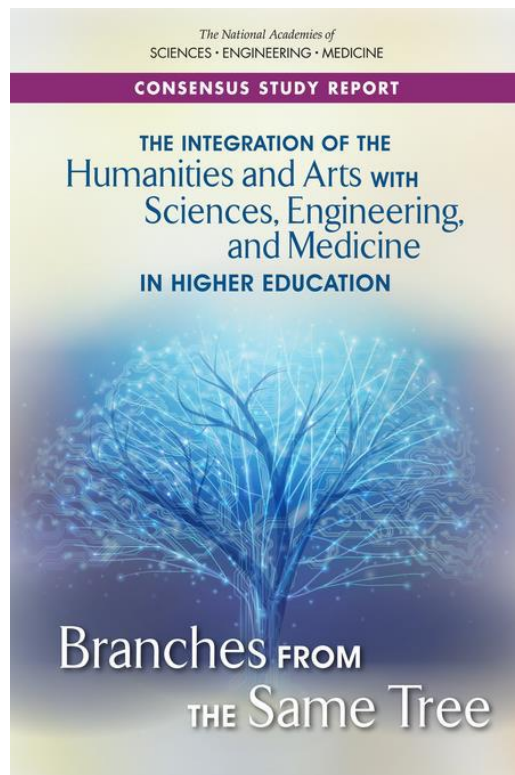


Branches from the Same Tree

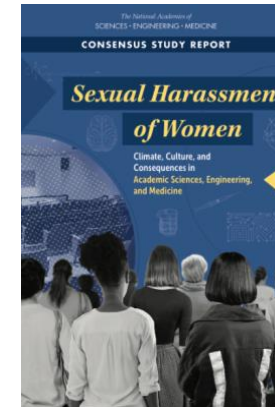
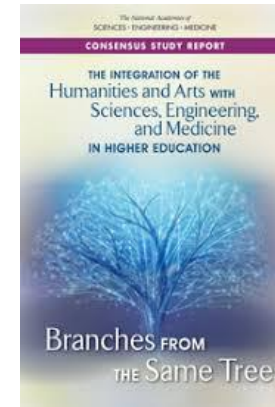
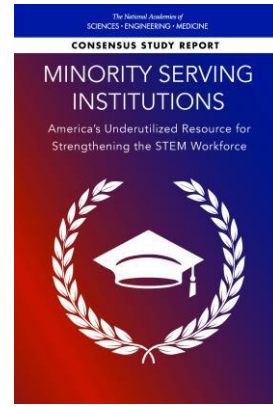
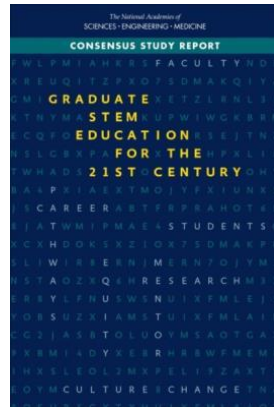
The Integration of the Humanities and Arts with
Sciences, Engineering, and Medicine in Higher Education



**Ashley Bear, Senior Program Officer
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Engineering, and Medicine**



What Should it Mean to be Educated in the 21st Century



“All religions, arts, and sciences are branches from the same tree”
-Albert Einstein



- Chaired by David Skorton, Former Secretary, Smithsonian Institution, current AAMC CEO and President
- Released in May 2018
- **Funders:** The Andrew W. Mellon Foundation, National Endowment for the Arts, National Endowment for the Humanities, The National Academies of Sciences, Engineering, and Medicine



What is Integration?

Integrative learning is the demonstrated ability to connect, apply, and/or synthesize information coherently from disparate contexts and perspectives, and make use of these new insights in multiple contexts.

Barber (2012, p. 593)



Rationale: Grand Challenges



Rationale: Integrative Education and the Demands of the 21st Century



Burning Glass analysis reveals that the following “baseline skills” were among the most highly demanded skills in a wide range of occupations, including highly technical jobs such as health care:

- Oral communication
- Writing
- Customer service
- Organizational skills, and
- Problem solving skills



What the committee found

A groundswell of interest in integrative approaches across the higher education landscape

Teaching approaches that integrate the humanities and arts with STEM are associated with positive learning outcomes

The integration of STEM content and pedagogies in the arts and humanities may improve S & T literacy



Learning Outcomes Can Be Grouped into Three Broad Categories

1. Technical Skills (e.g. visual diagnostic skills)
2. Cross-cutting skills and competencies (e.g. communication skills, critical thinking, teamwork)
3. Mindsets and motivations (positive motivations towards learning, empathy, resilience, tolerance for ambiguity)

Understanding and overcoming barriers

- Challenges of assessments
- Institutional barriers
 - Bureaucratic
 - Incentive
 - Budgetary
- Existing practices aimed at overcoming barriers



Recommendations

- ***Sustain*** ongoing integrative efforts that have shown promise, including but not limited to, new integrative models of general education.
- ***Provide*** resources for the hiring, research, teaching activities, and professional development of faculty who are capable of teaching integrative courses or programs.
- ***Evaluate*** the effectiveness of integrative educational models on student learning and workforce readiness.

