

# Current Results & Challenges for STEM Education

Indiana's performance in mathematics, the gateway to STEM learning and work, while not embarrassing when compared to the range of states, falls far short of what is needed to educate current and coming generations of students for productive work in the STEM occupations:

- Our NAEP scores confirm that only some one-third of our 8th grade students are proficient in Mathematics;
- Scores from our high school Algebra I end-of-course assessments suggest that only one-fifth of such students are demonstrating proficiency in the course material;
- Our math SAT scores have remained effectively stagnant and are at a level well below that which predicts success in post-secondary courses or training; and
- Our ACT scores confirm that barely half of those students taking the exam can be expected to succeed in freshman Algebra in post-secondary education, and less than one-third in biology.

We take no comfort in norm-referenced comparisons that put us among other states. We take particular concern in the inverse of our students' performance: from one-half (ACT) to two-thirds (NAEP) to four-fifths (end of course assessments) of our students are performing below levels needed for the foundation of successful entry into a STEM occupation. That gets our attention, as it should. Our two year plan seeks to begin to reverse such numbers.

Indiana faces a particular mix of challenges in the path from mathematics to success in STEM courses:

- Our high schools do not yet reflect an adequate array of models that provide line of sight connections for students to possible future STEM occupations, offer students engagement in the applied work of the discipline, and ensure curricular content that prepares the student for success in mathematics, engineering, technology, or science after matriculation to post-secondary learning environments.
- We have a deficit of middle school teachers who are educated to teach algebra to today's interactive, digital millennial generation students.
- We have limited attention to the loop between preparation, induction and continued learning of high school STEM teachers and their students' success or failure in post-secondary environments.