Envisaging the Next Generation Land-Grant University

Task Force Report
6-1-2020

Co-Chairs

Audrey Jaeger, Ph.D.
Executive Director, Belk Center for Community College Leadership and Research
Distinguished Graduate Professor

Richard Linton, Ph.D.
Dean, College of Agriculture and Life Sciences

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Process and Data Collection

Overall Approach: Our task force sought to identify themes that will inevitably impact the future land-grant system. For each task force theme we included recommended strategies for NC State University leadership to consider in order to not only maintain but excel as a premier land-grant university during times of change. A database of articles related to a changing and futuristic land-grant system was provided to the task force for reference at the beginning of this process.

Gathering Input From Stakeholders: Our task force reached out to multiple stakeholders to identify their thoughts and ideas about a changing land-grant system. A survey instrument was created to collect feedback; we held follow-up discussions with the Faculty Senate, Staff Senate, Off-campus NC State Extension, and our own Task Force members. Ideation sessions were also completed with the Student Senate, Board of Visitors, and members of the Research Operations Council. The three question survey included:
1. In your own words what is a land-grant university?
2. What are 3 current trends, or drivers of change, which a futuristic land-grant university will need to identify and lead? How do you propose we prepare for/address the inevitable change identified above?
3. What else would you like this committee to know?

Defining Task Force Themes: The data and information from the survey instruments and discussions with stakeholder groups was tabulated and rank-ordered based on frequency of response. The categories with the greatest number of responses were then organized by the task force into the following themes:
1. Changing Landscape and Opportunities for Outreach and Engagement
2. Achieving Success in Student Access, Resources, Affordability, and Learning Experiences
3. Opportunities to Grow and Succeed with Challenges to State and Federal Funding
4. Adapting to Changing Natural Environments Locally and Globally
5. Improving the Public Perception of NC State as a Land-grant University
6. Leverage Opportunities to Research Areas that Lead to Increasing Resiliency

A seventh theme was identified, "Maximizing the Uses and Advances in Technology." However, our team felt we lacked capacity and knowledge in this area. We reached out to the Digital Transformation Task Force and found that the data we collected could strengthen their work. We shared our initial findings with their team. Their committee charge will certainly cover this theme.

Subcommittees from the task force were created to discuss the six themes. Each subcommittee was charged with addressing the following five questions:
1. What is the issue?
2. What are the expected trends?
3. Where is NC State now?
4. Where does NC State need to be?
5. What ideas, resources, and structures need to be put in place to get there?

This report contains an assembly of these six themes and provides suggested direction for NC State University. We are hopeful that the university will review and take action on many of our recommendations in an effort to elevate NC State University as a premier and futuristic land-grant university.

Preface: The Land-grant University

NC State's roots, trunk, branches and leaves all stem from our land-grant heritage. From our birth in 1887, we were deeply committed to a difficult proposition: delivering education that is both "liberal and practical."

More recently we've summarized that mission with the words "think" and "do."

Our true commitment to deep thought and practical application of knowledge is NC State's secret sauce, our strategic advantage. It is what must distinguish us at a time of unprecedented challenges to higher education and accelerating change in the world. Living it out requires a new compact between our faculty, staff, students and the communities and partners we serve.

We know that "liberal and practical," "think and do" have always been abbreviations for what we do. Operating in the space between those words, we understand that if we listen to, learn from and respond to our partners, we discover problems earlier. If we bring together teams from a variety of diverse disciplines, we find new ways of framing solutions. If we put our answers to the test by applying them, we find out what works sooner.

Thinking alone will not feed, clothe, heal, fuel, inspire or sustain a growing population. We must deliver broader, tangible impacts. NC State needs to organize to be, and become known as, a solutions center for North Carolina and the world. Partners will seek us out because they know we can listen and find answers. Faculty and staff will come here to live and work in an environment of relentless curiosity. Students from across the state and around the world will come to learn the skills and abilities they need to be world-class, roll-up-your-sleeves problem-solvers, and will come back here to adapt and learn as the challenges mount.

The ideas that follow in this section outline some of the steps we need to take to live into that vision.

Theme 1: Changing Landscape and Opportunities for Outreach and Engagement

1. What are the issues? Calls for our help are only growing. Communities and companies are asking us to partner with them to address the myriad economic, racial, and geographic challenges they face and to identify near- and long-term solutions that work. Funders at all levels are looking for measurable impacts on the public good as a return on their investments.

2. What are the expected trends? New models for university-community collaborations are being created by universities and communities across the country, leading to innovative university structures and transformative research supporting high-impact engagement practices.

