TO: Debasish Dutta, Provost and Executive Vice President for Academic Affairs and Diversity  
FROM: Leah H. Jamieson, The John A. Edwardson Dean of Engineering  
SUBJECT: Request to establish the School of Environmental and Ecological Engineering in the College of Engineering  
DATE: October 25, 2016

As outlined in the attached proposal, Environmental and Ecological Engineering (EEE) was established as a Division in the College of Engineering in 2006. With this proposal, we request conversion of EEE from its status as a Division to a School.

In the College of Engineering, a division is an independent, interdisciplinary unit that has the rights of a department or school in that it may develop and offer certificate and degree programs at the undergraduate and/or graduate levels. Unlike a department or school, faculty hold joint appointments or affiliate appointments in the division, but do not have their tenure home in the division. Further, the distinction between a department and a school in the College of Engineering is that our schools offer both undergraduate and PhD degrees, whereas departments offer one or the other, but not both. Environmental and Ecological Engineering awarded its first BSEE degree in 2013 and, with the 2015 approval of master’s and PhD degrees by the Indiana Commission for Higher Education, welcomed its first cohort of master’s and PhD graduate students to campus in August 2016, offering its MSEE and PhD degrees under the auspices of the College of Engineering. The proposal to convert EEE to a School therefore reflects the significant milestones EEE has achieved over the past 10 years, as well as the tremendous promise we see for EEE in the future.

This proposal has my whole-hearted support. With EEE, I believe that Purdue has created a unique approach to addressing the grand challenges of sustainability and leveraging the interplay of traditional environmental engineering and industrial sustainability. EEE’s approach both takes advantage of and enhances the growing efforts in complex systems that now involve over half the colleges at Purdue.

While the field of environmental engineering has grown nationally, Purdue’s broad approach that cuts across disciplines sets it apart, and positions Purdue to be a national and global leader. And although the conversion from a division to a school could be perceived as weakening the interdisciplinary nature of EEE, the proposal that has been developed by the EEE faculty makes it clear that, both conceptually and structurally, EEE is committed to maintaining and continuing to build on its unique interdisciplinary foundation. With the conversion to a school, faculty hired in the future will be able to choose EEE as their tenure home. At the same time, EEE has committed to continuing the model of joint appointments that has been central to its development. This combination — status as a school that gives EEE the ability to take the lead in faculty hiring combined with a commitment to strong connections with other schools and departments through joint appointments — will allow EEE to pursue its vision with the same boldness and academic rights as our other leading academic programs. I firmly believe EEE has earned this status.

Office of the Dean

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A Proposal to Establish the
School of Environmental and Ecological Engineering

A. Brief Justification
In the 1990’s, the field of environmental engineering emerged from within Civil/Sanitary/Chemical Engineering as an established independent engineering discipline. In 1991 there were only 11 ABET accredited Environmental Engineering degree programs. Today, there are 68 accredited degree programs (only undergraduate degree programs are generally ABET accredited) with additional programs in the process of seeking accreditation. In 1993, the National Council of Examiners for Engineers and Surveyors offered the first exams leading to a Professional Engineer license in Environmental Engineering. In 1999, the U.S. Department of Labor began publishing employment data for “Environmental Engineers”. Today, the Bureau of Labor Statistics projects a robust 5,000 employment openings in Environmental Engineering positions each year. The U.S. News & World Report ranks “Environmental/Environmental Health” as a separate specialty within engineering.

The Purdue College of Engineering established the Division of Environmental and Ecological Engineering (EEE) on July 1, 2006. EEE was created to enhance the visibility and promote the synergy of environmentally related educational, research, and outreach programs across Purdue, with a particular emphasis on the College of Engineering. EEE was charged with establishing undergraduate and graduate curricula/degree programs, promoting research collaborations in relevant environmental areas, supporting interdisciplinary approaches to engineering and environmental challenges, and assuming ever-greater levels of leadership in environmental issues.

