've seen him do with many other emerging scholars, and led me to the centre of activity and people in the profession.

Mike's influence on statistics education spans four decades. Since his PhD in 1976, Mike has been one of the primary contributors in the field to our understanding about probability, variability and sampling. His PhD, *A Clinical Investigation of College Students' Reliance Upon the Heuristics of Availability and Representativeness in Estimating the Likelihood of Probabilistic Events*, researched college students, however his research arms have since embraced a far broader audience. For example, his authorship of the first two National Council of Teachers of Mathematics (NCTM) *Handbooks of Research on Mathematics Teaching and Learning* (1992, 2007 and now co-author of the third, forthcoming in 2017) have been among the most widely cited works in probability and statistics education at both the college and school levels, collecting nearly 1000 citations. These chapters are usually a graduate student's first reading in probability and statistics education. In 2010, Mike Shaughnessy became president of the 100,000 member National Council of Teachers of Mathematics. His tenure as president of NCTM has helped to strengthen the influence of statistics in secondary school mathematics at a time when the Common Core Curriculum has attempted to diminish statistics in school.

I present above only a small slice of Michael Shaughnessy's influence in probability and statistics education, but this slice represents a great impact. His work is extensive as would be evidenced in other letters (and a lovely 2013 JSE interview by Allan Rossman). I cannot recommend him enough for this prestigious award.

Regards,



Katie Makar



start something big

Dr. Dan Canada, Professor
Department of Mathematics



Dr. Matt Ciancetta, Assistant Professor
Mathematics Department

January 25, 2015

To: USCOTS 2015 Lifetime Achievement Award Review Committee
Re: Nomination of J. Michael Shaughnessy

Dear Award Review Committee,

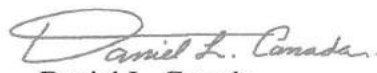
It is the greatest pleasure to learn that Mike is being nominated for the Lifetime Achievement Award, and to add this letter of support for your consideration.

Professionally, Mike's contributions to statistics education are well established on a global scale. Whereas his work has touched so many, we'll simply comment on what his work has meant in our own careers in terms of teaching, service, and scholarship. As a teacher, he modeled what it meant to be a patient inquirer: To ask students what they noticed, what they wondered about, and why. As he encouraged different perspectives, his own remarkable style of teaching has helped shape what we now strive for in our own classrooms. In terms of service, learning from Mike about all of his contributions to different organizations has helped influence our desires to serve. Finally, it wasn't the quantity but rather the quality of Mike's scholarship that each of us first marveled at. The clarity of his writing, along with his ability to be concise, while at the same time fully synthesizing a topic, is, in our opinions, among the best scholarly examples in the field of statistics education.

Personally, while it is true that Mike has served professionally as the thesis advisor for each of us, and that his mentorship naturally extended to personal ties that continue today, our experiences with Mike are not unique. Many a doctoral student that Mike has mentored will attest to the personal ties that develop. After meeting Mike, students and colleagues alike quickly get the sense that Mike is someone they can trust. From early on in our graduate studies and into our professional careers we continue to rely on Mike as we know that we can ask him questions and get a straight answer, and that he'll follow through on what he says. Also, there is an attitude of positive energy from Mike in the way he looks for things that *can* be done rather than focusing on the ostensible reasons for why things *can't* be done. Finally, we very much appreciate the way he balances a serious approach to work with a great sense of humor. His acumen, his wit, and his friendship have been much appreciated over the years.

We truly cannot fathom an individual who is more deserving of this Lifetime Achievement Award than Mike. Therefore, we each wholeheartedly endorse his nomination, with thanks for all he has contributed to so many around the world.

Sincerely,


Daniel L. Canada


Matthew Ciancetta

Mathematics Department
203 Kingston Hall • Cheney, WA 99004-2418
509.359.6074 • dcanada@ewu.edu

Mathematics Department
Mathematics and Nursing Building 116 • Monmouth, OR, 97361
503.838.8829 • ciancetm@wou.edu



DEPARTMENT OF STATISTICS
Faculty of Science

Level 3, Building 303
38 Princes Street
Auckland 1010, New Zealand
Telephone 64 9 373 7599
Facsimile 64 9 373 7018
<http://www.stat.auckland.ac.nz>

23 January 2015

The University of Auckland
Private Bag 92019
Auckland 1142, New Zealand

To the USCOTS 2015 Lifetime Achievement Award Review Committee

This is a letter of support for the nomination of Emeritus Professor J. Michael Shaughnessy for the USCOTS Lifetime Achievement Award in Statistics Education.

I first became acquainted with Mike as a doctoral student in 1994 through his 1992 highly cited landmark handbook chapter on probability and statistics education research. This chapter, which was the only complete picture of the field as a whole at that time, became the touchstone for a student who had to teach herself in this area. Therefore, when the opportunity came for a funded invitation to a famous statistics education researcher to my university Mike's name was at the top of the list. He arrived in 1999 on a visiting appointment for several months. The main purpose of his appointment was to mentor me, a fledgling researcher, to help me establish a Master's course in statistics education, and to stimulate the growth of statistics education research, which at that time did not exist in New Zealand. I can state, without a doubt, that his visit and consequent continual support, collaboration and mentoring was instrumental in statistics education research in New Zealand growing to the extent that it is now internationally recognized.

