DELRAN STEM ECOSYSTEM ALLIANCE

WHO WE ARE

Delran STEM Ecosystem Alliance is comprised of industry leaders, community organizations, higher education institutions, teachers, parents and pre-school partners. Stakeholders include Lockheed Martin, Department of Motor Vehicles, Radwell International, Princetel, Barnes & Noble, PSE&G, Perkins Center for the Arts, Princeton University, The University of Kentucky, Rider University, and Rowan College at Burlington County.

The Alliance serves 3,000 students in Delran, Burlington County by preparing them to achieve proficiency in STEM fields. We focus on underlying principles: Pointing girls and historically underrepresented students toward role models in STEM; Seeking out and successfully engaging young people to participate in high-quality, diverse and interconnected STEM learning experiences; and underscoring that STEM careers lead to meaningful careers.
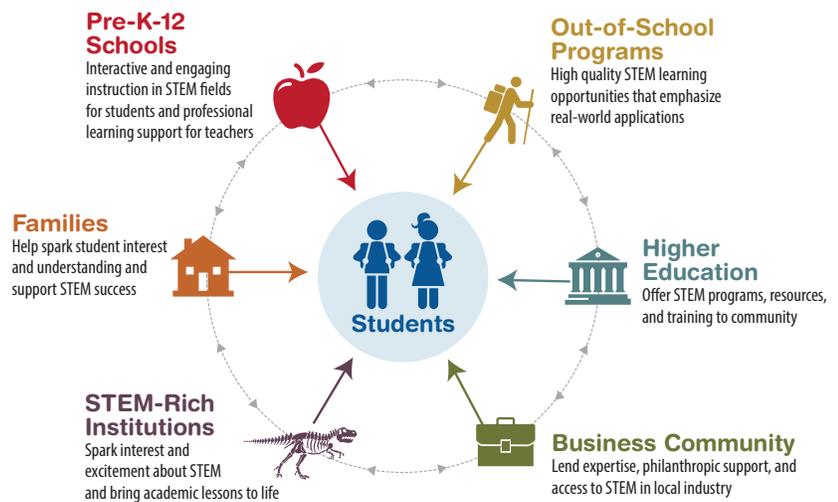
VISION

The **Delran STEM Ecosystem Alliance** provides an integrative, interactive system with a shared vision for developing and growing a sustainable and collaborative STEM community that is characterized by proactive and passionate thinking while providing all Delran learners equitable access to high-quality STEM learning and work opportunities.
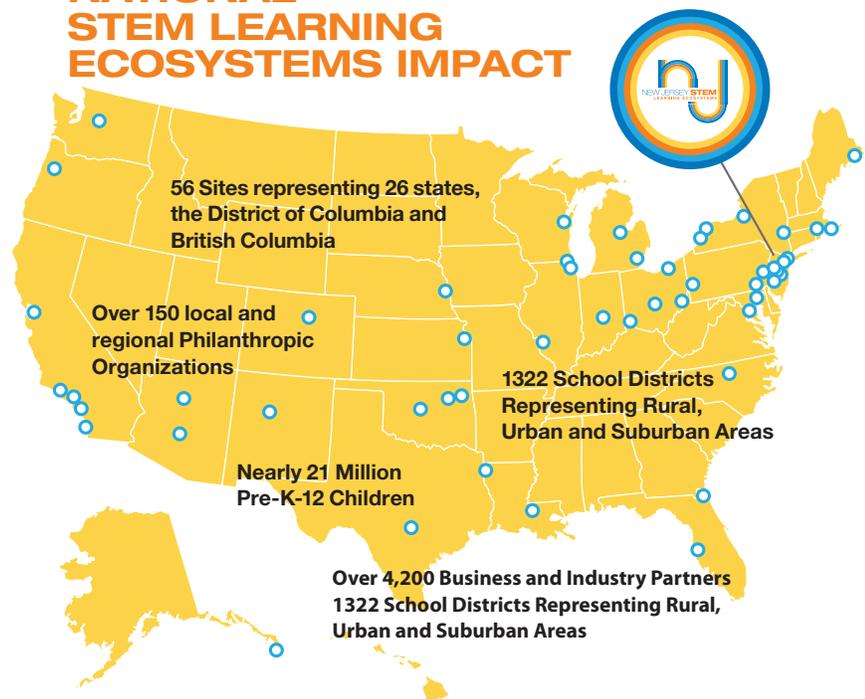
STATE AND NATIONAL NETWORK

The **Delran STEM Ecosystem Alliance** is one of **56 STEM Learning Ecosystems in North America** and is one of **four communities in New Jersey** to participate in a statewide campaign to reimagine STEM learning and prepare New Jersey's future workforce for STEM fields.

WHAT IS AN ECOSYSTEM?

An ecosystem is an interconnected, collaborative effort of a community working towards a shared vision.

