Fall 2014  
College of Engineering

The review team found it difficult to identify, and thus evaluate, progress made and efforts planned in the College of Engineering 2014–19 strategic plan regarding each of the seven Framework Challenges, as was requested in the strategic planning guidelines. As a marketing plan, it is visually appealing and easy to read. As a strategic planning document, however, it is difficult to assess.

By contrast, the college’s 2010–15 Framework diversity strategic plan was detailed and comprehensive, with clear identification of the Framework Challenges, action items, and proposed outcomes. Despite promises for the next diversity cycle that the planning goals would be linked, the review team found no articulation between the 2010–2015 diversity strategic plan and either the current plan or the PowerPoint appendix.

The 2010–15 feedback report highlighted some notable ideas that the college might want to consider revisiting. Some of these include: programs supporting women in engineering and leadership; developing strategies to attend to issues from the climate survey; developing targeted recruitment processes in fields with shortage of women and underrepresented/underserved students; benchmarking against intercultural awareness initiatives at peer institutions; identifying ways to bring demographic and intellectual diversity to college committees; and improving infrastructure and support mechanisms so that every student participates in significant international experiences.

Diversity is one of the values in the current plan and is broadly referred to under two of the four strategic objectives and in one of the strategic goals. No clear objectives are related to diversity and inclusion, however superficial catchphrases like “increasing diversity,” “global awareness,” and “cultural sensitivity” are used throughout the document.

The documents submitted indicate that leaders in the college are working on a strategy implementation plan, which is promising. This section pledges to identify “goal champions” who will be afforded the necessary resources to assess progress moving forward. This kind of accountability for implementing and tracking projects will be critical to the success of future efforts.

The review team acknowledges the recent change of leadership has impacted the current plan and looks forward to the college once again being at the forefront of diversity strategic planning. The new leadership is encouraged to review earlier plans, which were thoughtful and thorough, along with the recommendations provided here when revising the current plan. Assuming diversity programs from the previous cycle have not been completely abandoned, Engineering may be doing work around issues of diversity and inclusion that is worth celebrating. However, when progress on previous endeavors is not provided, it cannot be evaluated and will go unrecognized.

**RESPONSE:** We received the feedback on the Diversity Strategic Plan of the College of Engineering, submitted in response to the recurring request for five-year strategies outlining University-wide efforts that support the seven challenges of the Framework to Foster Diversity 2010-15 and 2015-19. At the time that it was submitted, the College of Engineering was in the process of modifying its overall strategic planning process and establishing a rigorous implemented process.

Since its last submission of the overall COE Strategic Plan, which mentions Diversity as one of its core values, the College of Engineering has also developed three additional documents (attached) detailing support of this value:

1. **The Strategic Plan for Diversity addressing the seven challenges in the Framework to Foster Diversity**
2. The Strategy Implementation Plan for Diversity showing metrics, managers responsible for each goal and new finding that has been added to support diversity (totaling $858,000) from 2015-19

3. The COE Development Initiatives, two of which identify funding to support diversity and cross-cultural education the categories: Inclusive Penn State and The Global Engineer

Enabling actions aimed at accomplishing the College of Engineering’s Strategic Plan for Diversity are the subject of the Strategy Implementation Plan for Diversity for the College. Each goal is reviewed with a set of tactics and enabling actions listed. Goal champions have been identified and allocated the necessary resources for implementation and assessing progress. The 20 enabling actions listed in the Strategy Implementation Plan for Diversity in the College will be vigorously pursued, with the allocation of responsibilities, resources, timelines, milestones, and metrics of performance. As of 2015, $856,000 has been committed to supporting diversity in the College, enabling implementation. This is an historical record. There is additional funding for diversity efforts through other programs and initiatives in the College of Engineering.

Below is a brief response to how COE has addressed each of the seven challenges, and reference to the four documents above outlining where each challenge is addressed in more detail.

Campus Climate and Intergroup Relations

Challenge 1: Developing a Shared and Inclusive Understanding of Diversity
- The review team did not find any planning for this Challenge.

