

Faculty Response to the NCSU Campus UNC Tomorrow Response

In order to solicit faculty response to the campus UNC Tomorrow response, two public hearings were held after the campus report was posted and email response was solicited from the general voting faculty. Discussion was also held with the Executive Committee of the Faculty Senate and the opinions of the Faculty Team were solicited.

NC State Meets UNC Tomorrow

What is UNC Tomorrow? Is it yet another strategic planning exercise? Is it a request for proposals (RFP) of many new initiatives? Or will it add strength to the core of what the University needs to be? Will there be funding to support new initiatives? Is it “marching orders?” Or an opportunity for conversation with the State? Such questions are, by far, the most common response of faculty to inquiry regarding the UNC Tomorrow initiative.

As faculty, we applaud the effort of the UNC Tomorrow initiative to strengthen communication between the people of the State of North Carolina and its university system. There is immense value in increasing conversation between the university system and the state, conversation between universities within the system, as well as conversation between units within each campus. Being a public institution, the university system clearly must engage with the needs of the state, just as the state must understand and respond to the resources required to have a strong and healthy university.

The system UNC Tomorrow effort carefully crafted a process to listen to external constituents across the state from small towns to the largest cities, with a faculty-based scholar’s council taking the lead in crafting the UNC Tomorrow report. Here at NC State, however, there was no such scholar’s council. The strategy team was devoid of faculty; the “faculty team” was asked to meet only twice, and then only to react to materials prepared by the administrative strategy team; and the few open forums were largely to react to prepared materials, leaving many faculty wondering how and why specific initiatives had been selected or excluded from the campus response. In fairness, the time provided for response was entirely insufficient for the quality of campus conversation needed for actual listening and effective planning and prioritization.

As faculty, we believe for this UNC Tomorrow initiative to be truly successful, it is necessary to step back from its perception as a large RFP or a set of “marching orders” and open a true conversation with the state. It is important that each campus effectively articulate its mission and the priorities needed to carry out that mission. Then evaluate current programs and proposed initiatives in the context of those priorities.

Differentiated Mission of NCSU: A Doctoral/Research Extensive University

The introduction of the NCSU campus response clearly positions us as a Doctoral/research extensive university. This is extremely important. Programmatically a Research Extensive University carries out its mission through integration of research and teaching in graduate and undergraduate education, post-doctoral training, peer mentoring and collaboration among faculty. The research extensive educational environment allows us to offer a unique and rich kind of higher education. A research-based education must be hands-on and experience-oriented. In the best implementation, faculty/student interactions emanate from a master/apprentice model through which knowledge is learned and discovered. To carry out this mission effectively, it is necessary to have our faculty actively engaged both in research/knowledge discovery and in the classroom so that learning does not consist only of transmitting what is, but also inspires to what can be. Whether in general

education courses or within a student's immediate course of study, students are best served by scholars/practitioners of the field. Such an education prepares students to be effective communicators and creative thinkers and it develops teamwork skills. These students will not be simply a trained workforce; they will be prepared for life and ready to take on global challenges.

Challenges to Meeting the Research Extensive Mission

Education in a Research Extensive University is an extremely high valued education. While all students in the state should have the opportunity for a research extensive education, it must be recognized that this kind of education is not the best fit for all students pursuing higher education. Research extensive education is also resource intensive. Thus, it is appropriate for only 2/17 of the UNC system institutions to specialize as research extensive universities. Both at the undergraduate and graduate levels research extensive education requires a higher faculty-to-student ratio and a greater investment in infrastructure including instrumentation, laboratories, and research funds. Given that it is tenure track faculty who are primarily expected to be actively engaged in both research and the classroom, it is necessary that we stem the current loss of tenured faculty (average net loss of 13.25 per year for the last five years).¹

The current enrollment growth based funding model does not adequately address resources needed to sustain or grow a research extensive education program. There are critical needs to provide state of the art instrumentation and laboratories irrespective of whether enrollment grows. Financial aid for undergraduates and stipends for graduate students are required both to ensure access and to attract the brightest and best students. States that have most successfully sustained and grown the quality of their research universities have significantly invested to directly fund research and to provide seed and matching monies to attract federal and private funding. Fully funding and significantly expanding the "NC Research Competitiveness & Commercialization Gap Funding" proposed as a BOG Budget Priority, is essential for a successful tomorrow for North Carolina's research universities.

