

# DRAFT

## Memorandum

To: Innovation and Impact Committee

From: Phil Clay

Date: May 8, 2014 (Revised June 10<sup>th</sup> to incorporate items from committee discussion)

RE: Issues for Discussion at the May Meeting of the Committee

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The purpose of this memorandum is to summarize the work of the Innovation and Impact Committee of the UNC Board of Trustees, and to identify tasks and priorities in our continuing work.

The charge to the committee is to advance the goal of using research-generated discoveries by the faculty and ideas generated by members of our academic community to create economic and social impact for the campus and the state. These impacts may result from the commercialization of research output and/or the creation of enterprises and initiatives that advance ideas for solving problems. As a public university, chartered by and for the people of North Carolina, creating and supporting an ecosystem and environment on campus that supports both broad and deep engagement with the state and the world is the outcome we seek and one wholly consistent with our mission as an institution.

The University benefited greatly from the pioneering work on these issues initiated by former Chancellor Holden Thorp. The Innovation Roadmap, published in 2010, outlined a series of opportunities and goals for the University and stimulated initiatives across the campus. That initiative and the activities that followed in the past four years provide a greatly elevated starting point for the work of Innovation and Impact Committee.

This memorandum aims to foster discussion about what the university has learned and put in place in recent years and what remains to be done. Together with notes and materials from the last four meetings of the committee, this memo aims to ground the discussion at the committee meeting on May 20th\_. Also, it addresses several questions regarding our effort of transforming our research into innovations and impacts:

1. What is in place and capable of being a resource for our agenda?
  - a. There is broad support from all stakeholders for a larger role for the state and region in entrepreneurship and for universities to take the lead.

- b. The university has more than \$800 million in annual research and as such already has standing as a first ranked research institution.
  - c. Since 2009, the university has put a number of new programs in place, including the Carolina Express License, Carolina Kickstart, and the new services offered by the Frank Hawkins Kenan Institute for Private Enterprise. Strategic investments in the Office of Technology Development have increased its efficiency, effectiveness, and importantly, its sustainability.
  - d. A new \$2 million fund at UNC-CH to support university venture initiatives has been approved.
  - e. There is an evolving set of places and venues on campus and in Chapel Hill where entrepreneurs get together to support each other, to benefit from mentoring and trying out new ideas. Launch, incubation, and accelerator activities are numerous and include mentors, coaches, and active ventures that grew out of these venues. The business school and the Kenan Institute are actors in these activities.
  - f. There are faculty, centers, and schools that increasingly model the change the committee aims to promote.
  - g. There is the expectation on campus and across the state that UNC will play a leading role in the state.
2. What is it that we have learned to date that will help us scope, plan, and manage future efforts?
- a. Despite some initiatives triggered by the Roadmap from 2010 and examples of faculty and centers that model the change we want to see, there is considerable lack of information among faculty about resources available, about how to take the first step in moving from research to applications, and about the necessary collaboration and engagement in order to start an enterprise.
  - b. There is now a convergence of science and technology as a major trend within research universities. UNC is one of the few universities with a mega research volume but without a school of engineering in this convergence era. We have put in place a Department of Applied Sciences and invested in the Department of Biomedical Engineering that is joint with NC State that over time can partially address this shortcoming. The other part of the solution can come from collaborations.
  - c. Our funded research is heavily biomedical, and this is an area for strategic investment in commercialization of technology. We are also very strong in the public health, behavioral, and social sciences, where research is less likely to be commercialized.
  - d. Surveys show that the faculty does think about how their results can be used. The question is: what is the best activator of faculty initiative for research translation? The surveys also show the knowledge is

uneven and not “top of mind.” This includes openness to taking risks and engaging venture and corporate players.

