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Paul Trunfio is a Research Associate and Director of Education Programs at the Center for Polymer Studies in the Department of Physics at Boston University. Paul has degrees in biomedical engineering and computer science and has been in the Polymer Center since he was an undergraduate student in the mid 1980s, where he pioneered computer visualization and modeling of complex systems. Paul also co-authored peer-reviewed research papers in such journals as *Nature*, *Physical Review* and *Physical Review Letters*.

Paul made his professional focus the integration of his collaborative science research with science education, leading efforts to bridge the existing gap between the two and bring his and other researchers' experiences into K-12 schools. With Gene Stanley, Paul led one of the first major efforts in this area funded by the National Science Foundation's (NSF) Applications of Advanced Technology Program, whose vision was to develop technology-enriched software and curricula that would be available to schools within by the turn of the century, as at that time computers capable of advanced computation were not available in schools. Paul and his team were among the first to bring high-end workstations into schools, many of which were donated by major equipment manufacturers. These machines cost considerably more than personal computers at the time, but were the only technology that allowed students to compute research models in real time. In addition, Paul and his team established one of the nation's first high speed networks between a high school (Newton South, MA) and Boston University to pipe visualization models from university supercomputers to desktop machines in the high school laboratory.

The science brought into schools consisted of fractals, complex systems, and molecular dynamics in physics, biology and chemistry. Software was disseminated online as well as through two textbooks (of which Paul is co-author). Lower cost personal computers caught up to advanced workstations in the late 1990s in terms of computing power, so Paul's team redeployed many of the advanced modeling tools so they could run on readily available computers and still be within the original vision of widespread use in schools in the one-decade time frame.

Education research demonstrated the efficacy of these approaches, including the finding that the BU-developed visual models increased the conceptual development and motivation to learn science among minorities and other disadvantaged students as well as those who were otherwise turned off to science.

In addition to software and curriculum development, Paul and his team undertook a number of other efforts, which included the launching of a series of summer workshops in the mid 1990s to teach the BU-developed materials. This effort reached hundreds of teachers nationwide, and continues to this day. Paul led one of the first online collaborations with teachers, partnering with America OnLine in the early 1990s to launch the Computers in Education Forum, with approximately 10,000 participants. During the explosion of the Web in the mid-1990s, Paul authored a monthly column for a major print and online magazine focusing on the technical aspects of Web development. Paul and his team also created an exhibit on fractals and complex systems at the Boston Museum of Science and created installations at other museums worldwide. Paul's personal project was the development of an exhibit which translated the visitor's electrocardiogram into music in real time.

Perhaps Paul's most significant contribution has been the inclusion of science graduate students in the development of curricula and outreach to K-12 schools, which had been dominated by education specialists. Paul and his team took the approach that, while important, the efforts of these specialists were incomplete in bringing science research concepts into schools. Paul's efforts included a mix of experts, including science faculty, science graduate and undergraduate students, education faculty, teachers, and students. This collaborative approach led to early successes in helping to form the successful NSF GK-12 Program integrating graduate students with K-12 teaching. These efforts by Paul and Gene Stanley were acknowledged through winning the first NSF Distinguished Teacher Scholar award.

In his 20-year career at Boston University Paul has co-authored and led 18 peer-reviewed grants totaling more than \$22M. He recently devoted his efforts to the challenge of bringing neuroscience concepts into schools by leading the outreach efforts of the NSF Science of Learning Center CELEST (Center for Excellence in Learning of Education, Science, and Technology).

Paul made a recent commitment to the hundreds of teachers using BU-developed materials to re-engineer software, lead more workshops, and disseminate materials to a wider range of teachers and students. In addition to the highly successful graduate student work, Paul has also expanded his commitment to include parents in education, an integrative program he calls Parents K-12.

In addition to his science and education work, Paul is a photojournalist and musician. Paul and his wife Maureen live 20 miles west of Boston with their two daughters.