A Comprehensive Research University

A second major theme the faculty strongly endorsed and that transcends most of the UNC Tomorrow findings and recommendations, is the need for NC State to grow as a comprehensive research university. During its strong history in the land grant tradition, NC State initially developed major strength in the areas of Agriculture and Engineering. These evolved, adding broadened expertise in Science, Engineering, Technology and Math (STEM) disciplines. To continue to thrive as a distinguished university that is relevant in a global context, it is necessary to ensure growth in a more comprehensive sense. It is not possible to be globally relevant in Engineering or Agriculture if those fields are not matched with equal strength across the basic Sciences, Arts and Humanities.

In a 21st century globally relevant education, where do the STEM disciplines stop and non-STEM disciplines start? Globally relevant education must integrate both objective and subjective methods and worldviews with enriching collaborations and partnerships across disciplines. The visual, performing and cultural arts provide critical stimulus for creativity and innovation. Language and communication are the medium by which scholarship, and discovery are explored and translated into applications and solutions. Thus, these must be integrated into both graduate and undergraduate curricula, and not be relegated solely to the realm of general education. The more traditional land grant disciplines of Engineering and Agriculture provide an important grounding in practical application. Fundamental discoveries transform ways of thinking, producing ideas that impact many objectives, products and applications without being tied to single-strategy objectives, requirements for products or direct applications. A deep understanding of History, Sociology, Psychology,

Ecology, Business... ensures that advances are culturally informed and, thus, more likely to provide true solutions. Strength in a comprehensive range of disciplines is essential so that experts from every discipline can be summoned to work together to address complex interdisciplinary global challenges. A STEM university can prepare a well-trained workforce. A comprehensive research university will also prepare the visionary leaders of that workforce and society.

Challenges to Becoming a Comprehensive Research University

- Because of its history that has emphasized strength in Science, Technology, Engineering and Math, a major challenge for NC State Tomorrow is to **build up its strength in disciplines other than STEM**. The segregation into “research-extensive” and “service” disciplines and faculties weakens our institution. To address this, investment in facilities and faculties is needed. In the last two to three decades a concerted effort began to move the fundamental science disciplines (e.g., the college of Physical and Mathematical Sciences and several traditionally service departments in Ag and Life Sciences) from being primarily “service” providers to being their own strong contributors to the university’s research mission. While this transition is far from complete, a similar transition is needed in non-STEM disciplines. STEM and non-STEM disciplines alike need to be taught by faculty who are actively engaged in scholarship.
- For NC State to advance as a comprehensive research university there is a need to **develop a culture of effectively working across departments and colleges**. NC State has a culture of strong and independent colleges and departments. Among its challenges, this structure has created a tendency for units to act in their own “silos” providing significant hurdles to addressing matters that require interdisciplinary solutions. Concern has been expressed by many faculty that in responding to the UNC Tomorrow report, there is more evidence of silo-type “defending turf” than in working as a comprehensive university.

For example, there is broad agreement in the value of investing to regain the stature of our College of Engineering (section 4.4), but this cannot be done in isolation. No strong Engineering college can exist without strength in the Physical and Natural Sciences. Nor can a modern Engineering program exist without strength in the Humanities and Business. It is remarkable to recommend the hiring of 100 Engineering faculty when in total NC State has only hired a net 152 full-time faculty over the last decade (including a net gain of 172 full-time non-tenure track and net loss of 20 full-time tenure track faculty).¹ An Engineering silo will be limited. An Engineering program in the context of a strong comprehensive research university will flourish to greatness.

The specific health initiatives (4.5) largely describe health in a medical sense with the major initiatives stemming from the College of Veterinary Medicine. However, at NC State, our extensive impact on health primarily involves other than direct medical responses including clean and safe air, water and food supplies, fundamental understandings of biological processes and diseases, global climate change, etc. Our current and historic strength in Agriculture and Life Sciences will continue to provide major advances to health. Remarkably too, as much of the rest of the university was left out of the Engineering initiatives, the invaluable role Engineering plays in health is notably absent in the NCSU-UNC Tomorrow response.

