Rocket Science

THE FUTURE OF STEM IN HIGHER EDUCATION – ASSET-BASED RESPONSE OF UNIVERSITIES TO FEDERAL 5-YEAR STRATEGY

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Federal 5-Year Strategic Plan for STEM

Vision: All Americans have lifelong access to high-quality STEM education and the U.S. is the global leader in STEM literacy, innovation, and employment.

- Goals:
  1. Build Strong Foundations for STEM Literacy
  2. Increase Diversity, Equity, & Inclusion in STEM
  3. Prepare the STEM Workforce for the Future

- Strategic Pillars:
  1. Strategic Partnerships
  2. Engage where Disciplines Converge
  3. Build Computational Literacy
  4. Operate with Transparency and Accountability

Why take note?

- A lot of smart people got together and thought this through.
- Acknowledges what we already know.
- Major, critical agencies that fund our work are guided by this document.
STEM Education Ecosystem is Evolving

- Radical access to information
STEM Education
Ecosystem is Evolving

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- Rise in demand counter to historical elitism of higher education and STEM fields

STEM jobs are projected to grow 13%.

75% of fastest growing occupations in U.S. require significant mathematics or science skills.

Addeco, 2016
Change the Equation, ECS 2017
STEM Education
Ecosystem is Evolving

- Radical access to information.
- Rise in demand counter to historical elitism of higher education and STEM fields.
- Advent of unprecedented demand for diversity and expectation of inclusion.

- Intel - market representative by 2020
- AOL Inc. - 50% of female leadership by 2020
- BASF - 24% of women in leadership by 2021
STEM Education Ecosystem is Evolving

- Radical access to information
- Rise in demand counter to historical elitism of higher education and STEM fields
- Advent of unprecedented demand for diversity and expectation of inclusion
- First generation of “stand-alone” credentialing
A Future of STEM Higher Ed Challenge Statement
A Future of STEM Higher Ed Challenge Statement:
We often evaluate students based on type of support they need to achieve an outcome *rather than* on students’ ability to achieve outcomes with contextualized support. Can we shift this?
Compete to Win: STEM Ed Ecosystem

Universities are large, complex, and multifaceted. Therefore, universities have the capacity to not only compete within the modern STEM ecosystem, but also to create ecosystems of our own…

If we

• Innovate beyond monolithic, linear pathways of STEM Ed
• Maximize K-12 outreach beyond “community engagement”
• Adopt an individually optimized vs. deficit-minded approach to student support
Compete to Win: Literacy is the new STEM Currency

Universities are bastions of critical discourse and thought positioned to “engage students where disciplines converge.”

Given university capacity to engage students equally across technical, group-engaged, philosophical and critical thought platforms with expertise, we are in best position to support demand for all forms of STEM literacy...

If we

• Radically engage students where disciplines converge”
• Activate deliberate and strategic collisions between STEM and Liberal Arts
• Value and prioritize research that mines STEM teaching ‘trends’ for levers of impact
The future of STEM Education is not rocket science... and even if it was, we could teach that, too.

In fact, of course, we already do.

Continued Excellence in Higher Education
Propelled Response

National Strategy
- Partnerships
- Disciplines
- Converge
- Literacy

- Own ecosystem approach to STEM teaching & learning
- Maximize early pipeline
- Radical convergence of technical skills and literacy competencies across STEM
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