Sustainable Building Science Technology Bachelor of Applied Science, an industry driven degree

Innovative Workforce Solutions - May 19, 2016

Alison Pugh, MBA; NSF Grant Director, South Seattle College, Georgetown
Who is South Seattle College?

- One of three colleges in the Seattle College District
- Seattle Colleges serves the city of Seattle and offers programs to nearly 50,000 students
- The Georgetown campus is a satellite campus of South Seattle College
  - Largest apprenticeship training center in the Northwest (63 trades programs)
  - Located in the industrial area of the city
  - 3 Bachelor of Applied Science degrees
    - Hospitality Management
    - Professional Technical Teacher Education
    - Sustainable Building Science Technology
Bachelor of Applied Science Degrees in Washington State

Legislature gives the State Board of Community and Technical Colleges authority to pilot Bachelor of Applied Science programs.

- 2005: South Seattle College piloted Hospitality Management BAS
- 2007: Sustainability Building Science Technology Bachelor of Applied Science approved by the State Board
- 2010: SBST Cohort 1 Begins
- 2013: SBST First Graduating Class
- 2014: SBST First Graduating Class
- 2016: 55 Applied Bachelor degrees are currently approved in the state of Washington

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Sustainable Building Science Technology - A Brief History

- Partnerships & Grants for Short-Term Training, beginning 2008
  - Workforce Development Council of Seattle, City of Seattle, Seattle City Light, NEEC, many more
  - ARRA Funding
  - Puget Sound Regional Council i6 grant
- Labor and Industry Involvement
  - South/Georgetown have been at the table with industry and labor in this sector for more than 8 years
  - Connection to Apprenticeships in the building trades
  - Developed six short-term certificate courses that provided the foundation for this degree
  - Industry and college partners have voiced a need for degree program

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January 2013
Degree Outcomes Mapping Meeting

- More than 40 participants from industry
- 17 Learning outcomes for the degree
  - Soft Skills – writing and communication
  - Built Environment – energy audits, building assessments, building systems
  - Technical Skills – financial skills, data analysis, computer skills, and reports
- These learning outcomes informed the course development
  - 16 courses
  - 10 credits of work experience
  - 9 credits of internship
  - Capstone project

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What's different about our bachelor's degree?

- Close relationship with industry
  - Technical Advisory Board
  - Need relevant working experience to be admitted
  - Internship classes throughout the program
- A degree for the working professional
  - Hybrid – 80% online with Saturday class meetings 1x month
  - Can receive credit for prior learning experience
  - Articulates with apprenticeship
- Veteran-friendly
  - Tuition discount
  - Can receive credit for military training
  - Veteran’s support
- GREAT VALUE!
  - Less expensive than university ~$2600/quarter
  - No out-of-state tuition hike for non-residents
  - Waivers accepted for state employees

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A National Science Foundation Partnership

ATE Project Grant: Expanding Lifelong STEM Career Pathways in Sustainable Building Science Technology (1406320)

Three Year Project: August 2014 - July 2017
Program Demographics

SBST Program Gender Mix

- C1 '14-'15: 27% Male, 73% Female
- C2 '15-'16: 28% Male, 72% Female
- Cumulative: 27% Male, 73% Female

SBST Program Ethnicity Mix

- White
- Other Non-White
- Native Hawaiian or Other Pacific Islanders
- Hispanic or Latino
- Black or African-American
- Asian
- American Indian or Alaska Native
Pathways into the Degree

- **OBJECTIVE** - **Recruit**, retain and graduate students from industry, people of color, veterans, women and other career-changers.

- Develop articulations
  - 0 → 11

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Project Activities

**OBJECTIVE** - Develop innovative bachelors of applied science (BAS) curriculum in sustainable building science technology (SBST).

Use of community learning laboratories

- Microsoft, Global Energy Management
- Bullitt Center
- Eastlake Building at Fred Hutchinson
- Continuous need for industry support

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Future Activities

- **OBJECTIVE** – Grow the STEM pipeline by exposing high school students to the education and career opportunities in sustainable building science technology.
  - Develop summer workshop program for high school teachers

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Supply and Demand

Framing Energy through Sustainable Building Science Technology

Overview

The NSF Grant Summer Teacher Institute is a STEM-focused professional development experience that is specifically designed to unite district educators and industry professionals to do the following:

- Examine the relationship between energy and sustainable building science technology.
- Learn and utilize tools, such as Portfolio Manager, an interactive resource management tool that tracks and assesses energy and water use in commercial buildings.
- Participate in field trips to smart buildings.
- Discuss STEM workforce pipeline issues, and identify career opportunities and educational pathways.
- Exchange ideas that promote career readiness and postsecondary access.

Institute Outcomes

By the end of the experience, you should be able to do the following:

- Demonstrate an understanding of building science.
- Measure, diagnose and understand building system interactions, and summarize results in order to compare to standards or specifications.
  - Use computer programs used in building industries and quality assurance to make fact-based decisions.
- Identify industry specific solutions from analysis.
- Develop a teaching unit in sustainable building science technology
  - Apply learning in another setting

Commitment

- Attend 30 hours of teacher institute and share teaching unit curriculum and assessment with institute organizers (Stipend - TBD)
- Apply learning at the STEM Summer Learning Opportunities for students at Cleveland High School – required for Cleveland High School instructors (Stipend – TBD)

TO REGISTER:

http://georgetown.southseattle.edu/nsf

July 11 – 15, 2016

Hosted by:

SOUTH SEATTLE COLLEGE

One of the Seattle Colleges

Benefits

Earn clock hours for both institute and summer learning opportunities

Schedule

July 11, 2016, 9:00 a.m. – 4:00 p.m.
South Seattle College, Georgetown

July 12, 2016, 9:00 a.m. – 4:00 p.m.
Smart Building Center, Seattle

July 13, 2016, 9:00 a.m. – 4:00 p.m.
Tour: Bullitt Center, Fred Hutchinson Cancer Research Center

July 14, 2016, 9:00 a.m. – 4:00 p.m.
South Seattle College, Georgetown

July 15, 2016, 9:00 a.m. – 12:00 p.m.
South Seattle College, Georgetown

With partners:
Questions?

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www.southseattle.edu/programs/bas/sustainable-building-science-technology

http://georgetown.southseattle.edu/nsf

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