Specific initiatives in the environment (4.6) and education (4.3) sections of the campus UNC Tomorrow report can also readily be traced to specific colleges, departments, and even individual researcher silos. Coordination of existing units to address matters pertaining to energy and the environment is important, yet the proposed “consortia for energy and the environment,” the “academy of the environment” and the “healthy built environment” exhibit fractionated initiatives

that themselves could be coordinated. Coordinating disciplinary expertise with educational expertise has untapped possibilities for curriculum design and teacher training, yet instead of a coordinated perspective, five sets of turf are marked in the campus initiatives.

The rushed approach to the UNC Tomorrow response has not created the environment for the needed comprehensive conversation across campus. Breaking down the barriers between such silos, and learning to think and act as a comprehensive research university is critical to NC State's future.

- ***A comprehensive research university needs to be much more than a demand-driven institution.*** As faculty, we applaud the UNC Tomorrow initiative to go intentionally into the greater North Carolina community to listen to community needs and aspirations for its university system. We are pleased with the strong alignment between initiatives coming from our own strategic planning and the recommendations coming from the community; in part a reflection of our ongoing commitment to be relevant to the community we serve. At the same time, as faculty we raise a caution with regard to choosing any five to seven priorities to be those to direct the university's future. Clearly, there is a timelessness, as well as an immediacy to the study of health, energy and the environment. However, to address the immediate needs in the field of energy, for example, we depend on having hired scholars with diverse expertise more than a decade ago. Universities are frequently criticized for pursuing "Ivory Tower" research. However, as one faculty member noted, on September 10, 2001 programs in Arabic and Islamic Studies were readily considered such Ivory Tower pursuits. The very next day they were clearly essential. It is often impossible to tell the difference between an "academic pursuit" and something that may be or become necessary and applied. Investing in a strong a comprehensive research university ensures preparedness for the unexpected and is a source of vision for what might be possible.

- Related to the above, for a comprehensive research university to be relevant in the global context it is necessary to establish ***a healthy balance between fundamental, translational and applied research.*** At a university, there is value in pursuing initiatives across the full continuum of "knowledge for knowledge's sake," to turning knowledge directly into products and applications. However, societies have entrusted universities with the major responsibility to foster broad fundamental scholarship and discovery, and this should reflect the major thrust of the university. By contrast, private and public industry specialize in the latter, with any given industry taking knowledge from many areas of study to focus on developing and marketing a limited number of products.

Universities should prioritize ideas over products and the understanding of creative approaches to problems over the implementation of solutions. Turning those ideas into products and the implementation of solutions, is primarily what our graduates will do as alumni.

To paraphrase an ancient parable: Ask universities to give communities solutions to problems and the community will live for a day. Ask universities to discover knowledge and teach students to be creative problem solvers, and communities world-wide will thrive for generations. Thus, for the success of both the university and the State of North Carolina, there is the need for major investment in comprehensive and fundamental pursuits at universities, as well as strong and effective technology transfer programs to ensure the ideas and discoveries are translated into viable application through effective partnerships with other sectors.

Our Process: A Call for Greater Engagement

The major findings and recommendations of the UNC Tomorrow report are in one sense quite broad, such that it is possible to advocate for many initiatives under their umbrella to show our responsiveness to its goals. However, a business or strategic plan that promises everything without prioritization is unrealistic. At the broad system level, there is no way to effectively prioritize the assortment of initiatives such as are in the campus responses. Further, while several million dollars to enact some of the proposed initiatives is slated to come from internal reprioritization there is no discussion of what we will stop doing. Or how decisions will be made to initiate or terminate programs.

It is for these reasons we believe that “our process” for responding to the UNC Tomorrow report must step back from being an RFP for favorite programs. It must place a high priority on “de-siloing” campus culture, moving toward a culture of scholarly conversation and away from turf protection. To accomplish this we need to free ourselves from the idea that another administrative unit needs to be created to enact any new initiative. And there needs to be increased opportunity and expectation for faculty engagement in planning and prioritization, as well as sufficient resources for implementation.

NC State provides a high valued research extensive education and a rich environment for scholarship and discovery. As such, two interrelated priorities need to be the lens through which current and new initiatives are judged. 1) Are students being educated in a research/knowledge discovery context with strong “master/apprentice” interactions between students and faculty? 2) Is research and discovery equipping our students (undergraduate, graduate, continuing, extension...) to be critically thinking problem solvers? Initiatives that meet these criteria are of the highest priority for North Carolina State University; a Research Extensive university within the larger University of North Carolina system.

¹ <http://www2.acs.ncsu.edu/UPA/facultystaff/index.htm>