

# Advancing Design-related Technological Education: A Three-way Partnership

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# TechFIT

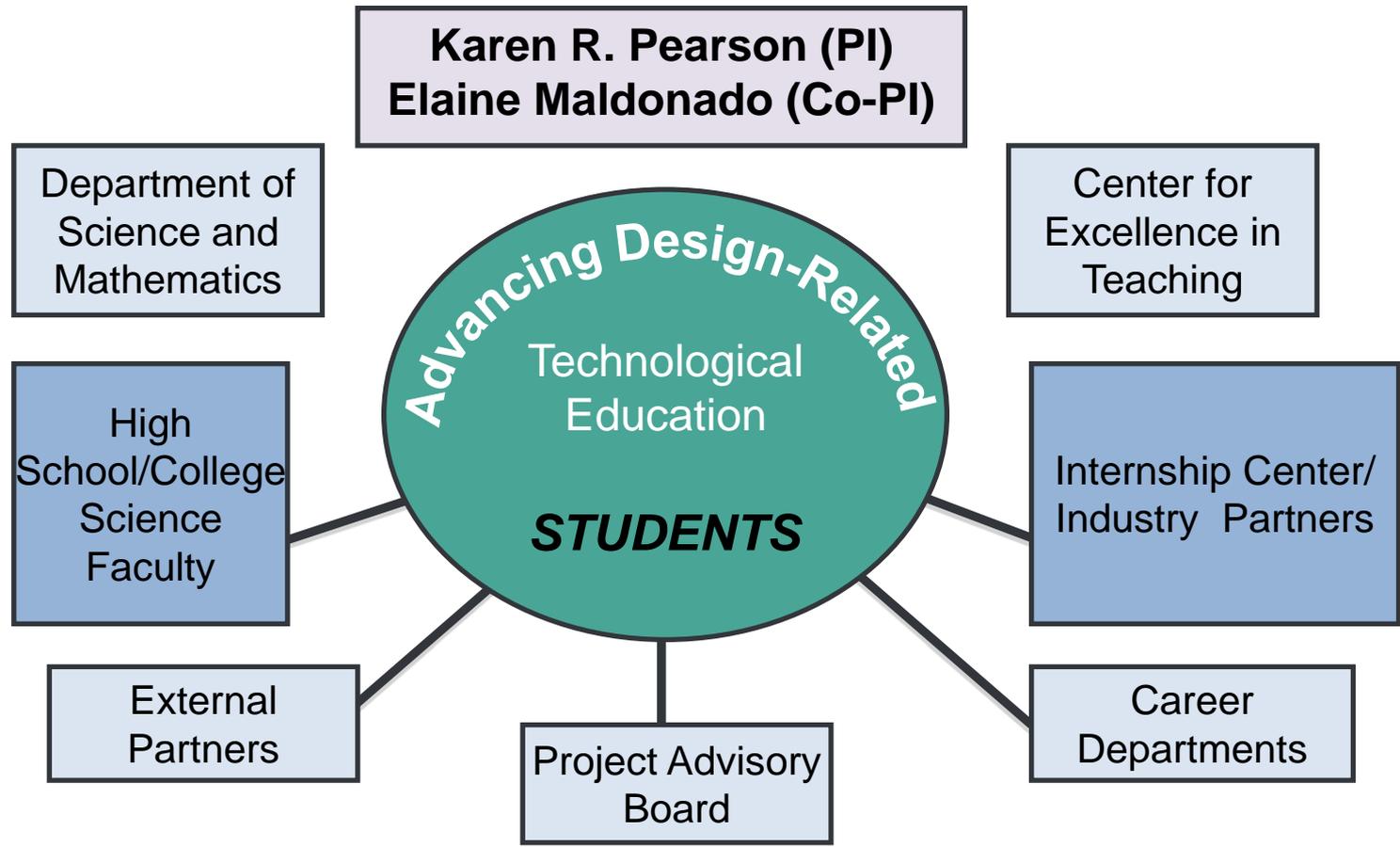


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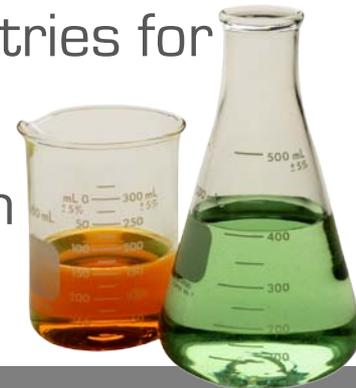
# Advancing Design-related Technological Education: A Three-way Partnership



# Project Goals



- To promote “thinking green” across the curriculum and better prepare FIT graduates to meet industry demands for the design, development and manufacture of green and sustainable products, including textiles, toys, home products, interiors , accessories and packaging.
- To improve student learning.
- To expand opportunities in STEM-related design industries for graduates.
  - STEM = Science ,Technology, Engineering and Math