The Environmental and Ecological Engineering program at Purdue was intentionally designed to be innovative and distinct relative to conventional environmental engineering programs. In addition to the rich heritage of environmental engineering, EEE embraces industrial sustainability as a key element of its identity. The name, ‘Environmental and Ecological Engineering,’ highlights an approach to managing complex problems with an integrated perspective that considers both environmental processes and ecological interactions. This identity makes EEE unique relative to environmental engineering programs at peer institutions. The EEE perspective for addressing environmental and industrial sustainability issues is focused on understanding ecological interactions and developing resilient designs that take into account complexity and connectivity between systems. For example, the development of next generation bioenergy systems seems to offer a promising alternative to fossil fuels. However, it is only through a rigorous holistic and life-cycle oriented examination of all the systems involved that the true impact of bioenergy can be assessed in terms of carbon balance, water consumption, food vs. fuel tradeoffs, job creation, land use changes, etc. Another case that illustrates the benefit of the broad EEE perspective is the management of end-of-life (EOL) products such as envisioned with the philosophy of a circular economy. Only by considering the economic and environmental consequences and existing technologies for various product EOL options (e.g., reuse, remanufacturing, recycling, and disposal) can an appropriate EOL strategy be selected.

EEE developed a BSEE degree that was approved by the State of Indiana in 2012; 10 students graduated from the BSEE degree program in Spring 2013. Following the ABET visit to Purdue
in Fall 2013, the BSEEE degree program was retroactively accredited to October 2012. For Fall 2016, the undergraduate program has 112 enrolled students of which 63 are women. Since Spring 2013, a total of 72 students have earned their BSEEE degree and become Purdue University alumni/alumnae. EEE MS and PhD programs were approved by the State in August 2015. The first new EEE graduate courses were offered in January 2016. Without any marketing or publicity EEE received more than 120 applications for Fall 2016 admission to the new EEE graduate program (approximately 50% were women). The first cohort of EEE graduate students admitted from these applications began classes in August 2016. As of Fall 2016, the EEE graduate program has 12 M.S. and 10 Ph.D. students.

In terms of faculty to support its mission, EEE has 6 FTE (full time equivalent) faculty associated with 16 individuals. The EEE Fehsenfeld Family Head arrived at Purdue in 2009 and has a full time appointment in EEE. During the 2013-2014 period, EEE was fortunate to secure 50% FTE appointments of five existing tenured faculty (2.5 FTE). Thanks to the strategic growth of the College of Engineering from 2011-2016, EEE was authorized to hire ten new faculty (five of whom were women). As a non-tenure granting unit, EEE successfully partnered with six different programs to bring these new faculty to campus. However, each of these 10 hires has just a 25% appointment in EEE (since EEE is not the tenure home). The total FTE for the 10 hires is 2.5 FTE. The 6.0 FTE faculty members associated with EEE are marginally sufficient to support the current undergraduate and graduate teaching responsibilities. Over time, it is expected that some EEE faculty who progress through the ranks will move to 50% appointments.

In navigating the joint hiring process, only faculty applicants who aligned with the interests of both EEE and a home (tenure granting) unit could be considered. A consequence of this was that several outstanding faculty candidates that EEE wished to hire could not be pursued because of a lack of a tenure home. Moreover, several short-listed candidates withdrew their applications when they learned that EEE would not be their tenure home. EEE believes that to continue to pursue the goals established by the College of Engineering in 2006, EEE must transition to the status of a School that has the ability to serve as a tenure home for faculty.