3. What remains to be explored by the committee?
  - a. While we have a large volume of research underway on campus, our commercialization metrics fall short of those of our peer universities. This is partly due to the composition of our portfolio, which is heavily weighted toward basic research, in addition to having a substantial showing in disciplines such as behavioral and social sciences where the commercialization potential is low. There is, however, much room for improvement. Critically, results from much of our research do not translate to applications without some additional work on the part of faculty. This takes time, has some associated costs, and involves risks. What is the translation infrastructure required for this?
  - b. We need to update our exploration of best practices in other states both with respect to the research ventures and the interface between the university and the state, and between the university and industry. Specifically a number of states including California, Massachusetts, Arizona, Michigan, and Connecticut are putting in place or have put in place strategies that tie the state’s activities to the research of their universities, including state investments aimed at promoting jobs.
  - c. There are also growing collaborations on research applications with the philanthropic and nonprofit communities including critical areas of health and medicine. As federal funds are reduced, these sources become more important as does corporate research.
  - d. What does an innovation agenda in research mean for educational programs, student activities, alumni relations, town-gown relations, etc.? Over the past four or five years, UNC has developed outstanding programs for students, including the entrepreneurship minor and courses provided through the Business School. The town and region are developing new incubation and acceleration spaces. How does research connect? How does the agenda fit into the evolving Department of Applied Sciences, BME, Data Science, etc?
  - e. Design is an element of discovery, product development and commercialization. Design is typically taught in schools of architecture, engineering, business. What is the appropriate approach to addressing design for Chapel Hill?
  - f. We have only just begun to explore how to tie UNC, North Carolina State, Duke North Carolina Central, and the Research Triangle Park together with local industries to create a broad infrastructure. How do we identify and then remove, lower, or alter barriers to collaborations and insert positive incentives and support? Are there cultural or other barriers to address? Who leads this effort?

- g. Campus space for work to support innovation, is important, including research and project space, and more generally “maker space.” A committee is preparing an inventory of campus space.
- h. We need to revisit Carolina North in light of developments since the original plan and the recession. Does the enterprise model still hold up for our innovation agenda? Are there additional roles that the acreage allows?
- i. UNC has a global brand. Among our research peers, academic collaborations are increasingly international. Access to interesting problems, partners and resource opportunities beckon. What are the low hanging fruit for leveraging the UNC brand? (Water, for example, is one of our signature research areas as well as a major global topic in health, technology, law, etc.)
- j. How does an innovation agenda relate to a university campaign? What is the role of venture philanthropy? What are the synergies? Tensions? Should there be a “foundation” to support innovation related work?
- k. How can we better tell the story of impact? The growth of awareness of our work has grown recently. We need a deeper communication to those who already know the topic and UNC, and a higher-level communication to those who do not know the topic but are high-level stakeholders of the University.

4. What are the challenges to be overcome?

- a. What is the structure of the senior administration team for leading the innovation effort? What is the role of other senior officers, deans, etc.? How is the faculty mobilized for various roles? What are the eventual governance issues?
- b. How do we combine the three domains in which research and education take place – real, virtual, and connected? What are the venture opportunities in education?
- c. A thrust that highlights an innovation and entrepreneurship agenda requires a cultural shift at UNC. This is already underway. What are the opportunities, frictions, and challenges evident from the last 3-5 years’ experience?
- d. How do we engage the venture community in support of an innovation agenda? There is the special challenge of raising early stage capital and attracting firms who will seek and encourage university- enabled projects. What do we want to know from them? What are the risks and cautions?
- e. How do we engage corporate supported research? What are the lessons from the experience in recent years? How do we attract them to be partners the local ecosystem in the way early RTP did?

- f. How can we, as an institution, most effectively and seamlessly engage with corporate partners whether for technology transfer, research or workforce needs?
  - g. How do we communicate our intentions and frame value to the University community and the public?
  - h. What are the unique problems of a public university in advancing an agenda which is most elaborated in mainly private institutions or in states with an aggressive innovation agenda? How have public peers overcome the associated limitations of the public section working with private firms?
  - i. What resources are needed to kick-start and sustain an innovation agenda for at least five years? What is the source(s)?
5. What is to be done? Where do we go from here? Listed below are some options for the work of the committee and the administration. I imagine that some combination would be appropriate.
- a. A working paper that addresses selected questions above. To be prepared over the summer.
  - b. A Fall 2014 Workshop Series where the outsiders are invited in present and discuss. Meetings or time allocation to overlap BOT meetings. Invite outsiders, potential partners, etc. Examine models such as APLU's Innovation and economic Prosperity Universities Program, for organized and structured engagement with North Carolina corporate, economic development and community interests.
  - c. A more focused agenda for fall committee meetings to hear administration proposals.
  - d. A 5-year plan of action prepared by January 2015.