Seneca Valley School District

- School district 30 miles from Pittsburgh
- 7,500 students and 850 teachers and staff
- 10 different schools
The Creativity, Innovation & Research Center (CIRC) at SVSD

- How STEM and CIRC work together
- Why we believe innovation was a missing link in education
- The role that spaces play
Thank you

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Seneca Valley School District
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DR. ANN BONITATIBUS, PRINCIPAL, THOMAS JEFFERSON HIGH SCHOOL FOR SCIENCE AND TECHNOLOGY
NSTA supports educators

- We are a community of over **35,000 members** from more than 100 countries.
- We reach **300,000 teachers** weekly across all of our networks.
- We offer **vetted classroom resources** and **professional learning** to help educators and administrators increase their effectiveness and create inclusive and equitable learning environments to improve student learning.
Mission: Transform science education to benefit all through professional learning, partnerships and advocacy.

Vision: Science literacy and education are recognized as vital to the future of our society, enabling us to make informed decisions about the collective challenges we face.
Need for technical and scientific workforce
Need for scientific literacy
Educators of science play a critical role
We need to train and retain more science educators
We need to train and retain more science educators

2021-2022 Data
41 states and DC reported shortage of science teachers

Increase in teacher considering leaving since the pandemic
43% of African American teachers are considering leaving the profession early.
We need to create a more diverse teacher workforce

Teachers

- 79% White
- 76% Female

K-12 Students

- 45% White
- 28% Hispanic
- 15% Black
We need to prioritize science for all students

Average time spent per day in elementary classrooms

- Science: 20 min.
- English/Lang. Arts: 90 min.
- Mathematics: 60 min.

Schools that offer no physics course

- 90% schools with large numbers of students living in poverty
- 43% schools with low numbers of students living in poverty
We need to prioritize science for all students

Science course offerings in schools where at least 80% of students are Black, Latino/a, or Indigenous

- 29% Offer No Biology Courses
- 42% Offer No Chemistry Courses
- 59% Offer No Physics Courses
48 states and the DC based their standards on the *Next Generation Science Standards (NGSS)* or the *Framework for K-12 Science Education*.
Elevate Science Education

- Science should have equal priority with mathematics and English language arts in federal accountability and assessment requirements
- Compensate Educators as Highly-skilled Professionals
- Provide Resources Needed for High-Quality Instructional Materials
- Support Professional Learning and Provide Mentoring for Educators
Denise A. Spangler

DEAN
MARY FRANCES EARLY COLLEGE OF EDUCATION UNIVERSITY OF GEORGIA 5 YEARS

FORMER ELEMENTARY SCHOOL CLASSROOM TEACHER

MATHEMATICS EDUCATOR

CHAIR, DEPARTMENT OF MATHEMATICS & SCIENCE EDUCATION UNIVERSITY OF GEORGIA 9 YEARS

MEMBER, NATIONAL COUNCIL OF TEACHERS OF MATHEMATICS BOARD OF DIRECTORS, 3 YEARS

MEMBER, CLARKE COUNTY SCHOOL DISTRICT BOARD OF EDUCATION, 12 YEARS
The Problem

- 200,000 vacant positions or positions filled by unqualified individuals in August 2022
- Schools serving low-income students and students of color have a disproportionate number of unqualified teachers
- Unqualified teachers more than twice as likely to leave the field in their first year
Degrees & certificates awarded in the last decade

MATHEMATICS & SCIENCE EDUCATION
DOWN 27%

Source: American Association of Colleges of Teacher Education
31% of educators were unlikely or highly unlikely to remain in education for another 5 years.

- Assessment
- Time
- Pressure/expectations
- Voice
- Mental health/wellness

https://tinyurl.com/teacherburnout2022
Teacher pay stagnated while the cost of a 4-year degree doubled

Professional learning/mentoring as part of the job

Content only preparation 2-3 X more likely to leave the profession than content + pedagogy

Grow your own programs

Paid residencies