The current Division status constrains EEE’s capacity to develop further. As a Division, the external visibility and internal sovereignty of EEE is diminished. The external perspective of EEE is that it is part of, or held within, another unit. EEE is often viewed as the minor partner in the many partnerships that have been established. Without tenure granting privileges, the Graduate School does not allow EEE to offer graduate degree programs. As a result, the College of Engineering is currently the official owner of the EEE graduate degrees (EEE manages the graduate program on behalf of the College). Make no mistake – EEE embraces the interdisciplinary joint appointment model under which so much has been accomplished, and believes that the current participation by faculty from seven distinct academic units on campus is a unique strength. However, EEE seeks the rights and privileges of a full and whole partner.

In terms of the promotion and tenure process for faculty, EEE’s voice is confined to advisory input to the Head and Primary Committee of the tenure-granting unit. EEE seeks the right to have representation in the College of Engineering Promotion and Tenure process for the eight Assistant Professors who will soon seek advancement to Associate Professor in Engineering (two EEE Assistant Professors have tenure homes in the College of Agriculture). EEE believes that
the EEE tenured faculty with joint appointments are exceptionally informed and uniquely qualified to evaluate the accomplishments and scholarship of the EEE junior faculty with joint appointments in terms of promotion/tenure.

The benefits of transitioning Environmental and Ecological Engineering to the status of a School are many. The College of Engineering has arguably crafted the most unique and innovative environmental engineering program in the world. Allowing EEE to have equal and whole status, rights and privileges with our partners within Purdue University will enhance our visibility and magnify the impact of our vision. This will elevate our status among our peers nationally and internationally. A School of Environmental and Ecological Engineering would strengthen the College’s ability to recruit and retain women engineering students. A School of Environmental and Ecological Engineering will produce globally literate graduates prepared to provide leadership in meeting complex environmental, economic, and social challenges. The interdisciplinary faculty of a School of Environmental and Ecological Engineering will discover new knowledge to address a plethora of environmental challenges that span across multiple disciplines. A School of Environmental and Ecological Engineering will magnify our culture of collaboration and empower students, staff, and faculty to lead the change for a sustainable future.

There is tremendous support for the transition of EEE from Division to School. Appendix 1 presents the results of a survey that was conducted of the EEE External Advisory Committee (EEE-EAC). As is evident, the EAC members unanimously support EEE becoming a School. Appendix 1 also provides the outcome of a survey of the EEE graduates regarding the issue of EEE becoming a School. Again, there is unanimity in the support of Purdue EEE alumni/alumnae in terms of EEE becoming a School. Appendix 2 is an endorsement letter of a variety of key Purdue stakeholders (Deans, Associate Deans, and Heads) regarding the transition of EEE from a Division to a School. The letter shows the broad-based support for creating the School of Environmental and Ecological Engineering. Appendix 3 is a letter that presents a dissenting view on this transition, and Appendix 4 is Dean Jamieson’s response to this letter.
B. List of tenured/tenure track and other faculty whose appointments will be in the new unit

<table>
<thead>
<tr>
<th>Name</th>
<th>Percent Appt in EEE</th>
<th>Current Tenure Home</th>
<th>Future Tenure Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ernest (Chip) Blatchley</td>
<td>50%</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>Hua Cai</td>
<td>25%</td>
<td>IE</td>
<td>IE</td>
</tr>
<tr>
<td>Abigail Engelberth</td>
<td>25%</td>
<td>ABE</td>
<td>ABE</td>
</tr>
<tr>
<td>Brady Hardiman</td>
<td>25%</td>
<td>FNR</td>
<td>FNR</td>
</tr>
<tr>
<td>John Howarter</td>
<td>25%</td>
<td>MSE</td>
<td>MSE</td>
</tr>
<tr>
<td>Inez Hua</td>
<td>50%</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>Chad Jafvert</td>
<td>50%</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>Michael Mashtare</td>
<td>25%</td>
<td>AGRY</td>
<td>AGRY</td>
</tr>
<tr>
<td>Roshanak Nateghi</td>
<td>25%</td>
<td>IE</td>
<td>IE</td>
</tr>
<tr>
<td>Loring (Larry) Nies</td>
<td>50%</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>Amisha Shah</td>
<td>25%</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>Shweta Singh</td>
<td>25%</td>
<td>ABE</td>
<td>ABE</td>
</tr>
<tr>
<td>John Sutherland</td>
<td>100%</td>
<td>ME</td>
<td>EEE</td>
</tr>
<tr>
<td>Andrew Whelton</td>
<td>25%</td>
<td>CE</td>
<td>CE</td>
</tr>
<tr>
<td>Fu Zhao</td>
<td>50%</td>
<td>ME</td>
<td>ME</td>
</tr>
<tr>
<td>Zhi (George) Zhou</td>
<td>25%</td>
<td>CE</td>
<td>CE</td>
</tr>
</tbody>
</table>

