

Applications and Mathematical Modeling

A Central Theme in *Transition to College Mathematics and Statistics*

and in

the Mathematical Sciences Today and the Future

The mathematical sciences are part of almost every aspect of everyday life. Internet search, medical imaging, computer animation, numerical weather predictions and other computer simulations, digital communications of all types, optimization in business and the military, analyses of financial risks—average citizens all benefit from the mathematical science advances that underpin these capabilities, and the list goes on and on.

Finding: Mathematical sciences work is becoming an increasingly integral and essential component of a growing array of areas of investigation in biology, medicine, social sciences, business, advanced design, climate, finance, advanced materials, and many more. This work involves the integration of mathematics, statistics, and computation in the broadest sense and the interplay of these areas with areas of potential application. ... Education in the mathematical sciences should also reflect this new stature of the field.

The Mathematical Sciences in 2025, pages 110-111.