

MATHEMATICAL SCIENCES LECTURE SERIES

College of Liberal Arts & Sciences

George E. Andrews

The Pennsylvania State University

Research Mathematical Scientists and Mathematics Education



Date: Tuesday, February 22, 2005

Refreshments: Served at 3:30pm

Lecture: 4:05 – 4:55pm

Location: Keene Faculty Center, Dauer Hall

Abstract:

In 2000, the American Mathematical Society published a book entitled *Mathematics Education Research: A Guide for the Research Mathematician*. In speaking to the mathematics world generally at the end of their book, the authors say: "... we hope that they [i.e. research mathematicians] have an appreciation that mathematics education research is a serious field of scholarship and that research mathematicians and mathematics education researchers can enjoy mutual respect as fellow scientists." In 2001, I published a review of this book in the *American Mathematical Monthly*. Succinctly, I tried to contrast the scientific approach to education described in the book under review with the ideas of E.F. Schumacher and Michael Polanyi. My conclusion was that a scientific approach to mathematics education is impossible.

In the *Notices of the American Mathematical Society* for April 2004, Tony Ralston provided a critique of many of the critics and criticisms of mathematics education research. In a section titled "Arrogance", we read: "The arrogance of mathematicians towards mathematics education manifests itself in various ways. Here are two: " The first item is a resounding blast at my review (described above). Subsequently Ralston adds: "If research mathematicians would engage in 'civil, constructive' criticism rather than, more often than not, arrogant put downs, the result of the Math Wars would not be an endless battle to the detriment of school mathematics education in the U.S. ..."

In this talk, I shall examine Ralston's critique. My object will NOT be to bash back at Ralston. Rather I shall try to outline what I believe to be the philosophical abyss that makes the collaboration that Ralston longs for so difficult if not impossible, and I shall try to give some idea of what I hope have for the art of mathematics education in the future.

George Andrews, one of the world's most eminent mathematicians, is Evan Pugh Professor of Mathematics at the Pennsylvania State University and a member of the National Academy of Sciences. He is a well known number theorist and is the premier authority in the theory of partitions and q -hypergeometric series. He has written over 250 research papers. He is famous for the discovery of Ramanujan's Lost Notebook, which he is currently editing with Bruce Berndt of the University of Illinois.

This Lecture Series is sponsored by The Mathematical Sciences Committee. The Committee seeks to identify emerging scientific fields that have strong mathematical components; promote education in these fields; encourage and support collaborative research; coordinate responses to interdisciplinary proposal solicitations; and explore more formal organizational structures that will bridge the mathematical sciences and their applications.