Joint appointments require close collaboration and trust between the participating academic units to ensure that each faculty member has an appropriate workload from the units in which they hold appointments. The plan is for all of the current jointly appointed EEE faculty members to retain their current tenure homes and joint appointments following the transition of EEE from a Division to a School. Upon receiving tenure, each of these assistant professors will have the opportunity to adjust their appointment level in EEE (e.g., change the EEE appointment level from 25% to 50%). It is not envisioned that any of the jointly appointed faculty will change their tenure home to EEE. As part of the process of transitioning from a Division to a School, only the Head will have his tenure home transferred to EEE. It is to be noted that this Head was hired in 2009 with a 100% appointment in EEE, and therefore, does not hold a joint appointment.

Allowing EEE to serve as the tenure home for faculty will not directly affect any of the current EEE faculty with joint appointments. In the future, however, EEE would like the opportunity to serve as the tenure home for new faculty. That being said, EEE believes that joint appointments represent a powerful mechanism for ensuring and promoting the multidisciplinary character of an academic unit – and that such a character puts EEE in a powerful position to address the complex...
engineering/science challenges associated with environmental issues that are best tackled with a multidisciplinary approach. With this in mind, EEE envisions that most future EEE faculty will have joint appointments, some with majority appointments in EEE, and some with minor appointments. To preserve this multidisciplinary character, EEE will periodically assess the multidisciplinary nature of the EEE faculty appointments and recommend changes if necessary.

C. Identification of who will serve as the head for the new unit
John W. Sutherland is presently the Fehsenfeld Family Head of Environmental and Ecological Engineering, and will remain as the Head upon transition to a School.

D. List of degrees within the new unit with enrollment numbers attached for the past three years.
EEE awards an ABET accredited BSEE degree. In August 2015, the EEE Graduate Program was approved by ICHE to award MSEEE and PhD degrees. The first graduate students (5) enrolled in the program in Spring 2016 and there have as yet been no degrees awarded. The August 2016 cohort was 17 students, bringing the new graduate program enrollment to 22. The EEE Graduate Program is managed by EEE on behalf of the College of Engineering because EEE is a Division. When EEE becomes a School, the College of Engineering will transfer authority to EEE.

<table>
<thead>
<tr>
<th>Term</th>
<th>Enrollment</th>
<th>Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring 2013</td>
<td>51</td>
<td>10</td>
</tr>
<tr>
<td>Fall 2013</td>
<td>62</td>
<td>2</td>
</tr>
<tr>
<td>Spring 2014</td>
<td>64</td>
<td>13</td>
</tr>
<tr>
<td>Fall 2014</td>
<td>84</td>
<td>2</td>
</tr>
<tr>
<td>Spring 2015</td>
<td>89</td>
<td>23</td>
</tr>
<tr>
<td>Fall 2015</td>
<td>95</td>
<td>7</td>
</tr>
<tr>
<td>Spring 2016</td>
<td>97</td>
<td>15</td>
</tr>
</tbody>
</table>

E. A statement about the derivation of the budget for the new department or school
EEE is operating with an established budget process in the College. The budget is a combination of recurring and non-recurring funding. Recurring funding is in the form of salary support for faculty and staff. The non-recurring budget covers faculty summer salary, staff salaries that are not part of the recurring budget, instructional staff who teach EEE courses but are not EEE faculty, office operations, and startup for faculty.