RESPONSE: This will include the creation of open forums to foster dialogue about diversity, modifications in media and public branding, and recognition of faculty, staff and students who make significant contributions to diversity. Reference Documents:
- COE Strategic Plan (pg. 3, Core Value- Diversity)
- Strategic Plan for Diversity (pg. 4)
- Strategy Implementation Plan for Diversity (pg. 2, Strategic Goal 1)

Challenge 2: Creating a Welcoming Campus Climate
- The review team did not find any planning for this Challenge.

RESPONSE: The College will identify and address barriers to a welcoming climate, be clear about resources available to overcome climate challenges, and enhance orientation for students, faculty and staff addressing the importance of diversity. Reference Documents:
- COE Strategic Plan (pg. 3, Core Value- Diversity)
- Strategic Plan for Diversity (pg. 4)
- Strategy Implementation Plan for Diversity (pg. 3, Strategic Goal 2)

Representation (Access and Success)

Challenge 3: Recruiting and Retaining a Diverse Student Body
- The review team did not find any planning for this Challenge.

RESPONSE: The College will enhance programming and resources that contribute to the retention of diverse populations at University Park and the Commonwealth Campuses. Reference documents:
- COE Strategic Plan (pg. 3, Core Value- Diversity; pg. 5, Strategic Goal 1 in Education)
- Strategic Plan for Diversity (pg. 5)
- Strategy Implementation Plan for Diversity (pg. 4, Strategic Goal 3)
- COE Development Initiatives (Inclusive Penn State)
Challenge 4: Recruiting and Retaining a Diverse Workforce
- The review team did not find any planning for this Challenge.

**RESPONSE:** Identify and follow best practices for increasing a diverse applicant pool and professional development of existing employees. Reference Documents:
- COE Strategic Plan (pg. 3, Core Value-Diversity)
- Strategic Plan for Diversity (pg. 5)
- Strategy Implementation Plan for Diversity (pg. 5, Strategic Goal 4)

Education and Scholarship

Challenge 5: Developing a Curriculum That Fosters U.S. and International Cultural Competencies
- The review team did not find any planning for this Challenge.

**RESPONSE:** Continue to stress the competencies of the world class engineer and increase international, cross-cultural learning experiences. Reference documents:
- COE Strategic Plan (pg. 3, Core Value-Diversity; Strategic Goal 1 in Education)
- Strategic Plan for Diversity (pg. 6)
- Strategy Implementation Plan for Diversity (pg. 6, Strategic Goal 5)
- COE Development Initiatives (The Global Engineer)

Institutional Viability and Vitality

Challenge 6: Diversifying University Leadership and Management
- The review team did not find any planning for this Challenge.

**RESPONSE:** COE will support leadership development opportunities for internal faculty and staff, open up searches to external applicants, and assure that search committees include a diverse composition of members. Reference documents:
- COE Strategic Plan (pg. 3, Core Value-Diversity)
- Strategic Plan for Diversity (pg. 6)
- Strategy Implementation Plan for Diversity (pg. 7, Strategic Goal 6)

Challenge 7: Coordinating Organizational Change to Support Our Diversity Goals
- The review team did not find any planning for this Challenge.

**RESPONSE:** The College’s goals, action items, and proposed outcomes for Challenge 7 reinforce the integration of the actions and outcomes of Challenges 1 through 6 in the COE Strategic Plan for Diversity activities. The college is also restructuring its leadership, financial goals and operations to support a diverse academic community. Reference documents:
- COE Strategic Plan (pg. 3, Core Value-Diversity)
- Strategic Plan for Diversity (pg. 6)
- Strategy Implementation Plan for Diversity (pg. 8, Strategic Goal 7)
- COE Development Initiatives (Inclusive Penn State)

Response: Attached are three documents.
DIVERSITY
Penn State College of Engineering

2014-2019 STRATEGY
PREAMBLE

The College of Engineering is committed to fostering diversity by continuing to build a welcoming and supportive environment for its students, faculty, staff, partners, and other constituents and to nurturing a learning and working environment that respects differences in culture, age, gender, race, ethnicity, physical ability, sexual orientation, and religious affiliation.

