Settling Longstanding Educational Disputes about Student Learning with National Data

“My passion as a researcher is investigating the professional views of teachers, professors, and administrators concerning how to best prepare students for future success. While many educators’ beliefs are often strongly held, they are rarely monolithic in that they can have opposing views, even when sharing similar backgrounds and experiences. Commonly, the evidence that underpins educators’ decisions about teaching and school structure is anecdotal and personal, typically unconvincing to those with other opinions.

Through the collection of copious, nationally representative student data, my team investigates some of the more controversial disputes about the best way to educate students, particularly in STEM fields, both for persistence in interest and success when they get to college coursework. The cognitive sciences have a major role in shaping our work by identifying promising research questions, along with the use of cutting-edge research methods. In constructing quantitative models that take into account student differences, we reveal underlying patterns, ultimately supporting or refuting beliefs about: Advanced Placement coursework, block scheduling, content coverage, assessment, instructional practices, technology, and teacher knowledge.”

Philip Sadler is currently the Director of the Science Education Department at the Harvard-Smithsonian Center for Astrophysics and F.W. Wright Senior Lecturer in Astronomy. He holds a B.S. in Physics from MIT and an Ed.D. from Harvard. He co-authored the first integrated computer and laboratory introductory calculus course in 1975. He has taught middle school mathematics, science, and engineering, undergraduate astronomy, and graduate teaching courses. He has founded three companies and holds five patents. His research interests include assessment of student misconceptions and how they change with instruction, the transition to college of students who wish to pursue STEM careers, and teachers’ professional development.

Dr. Sadler won the Journal of Research in Science Teaching Award, the AIP’s Computers in Physics Prize, the American Astronomical Society Education Prize, and the American Association of Physics Teachers’ Millikan Medal. Curricula and materials developed by Dr. Sadler are used by an estimated fifteen million students every year.

PLEASE RSVP BY FRIDAY, APRIL 15 to: COEdevents@uta.edu