In addition, EEE has the Fehsenfeld Family Head endowment that is used to support four broad forward-looking areas: 1) Student learning (25%), 2) Discovery and research (30%), 3) Initiatives of the head (30%), and 4) Outreach and engagement (15%).

Environmental and Ecological Engineering Administration is located on the third floor of the A.A. Potter Engineering Center. The office suite is comprised of a reception area, eight offices, an adjacent large reconfigurable space with cubicles for post-docs and graduate students and a
conference room. Except for the Head’s office located in the Potter Administration suite, EEE faculty offices and research facilities are distributed across the College in their respective tenure home units. This distributed space model will meet EEE needs for the foreseeable future. The College of Engineering Facilities Master Plan does envision an eventual migration of EEE to an identifiable core home on campus, complemented by continued collaboration with other academic units on campus via shared research and instructional labs

F. Proposed date for the initiation of the new unit.
January 1, 2017
Appendix 1

Results of Surveys of EEE External Advisory Council (EAC) Members and BSEEE Alumni

Surveys were sent out to the 15 members of the EEE External Advisor Council (EAC) and 67 BSEEE alumni/alumnae. Both surveys asked two things:
1. Should EEE become a School?
2. Why should EEE become a School?

The response to the first item is captured in the following table.

<table>
<thead>
<tr>
<th>Group</th>
<th>Number contacted</th>
<th>Number Responses</th>
<th>Response Rate</th>
<th>Strongly agree/agree</th>
<th>Neutral</th>
<th>Disagree/strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAC Members</td>
<td>15</td>
<td>15</td>
<td>100%</td>
<td>15</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>BSEEE Alumni</td>
<td>67</td>
<td>41</td>
<td>61%</td>
<td>41</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Selected responses to the second question are provided below.

EAC Member comments:
1. Purdue has the opportunity to differentiate itself from other engineering institutions by converting the division to a school. Study of the environment and the impact people and companies have on the environment will only gain in importance as the world population continues to grow on a steep incline for the next several decades. Best-in-class companies are making sustainability a strategic initiative. The "trial period" has been a big success, it is time to convert!
2. EEE should become a school so that it has access to all of the rights and privileges of the other schools that make up the Schools of Engineering at Purdue. In a day and time when there is more of a demand for environmental and ecological engineering graduates than ever, it is important for students to have access to obtaining a degree from a fully developed and accredited school, as opposed to a division.
3. This is a currently evolving field in the workplace and while historically positions related to Environmental areas have been filled by various engineering roles, more recent hiring practices have focused on personnel with specialized roles within the field.
4. EEE is an emerging engineering specialty that integrates environmental, social, and economic impact considerations into product and process design. EEE should become a school to attract and retain world-class faculty and undergraduate and graduate students.
5. The rapidly changing technology and efforts to integrate sustainability into every aspect of a business or system warrant Purdue to evolve the EEE program from a division to a school. The world is rapidly changing and this change will keep Purdue at the forefront.
Alumni comments:

1. EEE has branded and focused itself on wholly different aspects of the way we see the world through engineering. This division (as it is currently) has set itself apart from the rest of the schools by fostering student development and involvement in the realm of systems thinking, sustainability, the environment, and social justice. I feel that, as an alumnus, I have had a positively different academic experience because of EEE.

2. EEE is a top of the line, front of the pack program in a field that is constantly changing and improving. Each and every one of the EEE faculty are a part of the soon-to-be School out of their own interest and passion for making a difference in the world. This passion inspires a sense of community throughout all personnel (faculty, students, staff) in EEE. Those outside of EEE still have trouble recognizing it for the program that it is. EEE still largely exists in many minds as an offshoot of civil engineering, or a popular multidisciplinary program. Becoming a school, and earning all of the privileges and benefits that brings with it, will cement EEE’s reputation and credibility as another one of Purdue's exceptional Schools of Engineering.