The leadership of the Penn State College of Engineering is one of the most diverse academic units in the STEM field anywhere. Among institutions who are members of the Committee on Institutional Cooperation (CIC), Penn State has the second-highest enrollment of undergraduate students, ranking first in the total number of Bachelor’s degrees awarded, first in the number of Bachelor’s degrees awarded to underrepresented students, and third in the number of degrees awarded to women (seventh in the nation for the number of B.S. degrees awarded to women). Penn State ranks third among CIC institutions for the number of Ph.D.’s awarded to African American, Hispanic, and Native American engineers. The American Society for Engineering Education statistics on over 300 engineering institutions in the U.S. indicate that Penn State ranks in the top ten institutions for numbers of tenured and tenure-track Asian, African American, and Hispanic faculty, and fourth in the number of tenured and tenure-track women engineering faculty. While Penn State’s numbers are higher than most of its peer institutions, the percentages of women and underrepresented groups are lower. We are committed to broadening participation in our programs and creating an inclusive community that celebrates the intellectual richness that diversity leads to.

This document presents our values, vision, mission, and goals related to diversity. The goals are grouped according to the seven challenges identified by the University.
VALUES

Excellence
We pursue excellence in our educational, research, and service programs, supporting our faculty, staff, and students in their individual and collective efforts to achieve their professional and personal career goals. We expect, value, and recognize excellence from our faculty, staff, and students.

Innovation
We seek and embrace innovation and creativity in teaching and learning; research and discovery; service and engagement; and governance of our academy.

Professionalism
We perform our work safely and at the highest level, exercising good judgment, and interacting collegially both inside and outside of Penn State.

Integrity
We respect others, conduct ourselves ethically, honestly and openly, honor our commitments, and fairly resolve ethical issues in our work.

Diversity
We value living and working in a diverse community that enriches cultural and technical experiences, and we strive to enhance the diversity of our faculty, staff, students, and collaborators.

Collaboration
We collaborate across disciplinary, administrative, cultural, and political boundaries to understand and integrate expertise and experiences complementary to ours and to facilitate devising innovative solutions to societal challenges.

Sustainability
We conduct our academic mission in a safe and sustainable manner, strive to protect and enhance our natural and built environment for future generations, and permeate sustainability principles in our interactions with students, staff, faculty, and collaborators.

VISION

The College of Engineering will be a top-ranked preeminent global academy in world-class engineering education and learning, research and discovery, and service to and engagement with the technical community and civil society.
MISSION
To nurture and train world-class, socially aware, globally connected, diverse engineers, educators, and researchers with rigorous core knowledge and problem-solving skills, who understand complex, interacting engineering and societal systems. To develop innovative solutions to the world’s most pressing challenges through transformational interdisciplinary research.

STRATEGIC GOALS IN DIVERSITY

Develop a Shared and Inclusive Understanding of Diversity
Through community debate, we aim to define diversity in its broad remit, in the context of the College of Engineering at Penn State, its value to society and its relationship to the quality and success of organizations as well as a healthy work environment. We aim to create a community that deeply believes in the value of diversity and withholds the principles and necessary actions to enhance the diversity of our community.

Actions:
1. Organize town halls and forums to foster a dialogue among faculty, staff, and students about the value of diversity.
2. Include content in the College’s media and publications that demonstrates a commitment to diversity and reflects our belief in an inclusive environment.
3. Recognize our staff, faculty, and students who make significant contributions to achieving the College’s diversity goals.

Create a Welcoming Campus Climate
A welcoming environment in which each member of the College of Engineering community feels appreciated by and is respectful of their colleagues is necessary for us to achieve our individual and collective potential. We plan to create a climate that is inclusive and encourages technical and cultural diversity.

Actions:
4. Identify barriers to the creation of a welcoming climate through dialogue, surveys, and community studies, and create programs that breach the identified barriers.
5. Communicate broadly the College and University resources available to overcome climate challenges.
6. Enhance orientation programs for faculty, staff, and students to emphasize the importance of diversity.

Recruit and Retain a Diverse Student Body
The capabilities and training of our students to address global challenges requires that they work and live in a diverse community on campus, in order for them to appreciate the cultural and technical contexts of transnational projects and career paths. We will work diligently to broaden the diversity profile of our students through the actions below.

Actions:
7. Devise and implement policies and tactics that have a positive influence on the diversity of our new students and that enhance the retention of new and existing students.
8. Work with the Commonwealth Campuses to increase the diversity of their undergraduate engineering student body and develop programs to retain them through their transition to University Park and beyond.
9. Strengthen and broaden participation in programs directed at retention of our diverse students and those populations who statistically have the least access to resources needed to yield an engineering degree.

