Louisiana Tech’s Model for Running a GCSP at Minimal Cost

LA Tech GCSP Oversight Committee

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Program Aspects

• **Recruiting**: getting word out about the program and getting students interested

• **Grand Challenge Scholars Program fulfillment**: giving students different options to meet criteria in each of the five areas:
  - Research experience
  - Interdisciplinary curriculum
  - Entrepreneurship
  - Global dimension
  - Service learning

• **Showcasing Results**: let GCSP apprentices completing the program discuss their experiences
Recruiting

Means of communication and information:
• webpage
• presentations from oversight committee members to classes
• posters and plasma slides around engineering building
• information booths at campus events w/ brochures

Interest meetings
• held twice per year
• slides about GCSP program shown
• steering committee members available for Q & A
• pizza/snacks and drinks provided

Incentives to students
• no financial incentives currently available
• recognition by National Academy of Engineering
• unique opportunity not available to all students nationwide
• prestigious distinction for job or grad school applications
Program Fulfillment: Research Experience

• Senior capstone research or design project/course(s)

• Team or independent project

• Must be related to a Grand Challenge Theme or specific Grand Challenge problem

Costs associated with senior design projects are handled through those classes. Some are

- industrial or client-sponsored
- funded by grants or the department
- funded by the students themselves
Program Fulfillment: Interdisciplinary Curriculum

• Living With the Lab Integrated Engineering Curriculum, or “hands-on” project-based learning with student teams from all engineering majors

• Integrated Science Curriculum

plus

• A specified course in one of the following:
  medical ethics,
  international business relations,
  business law,
  cultural geography,
  government, or
  sociology
Program Fulfillment: Entrepreneurship

• Grand Challenge-related project in the Top Dawg Business Plan Competition

or

• specified courses in:
  innovative product design and
  innovative venture research
Program Fulfillment: Global Dimension

• Tech Study Abroad Program, or
• International Study Program, or

Students traveling abroad must pay their own way, but some have been successful in finding scholarships.

• Internship /Research Experience with significant global focus, or

• Specified course in Cultural Geography and one of the following:
  - Modern History of Eastern Europe, Near East, or Latin America
  - Politics of Developing Nations
  - Asian Politics
  - Comparative Foreign Governments
  - International Relations
  - American Foreign Policy

Students must justify how the selected experience cultivates global awareness.
Program Fulfillment: Service Learning

- Engineers without Borders project*, or

- Work as Supplemental Instructor or BARC Tutor for 1+ years, or

- Louisiana Tech Engineering & Science Association service project*

- Equivalent approved project*

*must be a sustained, substantial contribution for 1 or more years
Curricular Connectivity

• GC Curricular Plan must demonstrate connectivity across the 5 curricular components and a GC-themed problem

• All courses must be completed with a grade of “B” or higher

Scholar Designation

After successful completion of the program, GC Scholar Apprentices will be

• Designated Louisiana Tech College of Engineering and Science Grand Challenge Scholars at graduation

☐ Special recognition by University President at commencement

☐ Awarded bronze medal to be worn at ceremony

• Recognized by the National Academy of Engineering
Showcasing Results

When GCSP Apprentices finish the program, they are required to give a presentation describing their experiences

• students and faculty invited to attend, especially those involved with or interested in the program
• apprentice gives details of GC theme, courses taken, research performed, etc.
• Q & A session at end
• refreshments provided

Good Recruiting Tool

• students get to tell other students what they’ve learned and how the program has helped them
• one of our GC Scholars talked about how his GCSP-related research has led to patent opportunities and an NSF Graduate Fellowship
Total Costs

Monetary costs minimal
- Information – posters, brochures, etc.
- Food – refreshments for information and showcase meetings
- Medals

Time costs
- Information – preparing brochures, visiting classes, updating website, etc.
- Meetings
  - GCSP steering committee meets to review applications, plan events, etc.
  - GC Mentors meet with apprentices once per quarter to review progress

Very manageable for a small enrollment
Louisiana Tech (~1500 total students in COES):
  - 12 students enrolled first year
  - ~12 students have enrolled for next year

Strategic Initiatives budget for the COES