3. The high integrity and initiative held by the EEE faculty, administration, and students since 2006 has shown the EEE Division will succeed as a School in the Purdue Engineering family. Personally, I cannot think of one major decision that has held so much positive influence over my life as much as deciding on EEE.

4. Environmental and Ecological Engineering is a distinct field of study that is becoming increasingly needed.

5. Environmental and Ecological Engineering is a rapidly growing field, and the demand for qualified engineers who are aware of the challenges in environmental and ecological systems will only continue to rise. Making EEE a School will allow the department to hire more renowned, tenure track faculty and create a graduate degree program under the Graduate School. These privileges will improve how people view the program and push Purdue and the College of Engineering to the forefront of the rapidly growing environmental engineering field in academia.

6. EEE is an established part of the engineering program at Purdue and should have the same rights and privileges as other Schools. Giving the EEE program tenure lines for faculty will attract more quality professors to the program and keep them in the program long term, benefitting both students and the reputation of the university.

7. The field of environmental and ecological engineering is growing rapidly. This program provides an opportunity for students to directly study environmental and ecological engineering.

8. This degree program is essential for preparing students for solving the challenges of the 21st century. EEE should have the same abilities and strengths as other Purdue Engineering programs so that they are able to prepare their students appropriately.
Appendix 2

Endorsement Letter from Key Purdue Stakeholders

Endorsement letter on the following pages
Date: September 29, 2016

To: Debasish Dutta, Provost and Executive Vice President Academic Affairs and Diversity

From: Leah Jamieson, The John A. Edwardson Dean of Engineering

Subject: Conversion of Environmental and Ecological Engineering from a Division to a School

We, the undersigned, are supportive of the proposal to convert Environmental and Ecological Engineering (EEE) from a Division to a School. We welcome the continuing opportunity to interact with EEE students, staff, and faculty.

Jay T. Akridge, Glenn W. Sample
Dean of Agriculture

Joe M. Anderson
Head, Agronomy

David Bahr
Head, Materials Engineering

Anil Bajaj
William E. and Florence E. Perry
Head of Mechanical Engineering

Date: 10/5/16

Date: 10/3/2016

Date: 9/30/16

Date: 10/14/16
Gary R. Bertoline  
Dean, Polytechnic Institute

Indraneel Chaudhry  
Head, Earth, Atmospheric, and Planetary Science

Melba M. Crawford  
Associate Dean of Engineering for Research

Abhijit Deshmukh  
James J. Solberg Head of Industrial Engineering

John (Barney) Dunning  
Associate Head of Academic Programs, Forestry and Natural Resources

Bernard Engel  
Head, Agricultural and Biological Engineering

Klod Kokini  
Associate Dean of Engineering for Academic Affairs

10/3/16  
Date

9/30/16  
Date

10/3/16  
Date

10/4/16  
Date

10/3/2016  
Date
Stephen Konieczny  
Interim Head, Biological Sciences  
10/5/2016  
Date

Linda S. Lee  
Head, Ecological Sciences & Engineering  
Interdisciplinary Graduate Program  
10/3/2016  
Date

Elizabeth Taparowsky  
Associate Dean for Research and  
Graduate Education, College of Science  
10/3/2016  
Date

Wei Zheng  
Head, Health Sciences  
9/30/2016  
Date

Timothy Zwier  
Head, Chemistry  
10/03/16  
Date
Appendix 3

Letter from Professor Rao S. Govindaraju, Head of Civil Engineering

Letter on the following pages
Dear Leah:

Thank you for allowing me to explain our School’s position on the matter of forming a new School of Environmental and Ecological Engineering (SEEE). At the outset, let me state that we (the faculty members of our School) like the EEE vision of addressing environmental and industrial sustainability issues, understanding ecological interactions, and developing resilient designs that take into account complexity and connectivity between systems. Indeed, we would like to continue being active participants in this space. We would hope that this vision could be realized without having to form a separate School.

