

QEM NETWORK MENTORING WORKSHOP FOR UNDERREPRESENTED MINORITY UNDERGRADUATE STUDENTS & FACULTY/STAFF ADVISORS

Faculty Development

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ESTABLISHING STUDENT CHAPTERS OF PROFESSIONAL ORGANIZATIONS^{1,2}

- ◆ Why establish student chapters on campus
 - ◆ Benefits to students
 - ◆ Benefits to faculty
 - ◆ Benefits to university and professional society
- ◆ How to establish student chapters on campus
- ◆ Types of professional society
 - ◆ Discipline focused
 - ◆ Cross-disciplinary
- ◆ Helpful Resources



BENEFITS TO STUDENTS¹

- Chance to learn about their future career
- Chance for leadership experience
 - Local chapter & national level
- Opportunities to network with professionals
 - Local speakers & at conferences & workshops
- Opportunities for internships & jobs
 - Sponsored by the organization
- Opportunities for fellowships & scholarships
 - Sponsored by the organization
- Mentoring from dedicated faculty
 - Group and individual mentors



BENEFITS TO FACULTY, INSTITUTION, & PROFESSIONAL ORGANIZATION

○ FACULTY

- Specialized service credit for P&T (?)
- Visibility and exposure in the national org.
- Access to gifted & motivated students

○ INSTITUTION

- Recognition by national chapter and peers
- Relevant ABET Criteria for departments

○ PROFESSIONAL ORGANIZATION

- Pipeline of new members
- Fulfill their teaching mission
- Link to colleges, universities, and faculty



ABET CRITERIA RELEVANT TO STUDENT CHAPTERS OF PROFESSIONAL SOCIETIES

- A. Apply mathematics science and engineering principles
- B. Ability to design and conduct experiments and interpret data
- C. Ability to design a system, component, or process to meet desired needs
- D. Ability function on multidisciplinary teams
- E. Ability to identify, formulate, and solve engineering problems
- F. Ability to understand professional and ethical responsibility
- G. Ability to communicate effectively
- H. Ability to understand the impact of engineering solutions in a global context
- I. Ability to recognize the need for and to engage in life-long learning
- J. Ability to know of contemporary issues
- K. Ability to use the techniques, skills, and modern engineering tools necessary for engineering practice



HOW TO ESTABLISH A STUDENT CHAPTER^{1,2}

- Contact the National Office of the Professional Organization
- Follow these general requirements
 1. A faculty advisor(s)
 2. Members
 - Officers, other members (with roles to play)
 3. Chapter constitution & bylaws
 - Use template
 4. Letter of support from department chair or dean
 5. Approval of registration as an official university organization
 - Contracted Independent Organization (CIO)



TYPES AND EXAMPLES OF ENGINEERING PROFESSIONAL ORGANIZATIONS

- Discipline affiliated organizations
 - AICHE, ASCE, ASME, BMES, IEEE, INCOSE, ...
 - <http://www.aidhe.org/>
 - <http://www.asce.org/>
 - <http://www.asme.org/>
 - <http://www.bmes.org/>
 - <http://www.ieee.org/portal/site>
 - <http://www.incose.org/>
- Cross-disciplinary organizations
 - NSBE, SHPE, SWE, TβΠ, EWB...
 - <http://national.nsbe.org/>
 - <http://oneshpe.shpe.org/wps/portal/national>
 - <http://societyofwomenengineers.swe.org/>
 - <http://www.tbp.org/pages/main.cfm>
 - <http://www.ewb-usa.org/>



PROVIDING HANDS-ON PRACTICE OPPORTUNITIES FOR ENGINEERING MAJORS

	Research Group	Student Org.	Class Project
Recruiting	<ul style="list-style-type: none"> - From classes - Applicants - Recommended 	<ul style="list-style-type: none"> - Officers - Other members - Multiple orgs. 	<ul style="list-style-type: none"> Students - Grad - Ugrad
Activities	<ul style="list-style-type: none"> - Lab Research - Writing papers - Conferences - Outreach (K-12) 	<ul style="list-style-type: none"> - Workshops - Service projects - Speakers - Web pages - Newsletters - Study groups 	<ul style="list-style-type: none"> -Short research - Campus projects -Presentations -Debates
Resources	<ul style="list-style-type: none"> -NSF REU -Grant funds -Scholarships 	<ul style="list-style-type: none"> -Regional chap -CIO support -Fundraising 	<ul style="list-style-type: none"> - For credit - Prizes - Awards - Conferences

Also co-op and internship opportunities for individuals

KEEP STUDENTS ON A HIGHER EDUCATION PATH

◆ Timing

- ◆ Coincide with other appropriate activities
 - ◆ Open house – INCOSE, ESWB, NSBE, SWE

◆ Student-led

- ◆ Support students to organize and implement
 - ◆ Tee-shirts, demos, outreach activities, grants

◆ Collaborate

- ◆ Multi-department, multiple faculty, grants

◆ Follow-up

- ◆ Opportunities for continued involvement, international



REFERRALS

1. <http://content.asce.org/files/pdf/ChapterApplication.pdf>
2. <http://www.ieee.org/web/membership/students/branchresources/stbforms.html#form>
3. <https://sites.google.com/a/scs.student.virginia.edu/eswb/>
4. http://people.virginia.edu/~lz3m/_AGWA%20Demo/index.html
5. <http://www.nsf.gov/pubs/2005/nsf05582/nsf05582.jsp>
6. <https://engineering.purdue.edu/EPICS/>

