

Report of the Faculty Forum, 3/9/2010

Professor Dietrich Neumann (History of Art and Architecture) convened the second 2009-2010 Faculty Forum on March 9, 2010, at 4 p.m., for a discussion of a proposal to establish a School of Engineering at Brown University.

Prof. Neumann announced that Professor Clyde Briant (Vice President of Research, former Dean of the Division of Engineering), along with Professor Rodney Clifton (Interim Dean of Engineering) would address the faculty in the absence of Provost Kertzer.

Prof. Briant said that establishing a School of Engineering is an important step for Brown and that renaming the Division of Engineering is part of a natural evolution in the building of the sciences at Brown. Not to take this step, which all the other Ivy League universities have taken, he said, would reflect seriously on Brown. He observed that things are proceeding well in the process toward the change, and described the anticipated role of the Dean of the School of Engineering to build a School that will reflect the interests of the entire university. He read through the Resolution that was supported by the APC on February 16, 2010:

Be it resolved that Brown University will create a School of Engineering. This School of Engineering will be the new name of the current Division of Engineering. The creation of this school will not change the way in which undergraduates are admitted to Brown or the freedom that they currently have to consider engineering as one of many concentration options at Brown. Faculty appointments and promotions will continue to be approved by TPAC, or its successor University committee, following the standard processes used in all departments. Graduate admissions would continue to be processed by the University's Graduate School.

It is anticipated that with the creation of the School of Engineering, an international search will begin to select a new Dean to head the school. This new Dean will have the latitude to shape many of the details of the current proposal. The new Dean will also have three critical responsibilities: to increase the diversity among engineering faculty and students, to raise the necessary funds to support the new hires and new space, and to work closely with other departments and centers at Brown so that the activities built in engineering, especially around the three proposed research thrusts, are fully integrated into and supportive of ongoing activities in these areas outside of engineering at Brown.

Professor Briant said the critical first step is to hire a Dean, and he reiterated the importance of the Dean raising funds and working to integrate the School of Engineering with the university.

Professor Rod Clifton thanked the faculty who attended the forum and emphasized the point that the proposed School of Engineering would be an integral part of the university. He provided commentary to a slideshow, which began with a Rationale for the proposal:

- Engineering has much to offer at many levels: societal, state and local, university.
- Engineering at Brown needs to grow; its small size -- disproportionately so -- limits opportunities for multi-investigator grants and greater research collaboration.
- Modern research laboratories are needed to be competitive in 21st Century research.
- Greater visibility provided by a school would enhance recognition and opportunities for all of engineering and science at Brown.
- Establishing a school would create fund-raising opportunities for raising the necessary funds from Engineering alumni and parents as well as from foundations and corporations with engineering interests.
- Not making a commitment to a School and to its growth would raise concerns about Brown's commitment to the sciences and engineering as part of the Program for Academic Enrichment.

Photographs of Prince Engineering Laboratory ca. 1960 were shown to contrast with the kind of lab space needed for research today (represented by a picture of the sleek outside of Harvard's Science Building). Professor Clifton explained two acronyms, COE (Commerce, Organization and Entrepreneurship Program) and PRIME (Program in Innovation Management and Entrepreneurship) that relate to an emphasis on entrepreneurship as an area for growth. The Plan for Growth calls for 12 new faculty appointments across Micro/Nano Technology; Biomedical Engineering; Energy, Environment, and Infrastructure; and Entrepreneurship. The Plan for Growth also calls for 100,000 gross square feet of additional space for an interdisciplinary research laboratory, to be apportioned 35% to Engineering and 65% to other science departments and collaborative grants. A final slide presented an Outline of Incremental Financial Plan:

Expenses

- 12 New Faculty Members
- 12 Start-up packages
- 36 New Ph.D. students (27 RAs, 9 Fellows)
- 5.5 Administrative positions
- Program Support
- \$100M Interdisciplinary Research Lab: 100,000 gsf
--35% for Engineering

Revenues

- 40 New Sc.M. students
- \$100M Capital Campaign (Engineering alums, corporations, foundations)
 - \$75M Endowment; \$14M Capital; \$11M Start-up
- Engineering Annual Fund (Engineering alums, corporations, foundations)
- \$8M Increase in Sponsored Research
 - \$6M by New Faculty; \$2M by Current Faculty

Professor Clifton went through these bullet points, noting that some of the funds would be raised through new Masters students.

