THE FINGER LAKES STEM HUB

"The Catalyst for STEM Collaborations in the Finger Lakes"

STEM POLICIES AND PRACTICES
2021 RECOMMENDATIONS

We believe that policymakers and practitioners at the local, state, and federal levels must focus on science, technology, engineering, and math (STEM) education to increase America's competitiveness in the global economy. This can be accomplished by supporting bright futures for all young people, revitalizing economies throughout the United States, fostering upward mobility in a growing workforce and securing access for those who have been left out of the STEM economy.

The Finger Lakes (FLX) STEM Hub network believes in creating equity of opportunity for all learners, promoting early formal and out of school time STEM learning, and linking STEM education and career exploration.

PROVIDE EQUITY OF OPPORTUNITY IN STEM FOR ALL LEARNERS

Policymakers must commit to racial, gender, and technological equity and ensure access to STEM education. The economically disadvantaged, BIPOC, and females are underrepresented in STEM professions.

Cultural upbringing and socialization create a mindset such that these populations shy away from desiring STEM careers. That is why parents, and/or significant others, including influential community members, must be exposed to STEM in order to encourage youth to seek careers in that field.

Access to high-speed internet for all must be a universal right. Workshops in diversity training must be provided to educators. After school programs by community organizations, including those in libraries, must be funded and made available in low-income communities. Successful models must be made available that demonstrate ways to foster equity of opportunity and resources to implement them.

BUILD A STRONG EARLY LEARNING SYSTEM

It is incumbent upon educators to integrate STEM into the curriculum starting in elementary school. Youth start to discover their career interests at an early age. Elementary teachers and Out-of-School Time (OST) educators are generally not prepared to effectively deliver STEM instruction at that level and thus avoid it. In this regard, preservice and in-service training has not been widely available.

New York State has developed new K-12 science standards. Current educators will be required to receive professional development on how to teach them and demonstrate to students the relationship of each standard to STEM careers and real-life experiences. Demonstrating these relationships is especially critical at the elementary level as youth begin to form their interests. Funding must be made available for educator training, student transportation, classroom equipment and other expenses.

LINK STEM EDUCATION AND CAREER EXPLORATION

We must create strong STEM career education pathways. Young people being to make early career decisions by 8th grade. In many cases, these decisions are uneducated and uninformed. They must be exposed to STEM careers and workplaces starting in elementary school and in Out-of-School Time (OST) programs.

Real-life hands-on experiences in STEM careers must expand beyond the traditional classroom. This can be accomplished through summer programs, makerspaces, STEM competitions such as robotics, OST programs provided by community organizations such as the boys and girls clubs and scouting, and increased youth on site access to businesses. In today's world there exists many educational pathways to successful high-tech careers in STEM. Parents and students must be made aware of all the options and combinations, which can include BOCES Career Tech and P-Tech programs, internships and apprenticeships, community college occupational certifications, two year, four-year and graduate degrees.

Guidance and career counselors play a critical role in advising students. They need to learn about the multiple educational pathways to a variety of successful STEM careers and how to match STEM careers to the skills and attributes of students.

ACKNOWLEDGEMENT

Inspiration for the development of these recommendations came from "Restoring America's Position As A World Leader By Investing In STEM" by the Teaching Institute for Excellence in STEM(TIES) and STEM Learning Ecosystem Community of Practice (SLECoP), January 2021

ABOUT THE FINGER LAKES (FLX) STEM HUB

The Finger Lakes STEM Hub is a growing network of approximately 150 K-12 and college educators, community organizations, businesses, family and youth providers, advocacy groups, policymakers, researchers, and funders. It serves as a catalyst for collaboration and communication among diverse partners to promote quality STEM education and career exploration opportunities for youth to make them college and career ready. The Hub covers a nine-county region in New

York State encompassing Greater Rochester and the Finger Lakes that includes Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming and Yates Counties. It is a regional Hub affiliated with SUNY's Empire State STEM Learning Network and a member of the international STEM Learning Ecosystem Community of Practice (SLECoP). It operates under the tax-exempt status of the Rochester Museum & Science Center and receives support from several community partners, who can be found on the FLX website (www.flxstem.org)

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