Recruit and Retain a Diverse Workforce
The diversity of the student body is strongly influenced by the diversity of the workforce. It is essential that our workforce is inclusive of all sectors of society and represents our belief in a diverse, harmonious, and inclusive Penn State Engineering community.

Actions:
10. Identify and assimilate best practices for increasing the diversity of the applicant pool for positions.
11. Broaden the technical scope of faculty searches to increase the applicant pool diversity and potential for building a more inclusive professoriate.
12. Strengthen career development opportunities to enhance retention.
Develop a Curriculum that Fosters Cultural Competencies

World-class engineers must understand, value, and incorporate cultural context into their profession in order to produce effective solutions to complex problems. We will infuse the theme of becoming a world-class engineer broadly into our curriculum and provide further opportunities for our students to strengthen their global awareness.

Actions:
13. Continue to stress the characteristics of the world-class engineer throughout the undergraduate experience and extend it to the graduate student level.
14. Increase educational experiences aimed at developing international and intercultural competencies.
15. Increase curricular elements and extracurricular programs that engage students in solving complex socio-technical transnational problems.

Diversify University Leadership and Management

An organization advocating inclusiveness can only be successful if it starts with its leadership. We will continue to emphasize diversity in leadership and management and seek to broaden representation in the decision making process. We will identify and nurture future leaders among our workforce who believe in the value of diversity.

Actions:
16. Create and support leadership development opportunities for faculty and staff to increase the diversity of qualified internal applicant for leadership positions.
17. Open up search to external applicants whenever possible.
18. Assure that the membership of search committees is representative of our community and College units.
STRATEGY IMPLEMENTATION PLAN

The 18 actions listed above are being included in the strategy implementation plan of the College, and will be vigorously pursued, with the allocation of responsibilities, resources, timelines, milestones, and metrics of performance.
STRATEGY IMPLEMENTATION PLAN FOR DIVERSITY

During the past year, targeted investment and initiatives, as outlined in this document, have been institutionalized to enhance the diversity and inclusiveness in the College of Engineering. These demonstrate the College’s determination to continually and successfully promote diversity competence consistently across all departments and units, targeting all members of the College of Engineering community. For 2015-2019, for the first time, approximately $900,000 has been allocated to diversity initiatives in the college. There are also diversity-related investment through other programs, such as the Leonard Center work on climate studies, and the new focus on diversity in fundraising, with one of six fundraising thrusts entitled ‘Inclusive Penn State’ and another on ‘The Global Engineer’. The steps taken are identified with each goal in this document.

Tactics and enabling actions aimed at accomplishing the College of Engineering’s Strategic Goals for Diversity are the subject of the Strategy Implementation Plan for Diversity for the College. Each goal is reviewed and a set of tactics and enabling actions listed. Goal champions have been identified and allocated the necessary resources for implementation and for assessing progress. The 20 enabling actions listed in the Strategy Implementation Plan for Diversity are being vigorously pursued, with the allocation of responsibilities, resources, timelines, milestones, and metrics of performance.
Develop a Shared and Inclusive Understanding of Diversity

Through community debate, we aim to define diversity in its broad remit, in the context of the College of Engineering at Penn State, its value to society and its relationship to the quality and success of organizations as well as a healthy work environment. We aim to create a community that deeply believes in the value of diversity and upholds the principles and necessary actions to enhance the diversity of our community.

Enabling Actions:

1. a. Organize town halls and forums to foster a dialogue among faculty, staff and students about the value of diversity.

1. b. Include content in the College’s media and publications that demonstrates a commitment to diversity and reflects our belief in an inclusive environment.

1. c. Recognize our staff, faculty and students who make significant contributions to achieving the College’s diversity goals.