Professor Neumann then asked the faculty present to suggest topics to be covered in the Faculty Forum discussion, and he listed them on the blackboard in clusters for organizing discussion. Topics suggested were as follows:

1. Collateral benefits, impact on undergraduate programs (James Padbury, Pediatrics)
2. Relationships to other programs, other schools? (Terrie Fox Wetle, Community Health and Assoc. Dean of Medicine for Public Health and Public Policy)
3. Organizational structure, including governance (David Cutts, Physics)
4. Physical plant, where the building is to be located (Jack Hermance, Geology)
5. Fund-raising (Chung-I Tan, Physics, reporting emails received by FEC)
6. Diversity (Dietrich Neumann, History of Art and Architecture)

The faculty forum discussion began with the topic of collateral benefits. James Padbury (Pediatrics) spoke in favor of the proposal to establish a School of Engineering, saying that benefits would accrue to the entire university from collaborations made possible by such a School. He mentioned in particular extraordinary opportunities presented by the fields of Nano technology in concert with Biotechnology. Fox Wetle (Community Health) anticipated benefits of working with the School in areas of Community Health. Rashid Zia (Engineering) said that having central facilities in Barus-Holley would benefit 200 users.

Professor Neumann shifted the discussion to the topic of governance, both internal to the School of Engineering and relational to the rest of the university (topics 2 and 3). David Cutts (Physics) expressed concern that the proposal has the leadership (Dean) of the School of Engineering reporting to the highest level (Provost). He cited the Harvard Engineering website as representing a more inclusive organizational model which includes faculty from other departments in the School and which has the head of the School reporting to the Dean of Arts and Sciences. He asked for a rationale for the proposal's organizational structure. Professor Rodney Clifton (Interim Dean of Engineering) responded that the current Division of Engineering has no separate departments and operates as a unified, integrated program, and that concerning other departments, if the School were to grow, it might be possible to divide into departments. Concerning Harvard, Professor Clifton said that Arts and Sciences are separate from Applied Sciences there, and

the Brown proposal is roughly equivalent to the Harvard model, because at Harvard the Dean of Applied Sciences reports to the Provost. David Cutts (Physics) said that the organizational chart shows another layer at Harvard. Professor Clifton said he was aware of the competition that went on at Harvard over Arts and Sciences in relation to Applied Sciences. Clifton said the intention here is to start as a School of Engineering and be open to larger developments. He said that people here in, for example, Computing, have opted not to join the proposed School of Engineering at the present time.

Professor Chung-I Tan (Physics) asked whether Professor Clifton envisions analogous competition at Brown. Professor Clifton said no, that Harvard had to make a dividing line over who owns what, but that Brown has an "integral" model with no divisions. Professor Tan read out an email received by the Faculty Executive Committee which focused on the proposal's claim that Engineering is too small and needs 12 new faculty positions, and the email questioned whether that statement would not apply to any science department at Brown, and if not, why not? Professor Clyde Briant (Vice President of Research, former Dean of the Division of Engineering) responded that that question had not been brought before them. Professor Tan pressed for follow-up. Rajiv Vohra (Dean of the Faculty) agreed that how we are organized was an important point; do we have a School of Public Health, a School of Medicine, a School of Engineering, and "everything else" is Brown? He extended the concerns beyond science departments to social science departments at Brown, and he suggested that the APC pursue thinking through these organizational issues. Professor Tan gave an opportunity to members of the APC who were present at the Faculty Forum to speak. Don Forsyth (Geology) said that the APC did not consider the entire university's organization, but just this proposed School of Engineering's organization.

Thomas Lewis (Religious Studies) recapped three aspects of organizational issues: (1) name (nomenclature); (2) number of faculty (quantity increase); (3) organization (who reports to whom). He thought the discussion had covered the first two but needed to pursue further the third aspect, of organization. Why the need? Because, for example, TPAC would still be involved in the School of Engineering's hiring and tenuring, and wouldn't the Dean of the Faculty fit into that, even if the proposed Dean of the School of Engineering reported to the Provost? Professor Neumann agreed on the importance of the topic and steered the discussion to stay with it. Professor Clifton (Interim Dean of Engineering) responded. Clifton said that the key element of the proposal is hiring a new Dean of Engineering; that, yes, faculty positions and space were important elements, but it was very important for the anticipated new Dean to feel the position worked at a very high level, in order to make the Deanship a more attractive position. This Dean must be able to work on fund-raising at a high level. Clifton also said that the Dean of the Faculty would have a connection to the School of Engineering, because of the TPAC process for example, and maybe the organizational flow chart needs to have more dashes added to it.

The question was posed, why building interdisciplinary institutes would not be as good as building a School? Professor Briant answered that growth in engineering is integral to support the growth of those institutes. Professor Clifton added that the designation "School" is just the language being used out there. He cited Brown as almost

the only university among the top 25 with no School of Engineering (23 of the 25 schools who have engineering have a school of engineering; the other exception is California Technological Institute). He argued for the importance of a School for visibility to prospective graduate students. Professor Vohra (DOF) recognized that the name "School" does carry weight, noting that at Harvard the proposal was a name-change, and he asked how much of the discussion of the proposed School of Engineering at Brown was about the name, and how much about other things?