Respectfully, our concerns with creating a separate SEEE are as follows:

1. Strong Civil and Environmental Engineering programs around the world have a common theme of being well anchored in three aspects: (i) mechanics for designs involving forces and material responses, (ii) transportation for systems approaches, and (iii) environmental engineering for using physical-chemical-biological processes in designing solutions. Most faculty profiles in our School are made up of some elements of these three specializations. Separating environmental engineering from the mix and placing it elsewhere weakens any civil engineering program.

2. With the creation of SEEE, it will be very difficult to maintain a strong environmental presence within Civil Engineering. In future, it will not be possible to make a convincing case for need-based faculty hires in the Environmental Engineering program within Civil Engineering, and Civil’s environmental program will potentially diminish with attrition despite best efforts to maintain joint appointments through EEE.

3. Both short- and long-term, our program rankings will likely be affected adversely. The top programs (as ranked by USNWR) in Civil Engineering have strong environmental expertise in the same unit. Similarly, the top Environmental Engineering programs are together with Civil Engineering. It will be very difficult to convince our peers that the Civil School at Purdue retains a strong environmental component when a separate Environmental Engineering program also exists within the College—and this perception will hurt us.

4. As a profession, Civil Engineering programs are hurting in terms of student enrollment. With formation of SEEE, our student numbers will go down further. Importantly, environmental programs have been more successful in attracting women students and therefore have contributed positively to the diversity of the student body. With SEEE, our Civil student diversity will go down.

I would like to add that we have been very supportive of the EEE division in terms of cross-listing courses to help faculty with joint appointments, and we are thrilled that we are now the tenure home for three recent EEE hires. We are absolutely committed to the success of all our faculty members. Our disappointment arises...
from being told that the only way the EEE vision can be realized is by forming a separate School. Our peer universities have strong programs, are able to offer accredited environmental degrees, are able to graduate competent environmental engineers into the workforce, their faculty members are very successful and explore new frontiers in environmental engineering—all without the need to form a separate unit. We fear that we set a precedent where fragmentation is seen as a solution to explore new spaces.

In conclusion, I will affirm our commitment to have a strong program where Environmental Engineering is highly valued for the richness it brings to our endeavors. When viewed from this one particular lens of forming a new School, we struggled to find any benefit to our Civil Engineering program.

Please let me know if you have any questions. Thanks again and best regards.

Sincerely,

Rao S. Govindaraju, PhD, PE, PH, DWRE, FEWRI, FASCE
Bowen Engineering Head of Civil Engineering
Christopher B. and Susan S. Burke Professor of School of Civil Engineering
Appendix 4

Perspective from Professor Leah Jamieson, Dean of Engineering

Memo on the following pages
TO: Debasish Dutta, Provost and Executive Vice President for Academic Affairs and Diversity

FROM: Leah H. Jamieson, The John A. Edwardson Dean of Engineering

SUBJECT: Dean’s perspective on Civil Engineering’s decision not to endorse the Environmental and Ecological Engineering proposal

DATE: October 25, 2016

As a part of the due diligence in preparing the proposal, the EEE leadership presented their draft proposal to key academic stakeholders at Purdue. Sixteen individuals have endorsed the proposal (Appendix 2). As noted in the memo from Professor Rao Govindaraju, Head of Civil Engineering, the School of Civil Engineering (CE) has declined to endorse the proposal (Appendix 3). Both in the letter and in discussions with Professor Govindaraju, he notes that the faculty in Civil Engineering evaluated the proposal through the lens of whether or not the conversion of EEE to a school offered a benefit to CE. While expressing enthusiasm for EEE’s vision, CE cites four concerns. I summarize these here, and offer my own perspective, which looks at the conversion from division to school through the lens of whether it is good for Engineering, Purdue, and, in the grandest terms, the planet.