<table>
<thead>
<tr>
<th>Enabling Action</th>
<th>PH</th>
<th>Manager</th>
<th>Metric</th>
<th>Target</th>
<th>Support for New Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organize forums to foster dialogue.</td>
<td>Freeman</td>
<td>Gardner, Freeman</td>
<td>115 staff and Faculty participating in 3 events per year</td>
<td>215 staff and faculty participating in 4 events per year + 150 students participating in one event per year</td>
<td>$22,500 over 5 years (2015-2019) Project: College-wide World Class Engineering Leadership Annual Conference</td>
</tr>
<tr>
<td>Include diversity content in College media</td>
<td>Freeman</td>
<td>Marsh</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recognition for those who make contributions to diversity</td>
<td>Freeman, Elnashai</td>
<td>Recognize 2 per year</td>
<td>Recognize 10 per year</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Create a Welcoming Campus Climate

A welcoming environment in which each member of the College of Engineering community feels appreciated by and is respectful of their colleagues is necessary for us to achieve our individual and collective potential. We plan to create a climate that is inclusive and encourages technical and cultural diversity.

Enabling Actions:

2. a. Identify barriers to the creation of a welcoming climate through dialogue, surveys and community studies, and create programs that breach the identified barriers.

2. b. Communicate broadly the College and University resources available to overcome climate challenges.

2. c. Enhance orientation programs for faculty, staff and students to emphasize the importance of diversity.

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</thead>
<tbody>
<tr>
<td>Identify and address barriers to the creation of a welcoming Climate</td>
<td>Freeman</td>
<td>Litzinger, Freeman</td>
<td>None</td>
<td>Complete extensive climate study of the College and act on findings</td>
<td>$65,000 not from Diversity Budget, for college-wide climate study for students and faculty in fall 2014</td>
</tr>
<tr>
<td>Communicate broadly the resources available to overcome climate challenges</td>
<td>Freeman</td>
<td>Marsh, Freeman</td>
<td>Currently referencing annual email info circulated from the President's office</td>
<td>Increase the media messaging, include this in orientation materials and on website</td>
<td></td>
</tr>
<tr>
<td>Enhance orientation programs emphasizing the importance of diversity</td>
<td>Freeman</td>
<td>Litzinger (Faculty), Mason (Staff), Masters &amp; Freeman (Students)</td>
<td>Mentioned in Orientations</td>
<td>Include short segment in each orientation on diversity and inclusion</td>
<td></td>
</tr>
</tbody>
</table>
Recruit and Retain a Diverse Student Body

The capabilities and training of our students to address global challenges requires that they work and live in a diverse community on campus, in order for them to appreciate the cultural and technical contexts of transnational projects and career paths. We will work diligently to broaden the diversity profile of our students through the actions below.

Enabling Actions:

3. a. Devise and implement policies and tactics that have a positive influence on the diversity of our new students and that enhance the retention of new and existing students.

3. b. Work with the campuses to increase the diversity of their undergraduate engineering student body and develop programs to retain them through their transition to University Park and beyond.

3. c. Strengthen and broaden participation in programs directed at retention of our diverse students and those populations who statistically have the least access to resources needed to yield an engineering degree.

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<th>Target</th>
<th>Support for New Initiatives</th>
</tr>
</thead>
<tbody>
<tr>
<td>Devise and implement policies to influence the diversity and retention of new students</td>
<td>Freeman</td>
<td>Gersie, Knobloch</td>
<td>700 incoming women and URM at UP in 2015</td>
<td>900 incoming women and URM at UP by 2019</td>
<td>$780,900 over five years (2015-2019) Projects: • Summer bridge for campus students and UP (math focus) • Added staffing in Diversity Office • Graduate recruitment support • Outreach Support</td>
</tr>
<tr>
<td>Work with Commonwealth Campuses to increase diversity of engineering students and retain after transition to UP</td>
<td>Freeman</td>
<td>Freeman, Edson</td>
<td>One retention program designated for 30 Campus FY URM. Participant graduation rate at 53% at PSU</td>
<td>Increase to two retention programs targeting 60 URM and Women at Campuses. Target 3 yr. retention rate for participants at 60%</td>
<td></td>
</tr>
<tr>
<td>Strengthen and broaden participation in programs directed at retention of our diverse students.</td>
<td></td>
<td>Knobloch, Gersie</td>
<td>The number of degrees awarded to URM is 103 and 277 to women</td>
<td>increase the number of degrees awarded to diverse students and women to 140 and 350 respectively, and the retention rate of URM at 55%</td>
<td></td>
</tr>
</tbody>
</table>
Strategic Goal 4

Recruit and Retain a Diverse Workforce
The diversity of the student body is strongly influenced by the diversity of the workforce. It is essential that our workforce is inclusive of all sectors of society and represents our belief in a diverse, harmonious and inclusive Penn State Engineering community.