Pre-K-12 Schools
Interactive and engaging instruction in STEM fields for students and professional learning support for teachers

Out-of-School Programs
High quality STEM learning opportunities that emphasize real-world applications

Families
Help spark student interest and understanding and support STEM success

Higher Education
Offer STEM programs, resources, and training to community

STEM-Rich Institutions
Spark interest and excitement about STEM and bring academic lessons to life

Business Community
Lend expertise, philanthropic support, and access to STEM in local industry

Students

NATIONAL STEM LEARNING ECOSYSTEMS IMPACT

56 Sites representing 26 states, the District of Columbia and British Columbia

Over 150 local and regional Philanthropic Organizations

1322 School Districts Representing Rural, Urban and Suburban Areas

Nearly 21 Million Pre-K-12 Children

Over 4,200 Business and Industry Partners
1322 School Districts Representing Rural, Urban and Suburban Areas

NEW JERSEY **STEM**
LEARNING ECOSYSTEMS
Delran STEM Ecosystem Alliance

THE NEED

In 2016, there were **2.4 million** unfilled STEM jobs in U.S.
(Smithsonian Science Education Center, 2015)

The U.S. Bureau of Labor Statistics projects that, during the period 2014–2024, employment in Science & Engineering occupations will grow by **28.2%**, compared to 6.5% on average for all occupations.

New Jersey is ranked **#12** in the nation for the number of current STEM or **STEM-related jobs** and by the year 2018, more than 269,000 STEM jobs will need to be filled.

Of the more than 6 million New Jersey high school students, only **1.6 million** are interested in pursuing a STEM career.

STEM workers **earn 26% more** than their non-STEM counterparts.
(U.S. Department of Commerce)

THE OPPORTUNITY

The demand for talent is growing. Between 2014 and 2024, growth in computing, advanced manufacturing, and engineering will meet or greatly exceed growth in non-STEM jobs.

+19% Computing

+16% Advanced Manufacturing

+12% Engineering

Almost all of the **30** fastest growing occupations in the next decade will require at least some background in STEM

Middle skill jobs that require **technology** grew **2.5** times faster between 2003 and 2013 than middle skills jobs that don't.

the U.S. would gain an extra **$2.5 trillion** in gross domestic product between now and 2050 if its students scored at the international average on math and science tests.

Source: Change the Equation, *The Diversity Dilemma*, 2015

PRIORITIES/AREAS OF WORK/INITIATIVES

NEW JERSEY STEM
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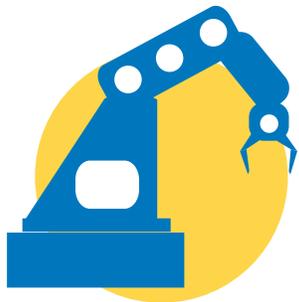
FAB LAB
(Fabrication Laboratory)

Platform for **project-based**, **hands-on** STEM education.
Authentic, **engaging**, **personal learning**.
Design cycle of **imagination**, **design**, **prototyping**, **reflection**, and **iteration**.
Relevant **21st century skills** and **workforce development needs**.

Delran Cubs STEAM Up Summer Camp

State of the art facilities in the Delran High School Science wing.
Week-long, **solution-focused exploration** on **real-world problems** such as cleaning an oil spill, designing windmills to harness energy, or designing a futuristic maglev system.
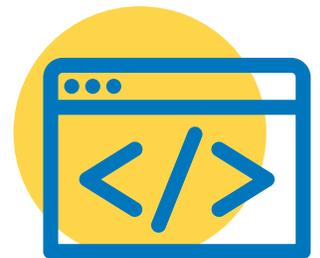
Robotics

Grades 1-2 participate in **FIRST LEGO League Jr.** activities.
Grades 3-5 build **LEGO EV3 robots** and complete **Space Challenge** activities.
Grades 6-8 participate in **FIRST LEGO League** competitions.
Robotics team competes in the **VEX Robotics** Competition.
Qualified for the **State Championship** Competition in 2016-2017, their first year with VEX.

Coding and Computer Science

College Prep Computer Programming and **AP Computer Science A** courses.
K-8 develop skills in computing in their elective course cycles.
The **Hour of Code** has been celebrated district wide by all 3,100 students during **Computer Science Education Week**.

STEM Fairs

Interactive STEM activities and displays.
A dozen student **clubs** and **organizations** from grades K-12.
Winning Science Fair entries from grades 6-12.
Ecosystem **business** and **community partners** showing **real-world STEM applications**, and interactive **STEM games** and **challenges**.

Sustainability

Green Teams, led by eight **Sustainability Project Managers**.
Earned the esteemed **Collaboration Award** for their work with the **Municipal Green Team**.
Sustainable Jersey for Schools is a certification program for New Jersey public schools that want to **go green**, **conserve resources** and take steps to create a **brighter future**. **Nonprofit** organization that **provides tools**, **training** and **financial incentives** to support and reward schools as they pursue sustainability programs, in the areas of "people", "planet" and "prosperity".