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Dr. Penny Gilmer
Chair, ASTE Awards Committee

Dear Penny,

It gives me great pleasure to write this letter of support for the nomination of Kenneth Tobin for the ASTE Outstanding Mentor Award. Ken Tobin represents my vision of a mentor. I aspire to be as inclusive and supportively critical a mentor to the young researchers with whom I work as he has been to me and the myriad of young researchers that he has mentored over a storied research career that extends over more than three decades.

I first met Ken in 1992 when he presented a weeklong Summer Institute on Constructivism at the Science and Mathematics Education Centre (SMEC) at Curtin University of Technology in Perth, Western Australia. He made such a strong impression that I enrolled for another Summer Institute that he presented in Brisbane, Queensland, Australia the following year. Over the next few years I read a number of his papers, such as *Constructivist Perspectives on Teacher Learning* from the AAAS monograph that he also edited. His papers significantly influenced my thinking about teaching and learning as I prepared to conduct my doctoral research. Although I was pleasantly surprised when he asked me for a copy of my doctoral thesis, which I completed in 1998, I never imagined the influence that he would continue to have on my professional development and the professional development of others. In 2000, he invited me to apply for a post-doctoral position that was available at the University of Pennsylvania where he was Professor of Science Education and Director of Teacher Education. The position was associated with an NSF grant for which he was Co-PI: Teacher enhancement in chemistry: Creation of a master in chemical education program for secondary school teachers in Delaware, Maryland, New Jersey and Pennsylvania. In the following year, I worked with him on another NSF grant on which he was the PI: Teaching and learning of science in urban high schools. This grant involved university researchers working with teacher and student researchers in order to learn about urban science education and to develop a richer understanding of socio-cultural aspects of learning. In both cases, it was my privilege to observe the care that he gave to mentoring beginning university, teacher and student researchers. To date at least seven researchers on this project have completed their doctorates on research associated with this research project and one, Stacy Olitsky, was awarded the NARST Outstanding Thesis Award for 2005. Ken's research corpus is extensive and I use a number of his papers in the courses I teach to graduate and undergraduate, in-service and pre-service teachers.

Encouraging Participation in Professional Associations Related to Science Teacher Education, including ASTE

Working closely with Ken over the past five years has provided me with a great appreciation of his belief in the value of presenting and participating in professional associations that are involved in science teacher education. He encourages all of the researchers with whom he interacts, beginning and experienced, to participate in conferences and to present their research. He encourages colleagues to apply

for awards also because he believes that such participation helps to make these professional organizations stronger. In 2004, he was recipient of the AETS Award I: Outstanding Science Teacher Educator of the Year (10+ years) providing further evidence of his commitment to professional associations. Ken supported my attendance at my first then AETS Conference in 2002 and my first AERA Meeting in 2001. He further encourages participation by attending presentations by his graduate students and supporting their development as researchers. Many of the beginning researchers he has mentored now hold tenure and tenure-track positions in universities nationally and internationally.

I also particularly value his inclusive approach to participation, which was evident when he was President of NARST. He argued that all research proposals should be accepted unless the proposals did not address the criteria outlined in the proposal submission information. This inclusive model also seems consistent with the goals of ASTE.

Encouraging Contributions to the Knowledge Base of Science Teacher Educators

Ken's contributions to the knowledge base of science teacher educators has been substantial and diverse indicating his willingness to evolve as a researcher and to challenge his own preconceptions when they exist in contradiction to evidence. I think that is not hyperbole to argue that his overall contributions have transformed science teacher education and that much of this research has been conducted in collaborative partnerships. Ken has published papers on areas as diverse as target students, constructivism, metaphors, classroom interactions especially the role of respect in urban science classrooms, socio-cultural basis of learning, scientific fluency, and co-teaching and co-generative dialogues. His contribution to the knowledge base of science education has challenged others to conduct research in these areas. For example, I am a member of a team examining the role of target students in college education courses, research that was informed by Ken's studies in the 1980s with Jim Gallagher on target students and his more recent work with colleagues such as Wolf-Michael Roth, Gale Seiler and Rowhea Elmesky. Ken encouraged us to write a paper on target students and cliques in college level courses, which has been accepted for publication. When we felt overwhelmed by the demands of the review process he remained positive and supported us as we responded to editorial and review comments. In fact, the paper on target students that Ken co-authored with Jim Gallagher was selected for publication in a special issue of JRST published to celebrate its 40th anniversary and, in the words of the editors, "to reprint a selection of the most influential articles that had appeared in the first 40 years of the journal's publication".

With Barry Fraser he edited one of the most important publications in science education over the past ten years the International Handbook of Science Education. In 2002 the book, *At the Elbows of Another: Learning to Teach Through Co-teaching* (Published by Peter Lang), was the recipient of a Choice Award for Outstanding Academic Titles for 2002. From 1995 to 2002, he was series editor for the Kluwer Academic's Science and Technology Education Library where he oversaw the publication of 14 monographs and edited books on diverse topics including learning communities, science communication and the nature of science. He is currently co-editor with Joe Kincheloe of another book series, *Bold Visions in Educational Research*.

Providing Opportunities for Professional Growth

In 2005, *Improving Urban Science Education: New Roles for Teachers, Students and Researchers* was published by Rowman and Littlefield. Ken and two of his former doctoral students, Gale Seiler and Rowhea Elmesky edited this book, which contains chapters by university, teacher and student researchers who worked on the NSF project on urban science education I described earlier for which Ken was the Principal Investigator. It was Ken's guidance and enthusiasm that provided the momentum for this project, which provided both beginning and experienced researchers a forum in which to communicate their learning from studies of urban science education. In June 2004, Ken was awarded an NSF Distinguished Teacher Scholar Award and as part of his proposal he elected to mentor beginning tenure track researchers, of which I am one. He established a small research group composed of beginning university researchers and teacher researchers who are currently planning research in a number of urban

schools examining a range of issues such as inquiry in elementary schools science, the role of co-generative dialogues in expanding the learning options for urban youth and examining strategies that assist youth to develop language to talk about their thinking. As Jim Ma, the young teacher with whom I am working as part of Ken's DTS Award wrote in his reflection for his Masters:

I would have never imagined that I would be participating in educational research. But being part of research team has been great to say the least. First of it has allowed me to meet and become acquainted with other dedicated science educators that I would have never met myself. Sharing and listening to experiences from people like Ken (Tobin), Cath, Michelle, Sue, Ed, Gilliane, Chris and Ashraf has opened my eyes as to what is going on in science classrooms through out the city, as well as the many wonderful things these people are doing to make a difference in their students' lives.

Being part of the research team for the past two years has allowed me to be involved in something that was completely unfamiliar to me. Having read several different texts about teaching science, I am actually now part of a group that was conducting the research that I had been reading about. This has been highly influential to me, as it has lead to two independent studies.

Ken has mentored many doctoral students encouraging them not to lose sight of their professional goals. In his interactions with researchers of all levels of experience, he is generous in his praise, willing to be a critical friend, and open to new ideas. One of his most positive characteristics is his passionate desire to support the professional growth of others recognizing that the health of the field and associated professional organizations depends on the support provided to beginning researchers. I feel very fortunate to have had the chance to work with Ken Tobin. He has enriched my research and professional life in ways that I could not have anticipated when I agreed to become a post-doctoral researcher at the University of Pennsylvania.

Sincerely,

A handwritten signature in black ink, appearing to read "C. E. Milne", with a small dot at the end.

Catherine Milne