Professor Neumann pursued discussion on the proposal's scope and consequences for the larger university, offering the possibility of concern whether donor money for a School of Engineering might divert donations away from other parts of the university. How would the focus on raising \$100M affect other funding? Other questions were asked about the impact on undergraduate education at Brown, and whether the proposers anticipate a larger number of undergraduates, and how that would fit with the current size of Brown's undergraduate curriculum. Professor David Targan (Assoc. Dean of the College for Science) raised the issue of the current status of women and under-represented groups in Engineering, and asked how the proposers expect that to change? Harvey Silverman (Engineering) reported that in an Engineering class of sophomores that he is teaching, 40% are women. Professor Briant responded more generally with two observations. First, he felt that we do not want to tamper with the undergraduate experience at Brown, because it is one of the best things that Brown does, to admit students and let them decide on their educational directions; the undergraduate ability to move in and out of Engineering would be kept. Second, on diversity, the goal for the anticipated new Dean of Engineering would be to enhance diversity. At present, Brown's engineering students rank 40% above national norms in diversity, he said, but up the ranks, Brown approaches the national norm (implicitly, a problem to be addressed).

Professor Tan spoke to the idea that the growth of the School of Engineering would benefit all the sciences, and he asked whether there should be some kind of coordination to make sure all relevant units are involved in opportunity. Ken Breuer (Engineering) expressed the hope, concerning undergraduates, that with additional Engineering faculty there would be more opportunity to teach broadly to other students on campus, whereas at present the Engineering faculty is too small to do so. Professor Neumann observed that archeology students are eager for more collaboration with Engineering (like the ARCH 1860 course "Engineering Material Culture").

Professor Neumann shifted the discussion to the topic of fund-raising. He requested reassurance that the plan for Brown to raise \$100,000,000 for the School of Engineering would not inhibit fund-raising for other departments. In a year where Brown is looking for ways to save \$30,000,000, is this plan to raise \$100,000,000 for a School of Engineering dangerous? Are fears along those lines justified? Professor Clifton said that they have been careful in the planning not to take away from others. He cited a study that recommended trying to bring in money that Brown is not at present getting, with the prediction that overall giving would go up, though there might be reductions in other places. When asked to what extent fund-raising would drive hiring, Professor Clifton said the university controls hiring, and that they would hire as money comes in. When pressed on the

question of whether, for example, a Nano-technology hire would be made if there were Nano-technology donors, Professor Clifton said no, fund-raising would be general purpose. Targeted fund-raising would be done only for the space for labs. He added that fund-raising always has the possibility for a donor to limit a donation's use, but such limited donations were not the plan. Krysta Ryzewski (Postdoctoral Research Associate in Archeology) recommended avoiding a dog-in-the-manger attitude and promoting a holistic view. David Cutts (Physics) observed that other schools of engineering often had co-appointments with other departments, and he advocated for such co-appointments at Brown which would spread opportunity to all science departments. Professor Clifton said he encouraged such joint appointments. To suggestions that opportunity for joint faculty recruitment, something beyond just courtesy appointments, would be desirable, Professor Clifton said that he was talking about not just courtesy appointments but also joint appointments.

Professor Neumann then focused the discussion on the topic of the physical plant. Professor Clifton spoke to the question of where the new lab space would be located, by saying he was not being allowed to ask that question. The process is to work out the needs first, and then figure out the best location to meet those needs. He said the Engineering planners would like to have it close, in near proximity to Applied Math, Chemistry, and other relevant science departments, but that it might also make sense in the Jewelry District. He reiterated that there has been no actual discussion. Professor Neumann asked about the anticipated time frame for raising the \$100,000,000, and Professor Clifton said three years.

Several faculty spoke about the effect that location would have on the undergraduate curriculum, pointing out the importance of casual interaction for sparking undergraduate intellectual culture and the problems that a remote location would cause. Some expressed desire to be on Manning Walk or to displace Prince Lab. Several requests for more information on the undergraduate Engineering Concentration yielded predictions that undergraduates will still inhabit the same seven programs that exist now, so that little change in their areas of concentration would occur but increased electives would be available with an increased base of faculty. The undergraduates would get more a trickle-down effect, and the greatest effect of the enlarged faculty and research space would be on graduate students. Professor Clifton said that there is no target number of Engineering undergraduate Concentrators, but with the School of Engineering they would be able to handle thirty to fifty more.

Professor Neumann observed that all the suggested topics had been discussed, and after giving an opportunity for additional questions, he adjourned the Faculty Forum.

Respectfully submitted,

Beth Bryan
Secretary of the Faculty Forum