In my career I have never met anyone as dedicated as Mike in helping statistics education research to grow internationally. First, his scholarly publications have made substantive contributions to the research field including his well-received second overview of research in the 2007 *Handbook of Research in Mathematics Teaching and Learning*. His research reveals not only his depth of thought and insights into how statistics education can be enhanced but also his obvious enjoyment in working with students as he learned more about their thought processes. Second, he is a stalwart supporter of international conferences including the International Conference on Teaching Statistics at all levels. He was a plenary speaker at ICOTS in 2007, while at other conferences he presented papers and helped to organize sessions and invite people to present papers. At these conferences his approachability and his quiet support of many experienced and new researchers is very noticeable and invaluable for progressing the growth of research. Third, in his capacity as NCTM President and other roles he has actively created a bridge between statistics education research and statistics education in classrooms. Thus Mike's publications, mentoring, and networking coupled with his good communication skills have been influential in developing a vibrant international statistics education community.

Mike is a giant in the statistics education field. He is recognized as a pioneer in the statistics education research field and is highly respected. I support Professor Mike Shaughnessy's nomination for the USCOTS Lifetime Achievement Award in Statistics Education in the strongest possible terms. The award would recognize his multiple contributions over his distinguished career to statistics education and research and for his role as an advocate for promoting research and the teaching of statistics. Such a prestigious award would be richly deserved.

A handwritten signature in cursive script that reads 'M. J. Pfannkuch'.

Associate Professor Maxine Pfannkuch
Department of Statistics, The University of Auckland

9 January, 2015

To the USCOTS 2015 Lifetime Achievement Award Review Committee:

It is my pleasure to support the nomination of J. Michael Shaughnessy for the 2015 Lifetime Achievement Award.

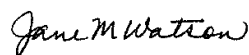
Although this is a USCOTS award and his achievements within the US and particularly for the National Council of Teachers of Mathematics (NCTM) have been many and highly significant, I wish to focus on Mike's contribution and influence on statistics education internationally. I was born and educated in the US but have resided in Australia for over 40 years. Having travelled back and forth many times, I am well aware of the US-centered views of many American academics and the impression this gives to foreigners. Mike has done much to modify this view of Americans over a long period of time.

Although Mike's influence and generosity has been evident in many countries, I will focus on the part of the world with which I am most familiar, Australasia, while at the same time noting his impact more widely. I met Mike in 1994 at a meeting organized by Iddo Gal and Joan Garfield at the University of Pennsylvania to discuss assessment in statistics education but it was not until we met again in Granada, Spain in 1996 at the Roundtable conference on Research on the Role of Technology in Teaching and Learning Statistics that we got to know each other. I was still very much unknown, but he was famous, among other things, for his chapter in the 1992 NCTM Research Handbook. It emerged we had similar interests and a concern about the lack of research on students' understanding of variation as an underpinning concept for statistics. He agreed to collaborate!

In 1997, Mike visited New Zealand and gave a keynote at the Mathematics Education Research Group of Australasia (MERGA) conference where he explicitly noted the need for research on variation. Following the conference he visited both the University of Tasmania and the University of New England (where he collaborated with Chris Reading and John Pegg). One of the outcomes of the visit was a paper he gave at the NCTM Pre-session Research Symposium in 1999 focusing on "There's More to Life than Centers." Mike included three Australian co-authors and the paper is still often quoted as one of the seminal papers on statistical variation. Following this Mike was the International Partner on my Australian Research Council 3-year grant (from 2000), "The development of school students' understanding of variation," visiting Tasmania again in 2001 to work with the project team. As well that year he travelled to Armidale, NSW, for the second international SRTL Forum (Statistical Reasoning, Thinking and Literacy), again collaborating with researchers from many parts of the world. I also became a consultant on his NSF project, "An investigation of secondary students' and teachers' conceptions of variation," from 2002 (after a special case was made to import a "foreigner"!). I visited Portland several times during the project to work with the team.

Mike has also been very supportive of international conferences, attending ICOTS in every part of the world, including giving a keynote address at ICOTS6 in Brazil. Most recently, during his presidency of NCTM he agreed to come to Australia to the 2011 joint MERGA-AAAMT (equivalent of NCTM) conference in Alice Springs to give a keynote. Throughout the whole conference he was exceedingly generous in talking to teachers and researchers and his down-to-earth approach enhanced the opinion of American academics for many Australians. As well on this visit he came to Hobart and very generously gave a popular seminar linked live to all three campuses of the University across the state. The turn-out from school teachers and staff reflected his reputation and still people mention the problem (geometry this time!) that he introduced and discussed.

As well as contributing to the NCTM's *Research Companion* (2003) and second Handbook of Research (2007), Mike continues to be asked to collaborate with Europeans and Australians, for example on the first Handbook of Research in Statistics Education and a senior secondary book to be published by Routledge. His unselfish sharing of his ideas, time, and energy has built significant bridges across the world in Statistics Education. He certainly deserves recognition from USCOTS for his world-wide contribution to statistics education.



Jane Watson, PhD, FASSA
Professor Emerita of Mathematics Education