1. **CE concern:** Separating environmental engineering weakens any civil engineering program and

2. **CE concern:** A School of Environmental and Ecological Engineering will make it difficult to maintain a strong environmental presence within CE.

   **Dean’s perspective:** EEE is committed to continuing to rely on joint appointments in order to ensure that this unique feature of Purdue’s program continues as a core attribute and strength of the program. In addition to enumerating the status of the current faculty, the proposal includes a commitment to “periodically assess the multidisciplinary nature of the EEE faculty appointments and recommend changes if necessary.” CE faculty with joint appointments will continue to have joint appointments. EEE also expects that most new hires will also have joint appointments. CE will therefore continue to have faculty whose specialization is in environmental engineering. With the new opportunity for EEE to be the tenure home for future faculty, some may indeed consider EEE their primary home, but the proposal does not represent a separation and does not remove environmental engineering from CE.

3. **CE concern:** CE rankings will likely be affected adversely.

   **Dean’s perspective:** U.S. News & World Report conducts separate rankings for Civil Engineering and for Environmental Engineering/Environmental Health. This has been the case for graduate program rankings since 1991 and for undergraduate rankings since 1996. The discipline rankings are based entirely on peer assessment, so heads are already ranking both CE and Environmental
Engineering. In the most recent undergraduate rankings, Purdue Civil is ranked #6 and Environmental is ranked #13; in the most recent graduate rankings, Civil is #6 and Environmental is #18.

Although Professor Govindaraju’s letter expresses concern that “It will be very difficult to convince our peers that the Civil School at Purdue retains a strong environmental component when a separate Environmental Engineering program also exists within the College,” my experience with rankings suggests otherwise. Heads complete the USNWR survey based on their impression of the institution’s overall strength in the given area. They consider the quality of the faculty and the body of work they associate with the institution, not with the specific department. I have had reason to track this because my own field of computer engineering has different departmental “homes” at different institutions, including different relationships between computer engineering and computer science at different institutions. I have consistently observed that growing prominence (or declining prominence) in any of the related academic units – whether it be computer engineering or computer science – is reflected in the computer engineering rankings. I therefore come to a different conclusion than the CE faculty: that increased success and prominence in environmental and ecological engineering at Purdue will contribute in a positive way to CE’s rankings, regardless of the academic structure.

4. **CE concern: Conversion of EEE to a School will exacerbate the decline in enrollment being experienced by CE.**

**Dean’s perspective:** There is no question that nationally, civil engineering enrollments are declining. However, in practical terms, EEE is already offering an accredited BS degree, as well as Master’s and PhD degrees. Becoming a school will not change the opportunities that students already have to select EEE as their major. It is almost certain that CE’s enrollments, both at Purdue and nationally, will recover. In the developed world, addressing the crumbling urban infrastructure is one of the National Academy of Engineering’s Grand Challenges. In the developing world, the need for advances in infrastructure of all kinds is a critical enabler for economic growth. Smart buildings, smart roads, smart materials, and new design and deployment methodologies that integrate technological, environmental, economic, and societal considerations represent exciting new opportunities for many fields, including civil engineering.

On a more philosophical note, the fact that civil engineering as a field is currently facing enrollment challenges is not a reason to stand in the way of an important growing area. The Bureau of Labor Statistics tracks environmental engineering jobs independently of civil engineering jobs. The BLS projects extremely robust employment opportunities in both civil engineering and environmental engineering, with 23,900 and 5,000 job openings available each year respectively. Opportunities in both disciplines are increasing at a healthy rate.

In closing, Purdue has created what is potentially the most forward-looking and innovative environmental engineering program in the world. I am confident that establishing the School of Environmental and Ecological Engineering will have significant impact on the entire field, and will make all of us at Purdue proud.