Enabling Actions:

4. a. Identify and assimilate best practices for increasing the diversity of the applicant pool for positions.

4. b. Broaden the technical scope of faculty searches to increase the applicant pool diversity and potential for building a more inclusive professoriate.

4. c. Strengthen career development opportunities to enhance retention.

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<tr>
<th>Enabling Action</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Identify and assimilate best practices for increasing diversity of the applicant pool.</td>
<td>Freeman</td>
<td>Mason (HR), Freeman, Managers</td>
<td>None</td>
<td>Compile a list or a reference tool of best practices that is publically accessible</td>
<td>Advocacy and discussions in executive retreats</td>
</tr>
<tr>
<td>Broaden the technical scope of faculty searches to increase the applicant pool diversity.</td>
<td>Freeman</td>
<td>Dept. Heads</td>
<td>Women faculty at 16% (55 out of 353) URM faculty at 7% (25 out of 353)</td>
<td>Women faculty at 20% URM faculty at 10%</td>
<td></td>
</tr>
<tr>
<td>Strengthen career development opportunities to enhance retention</td>
<td>Freeman</td>
<td>Mason, Dept. Heads, Managers</td>
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</tr>
</tbody>
</table>
Develop a Curriculum that Fosters Cultural Competencies

World-class engineers must understand, value and incorporate cultural context into their profession in order to produce effective solutions to complex problems. We will infuse the theme of becoming a world-class engineer broadly into our curriculum and provide further opportunities for our students to strengthen their global awareness.

Enabling Actions:

5. a. Continue to stress the characteristics of the world-class engineer throughout the undergraduate experience and extend it to the graduate student level.

5. b. Increase educational experiences aimed at developing international and intercultural competencies.

5. c. Increase curricular elements and extracurricular programs that engage students in solving complex socio-technical transnational problems.

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<th>Target</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Continue to stress characteristics of World Class Engineer</td>
<td>Litzinger, Freeman</td>
<td>None</td>
<td>20 Grand Challenge graduates per year</td>
<td>$55,000 over five years (2015-19) Projects: • Travel grants for international educational experiences for multicultural and women students</td>
<td></td>
</tr>
<tr>
<td>Increase educational international and intercultural experiences</td>
<td>Freeman, Litzinger, and Global Engr Education Coordinator</td>
<td>Global Engineering Certificate to 10 students/year</td>
<td>Global Engineering Certificate to 30 students/year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increase programs that engage students in solving complex socio-technical transnational problems</td>
<td>SEDTPAA, other Dept heads, Litzinger</td>
<td>None collected</td>
<td>Create and compile a reference tool that shows transnational programming available in the College and tracks numbers of participants. Engage 500 students/year</td>
<td></td>
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</tr>
</tbody>
</table>
Strategic Goal 6

Diversify University Leadership and Management
An organization advocating inclusiveness can only be successful if it starts with its leadership. We will continue to emphasize diversity in leadership and management and seek to broaden representation in the decision making process. We will identify and nurture future leaders among our workforce who believe in the value of diversity.

Enabling Actions:

6.a. Create and support leadership development opportunities for faculty and staff to increase the diversity of qualified internal applicant for leadership positions.

6.b. Open up searched to external applicants whenever possible.

6.c. Assure that the membership of search committees is representative of our community and College units.

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Create and support leadership development opportunities to increase diversity of internal leadership positions</td>
<td>Freeman</td>
<td>HR, dept heads</td>
<td></td>
<td></td>
<td>Advocacy and continued formal monitoring of all searches</td>
</tr>
<tr>
<td>Open up searches to external applicants</td>
<td>HR, dept heads</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assure that the membership of search committees is representative of our community</td>
<td>HR, dept heads</td>
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Strategic Goal 7

Coordinate Organizational Changes to Support the Diversity Goals

The College’s goals, action items, and proposed outcomes for Challenge 7 reinforce the integration of the actions and outcomes of Challenges 1 through 6 in the College Strategic Plan activities.

Enabling Actions:

7.a.  Articulate linkage between the College of Engineering Strategic Plan and its Diversity Initiatives.