# National Need



- Men outnumber women in all sectors of STEM employment. The greatest disparity is in business and industry -79% men vs. 21% women.<sup>1</sup>
- In 2007, Congress passed the Green Jobs Act and Steve Hargraves reports that the Apollo Institute of Technology expects to see “three million new green jobs over the next ten years.”<sup>2</sup>
- It is estimated that by 2013, the global apparel and textile industry will produce a value of approximately \$2.8 trillion dollars per year.<sup>3</sup>

# National Need



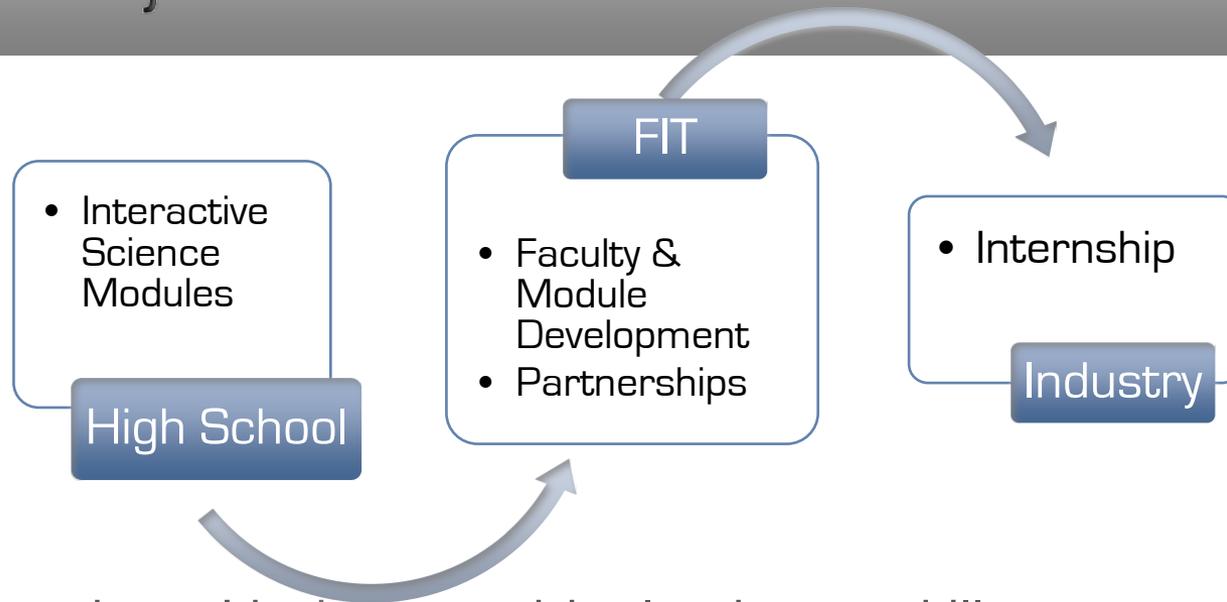
- Typically, high school science programs are not focused on the needs of students entering design/art fields.
- “When girls are intrigued by science, there is often a special emphasis on the relevance of science to social issues and to everyday occurrences with which girls are likely to be familiar.<sup>4</sup> Especially important are instructional practices that include “cooperative learning, teaching science concepts by doing.”<sup>5</sup>
- The greatest percentage of adjunct faculty teach in community colleges where student success clearly depends on teacher skill and experience.<sup>6</sup>

# Local Need



- 84% of the FIT student body is female.
- Many design graduates will find technological employment as CADD or CAID operators, tech designers, model-makers, production/manufacturing systems designers and supervisors and product developers.
- Many will conduct research and analysis in the development of new products such as toys, textiles, home products, packaging, interiors, accessories and fragrance and cosmetics, determining what materials will be used and how products will be manufactured.

# Major Objectives of TECH-FIT



1. Improve students' industry-critical science skills.
2. Prepare FIT graduates to meet industry demands for the design, development and manufacture of green and sustainable products.
3. Improve science teaching effectiveness.

# TECH-FIT Activities



- Guided by research on how women learn science, a new teaching model based on a “synthesis of best teaching practices” will maximize the unique creativity of FIT’s faculty and serve the needs of adjuncts and off-campus faculty.
- Development and implementation of bi-level, college and high school science curriculum modules.
- Development and implementation of green / sustainable project-based, science curricula and materials based on industry needs.



# Impact of TECH-FIT



- Increase design-related STEM employment opportunities for women.
- Contribute to research on how women and art/design students learn science.
- Produce nationally replicable products such as:
  1. Three-way “bridge” design
  2. Bi-level science modules
  3. Industry-based green science curricula
  4. Faculty development model that is both innovative and addresses the needs of part-time and off-campus faculty

# Broader Impact of TECH-FIT



- “Plug” the “leaky pipeline” in Science, Technology, Engineering and Math (STEM- women who start out in math/science, but who are not retained in these fields—including Design-related STEM fields.
- Decrease gender gaps in STEM employment. Although national math/science learning outcomes have improved for women in recent decades, men continue to far outnumber women in all sectors of STEM employment except teaching.
- Increase efforts to safeguard the environment and protect the health of citizens.

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**Thank You!**

[www.tech-fit.net](http://www.tech-fit.net)

**TechFIT**



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# Sources



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