7.b.  Achieve sustainability by institutionalizing key actions outlined in Challenges 1 through 6.

<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Articulate linkage between the College of Engineering Strategic Plan and its Diversity Initiatives.</td>
<td>Elnashai, Marsh</td>
<td>Diversity Strategy and Implementation presented as a separate document from the College plan.</td>
<td>Include all parts of the COE Strategy and Implementation Plan together as a single document or website with several sections (College plan, Diversity, Finance, etc.) giving equally broad visibility to the College's Commitment to Diversity.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Achieve sustainability by institutionalizing key actions outlined in Challenges 1 through 6. | Elnashai | Largest commitment to diversity programming in COE history ($900,000 over 5 years). Additional development goals for 200 endowed scholarships for women and URM. | Sustained institutionalized actions should yield:  
  - Increased graduation rates of URMs to 60%,  
  - Increased numbers of engineering degrees awarded to women to 320 per year  
  - Increased diversity of Staff and Faculty to 10%  
  - Increased percentage of women faculty to 20% |                                                                           |
GO BEYOND WITH YOUR SUPPORT

Major Development Initiatives:

**Innovation in Undergraduate Education**
We aspire to transform the educational experience at Penn State Engineering, to uniquely brand our graduates as visionary leaders, integrators, global engineers with entrepreneurial skills and business acumen.

**The Global Engineer**
It is incumbent on Penn State Engineering to provide our students with hands-on global experiences that span the scope of expertise from engineering analysis and design, to financing options and international contract negotiations.

**Pioneers of Economic Development**
We seek to provide Master’s level scholarships to the top students from around the world. Penn State continuing students and top students from other universities that do not offer such degrees. Attracting top engineers to Pennsylvania will underpin economic development in the Commonwealth as well as further bolster Penn State’s reputation as a driving force for economic development.

**Professor of the Future**
Branding our Ph.D. graduates as leaders-in-the-making is essential for the College’s stature and reputation among our peer institutions. We also seek to host potential faculty members on short post-doctoral fellowships, a tactic used by top U.S. schools.

**Inclusive Penn State**
We are challenged to improve our diversity profile at all levels and this target requires concerted effort and resources to recruit and retain the best students.

**Frontiers of Discovery**
It is crucial that we increase the number of professorships and chairs to achieve our goal of hiring and retaining the best faculty. Further, we aim to push the boundaries of knowledge by investing in innovative research, including initiatives of importance to our industrial partners.
Innovation in Undergraduate Education

The Penn State Engineering experience for undergraduate students is exceptionally deep and rigorous. Our graduates are sought after by both industry and higher education, and are widely known as strong in engineering fundamentals and creative problem solving. We aspire to transform the educational experience at Penn State Engineering, to uniquely brand our graduates as visionary leaders, integrators, global engineers with entrepreneurial skills and business acumen.

We seek to achieve our undergraduate education goals through the development of:

- Leadership, entrepreneurship, business scholarships
  *Five-year target: $10,000,000 endowment funds 200 scholarships at $2,500 each.*

- Project-based teaching and learning
  *Five-year target: $1,000,000 commitment funds 6 programs at $8,500 each.*

- Engineering-in-the-Community Undergraduate Scholarship program
  *Five-year target: $2,000,000 commitment enables 5 scholarships at $20,000 each.*

- Grand Challenge curriculum expansion
  *Five-year target: $2,000,000 commitment means a $50,000 boost for two programs to build problem-based majors and minors supporting engineering Grand Challenges such as renewable energy or autonomous infrastructure systems.*

- Scholarships for Undergraduate Research Experience
  *Five-year target: 140 scholarships of $6,700 each, funded by $19,000,000 endowment.*

- College of Engineering Student Collaboratory facility
  *Five-year target: A $30,000,000 donation will enable the College to build a new facility focused on student learning—additional classrooms, new labs, study spaces, and collaborative environments outfitted with technology to connect students to resources around the world.*
The Global Engineer

In today’s connected world the majority of engineering projects are transnational from technical, financial, and managerial viewpoints. It is incumbent on Penn State Engineering to provide our students with hands-on global experiences that span the scope of expertise from engineering analysis and design, to financing options and international contract negotiations. The Global Engineer is designed to support our students’ experiential learning opportunities on a global level.

- Engineering Global Leaders and Learning scholarships
  *Five-year target: A total of 280 scholarships, funded at $3,200 each, made possible by an $18,000,000 gift.*

- Global Research Outreach fellowships
  *Five-year target: A $2,000,000 gift funds 40 scholarships at $2,500 each.*
Pioneers of Economic Development

With the demands from sectors of industry for specialized and advanced engineering talent and with the professional societies increasingly advocating for a Master’s Degree as the entry level degree, market demand for 12-month Master’s degree graduates—both M.Eng. and M.S.—is at an unprecedented level. We seek to provide Master’s-level scholarships to top students continuing their Penn State education and to top students from around the world. Attracting top engineers to Pennsylvania will strengthen and further bolster Penn State’s reputation as a driving force for Pennsylvania’s economic development.

- Engineering and Interdisciplinary Professional Master’s scholarships
  *Five-year target: $10,000,000 endowment will support graduate studies through 50 scholarships of $10,000 each.*

- Chemical/Biomedical Engineering building
  *Five-year target: A $10,000,000 gift to support the construction of a combined chemical engineering and biomedical engineering building.*
Professor of the Future

Developing top-quality faculty candidates is vital for the future of Penn State Engineering. With the increase in Penn Staters in academic positions in other universities, our stature and influence increases, and the uniqueness of our graduate program, confirmed. Branding our Ph.D. graduates as leaders in the making is essential for the College’s stature and reputation among our peer institutions. We also seek to host potential faculty members on short post-doctoral fellowships, a tactic used by top U.S. schools.

- Merit Ph.D. Excellence fellowships
  Five-year target: A $1,000,000 endowment (or a $50,000 cash gift per year) will fund an annual fellowship for outstanding Ph.D. candidates.

- Enrichment fellowships
  Five-year target: A $1,000,000 endowment (or a $50,000 cash gift per year) will fund an annual fellowship for Ph.D. candidates to explore opportunities outside Penn State.

- Teaching and leadership fellowships
  Five-year target: A $1,000,000 endowment (or a $50,000 cash gift per year) will fund an annual fellowship for Ph.D. candidates to strengthen their teaching and leadership skills.

- Leadership training fellowships
  Five-year target: A $1,000,000 endowment (or a $50,000 cash gift per year) will fund an annual fellowship for faculty members to strengthen their leadership skills.
Inclusive Penn State

We believe in nurturing an inclusive environment where our students, staff, and faculty prosper from the intellectual richness of diverse communities. We are challenged to improve our diversity profile at all levels and this target requires concerted effort and resources to recruit and retain the best students.

- **Women in Engineering merit awards**
  Five-year target: A $5,000,000 endowment supports 100 scholarships (at $2,500 each) for female engineering students.

- **Underrepresented groups in engineering merit awards**
  Five-year target: A $5,000,000 endowment supports 100 scholarships (at $2,500 each) for engineering students from underrepresented groups.

- **Millennium Scholars program**
  Five-year target: A $10,000,000 gift provides perpetual scholarship support for 35 Millennium Scholars, a Penn State program for engineering students who plan to pursue a Ph.D. in a STEM-based field, at $14,000 each.
Frontiers of Discovery

Competing for and hiring the best faculty in the United States is critical to the future of our College. It is crucial that we increase the number of professorships (early-career and full) and chairs to achieve our goal of hiring and retaining the best faculty. Further, we aim to push the boundaries of knowledge by investing in innovative research, including initiatives of importance to our industrial partners. To achieve this goal we seek both direct funding of particular research topics and partnership in advising Ph.D. students.

- Professorships and chairs in interdisciplinary areas
  Five-year target: A $12,000,000 endowment provides support for 6 professorships/chairs at $100,000 each.

- Interdisciplinary Innovation Research Grants programs
  Five-year target: A $10,000,000 endowment provides support for 10 research grants for faculty at $50,000 each.

- Engineering-Institutes professorships/chairs
  Five-year target: A $10,000,000 endowment funds 5 professorships/chairs (at $100,000 each) to recognize faculty members whose research supports both the College of Engineering and major Penn State Institutes.

- Joint Industry Research Horizons grants
  Five-year target: A $10,000,000 endowment funds 5 grants (at $100,000 each) that support the research needs of industry partners.