3. Where is NC State now? NC State has a rich tradition of helping communities find, use, guide, and contribute to knowledge. Cooperative Extension has been a model for land-grant engagement, with assets physically present in every county in the state. We also have underutilized engagement assets on our Raleigh campus--our faculty, staff and students--many of whom are seeking opportunities to work in community-informed settings. But the energies and expertise on campus and across the state are often disconnected and episodic.

4. Where does NC State need to be? We must integrate our education, research, and public engagement missions so that they catalyze one another, becoming a cohesive, focused source of energy, innovation, inspiration, and direction--a culture of Think and Do. We must intensify our commitment and capability to respond to the full range of community needs through direct and virtual engagement. We must better align resources and infrastructure for both Cooperative Extension and new public engagement initiatives and build connections between them.

5. What ideas, resources, and structure need to be put in place to get there? To address the evolving needs of communities and companies, NC State should develop a strategic plan that includes as a primary goal the integration of public engagement with research and education. This goal should be realized by an administrative structure that strategically connects Cooperative Extension, economic development, state/local governmental relations, and academic and research engagement initiatives across the university to ensure intentionality, commitment, and coordination in public engagement. This structure will:
- For North Carolina: match communities and governments with university **partners**, and build a network of trusted local brokers representing the diverse populations of our state;
- For Extension: **invest to expand capacity** to serve as a bridge between communities and the resources and expertise of the entire university;
- For faculty: create new opportunities and incentives for **community-engaged scholarship and teaching**, offer visible support for the value of engagement activities in hiring, promotion, and tenure decisions, and disseminate best practices for documenting and evaluating faculty's public engagement activities;
- For staff: create new opportunities, incentives, and recognition for **engagement activities**, and enhance professional development;
- For undergraduates: create new opportunities and incentives for **developing the skills of civic leadership**, and for high-impact experiences including service-learning, community-based learning, and internships that **engage with public stakeholders**;
- For graduate students: create new opportunities and incentives for training, practice and certification in **community-engaged practice, teaching and scholarship**;
- For the university: foster communities of practice among engagement initiatives across campus; invest in research into innovative engagement practices, especially leveraging new technologies; and **promote NC State's achievements in community partnership.**

Theme 2: Adapting to Changing Natural Environments Locally and Globally

1. What are the issues? Our social and environmental needs are changing; both individuals and systems are increasingly interested in identifying adaptable and sustainable practices. Education is evolving to be more hands-on, participatory, and multidisciplinary. Educational institutions are challenged to prepare students for the global job market, respond to accelerating change, and provide lifelong learning opportunities. Demographic shifts, changes in family structures, workforce composition, cultural differences, socio-economic inequities, and the urban-rural divide require updated flexible educational approaches. Rapid technological developments and global connectedness offer both challenges and opportunities for teaching, research, and engagement. Implementing sustainability practices throughout food security, production, and distribution practices for a growing population is a grand challenge locally and globally. Policies and regulations (local, state, and federal) are shifting in response to environmental and human health issues.

2. What are the expected trends? Universities will continue to generate new information and technologies that effectively meet changing human and environmental needs. Sustainability and adaptability will be the driving forces behind interdisciplinary teaching and research.

3. Where is NC State now? NC State is a global leader in research and technology with Extension programs that translate research to applications. While interdisciplinary research is increasing, educational programs addressing sustainability and a changing environment need expansion.

4. Where does NC State need to be? NC State needs a larger global presence to increase our competitive edge, adapt more quickly, and provide new knowledge. Greater focus on incorporating sustainability and resilience into programs to address needs of a changing natural world will prepare students for the future and increase impacts locally and globally.

5. *What ideas, resources, and structure need to be put in place to get there?*
   ● Increase investments in infrastructure (e.g., classrooms, laboratories) that explicitly **support collaboration and interdisciplinary learning** for on-campus and distance education that focus on sustainability, resilience, adaptation, and mitigation to changing environments.
   ● Increase investments that **expand university engagement** with experts who are trusted brokers with communities/individuals that represent the diverse populations of NC to address environmental changes through authentic community partnerships.
   ● **Develop innovation/technology sustainability "hubs"** to address the opportunities and challenges of a changing environment across NC, including rural and urban communities.
   ● **Expand regional engagement** with other land-grant institutions to leverage resources and capabilities to address environmental changes and optimize opportunities.
   ● Revise academic program requirements to **require interdisciplinary teaching and learning experiences** for faculty and students that incorporate sustainability and resilience principles.
   ● Increase internships and other investments in research, training, and hands-on education that engage faculty, staff, and students with government and industry. **Bridge science-to-application gap**, and foster adaptable future workforces that adapt to change.
   ● **Increase global engagement** experiences for faculty, staff, and students that strengthen the university's global leadership in sustainability while bringing new ideas/applications back to NC to address local environmental changes.

Theme 3: Opportunities to Grow and Succeed with Challenges to State and Federal Funding

1. What are the issues? Traditional non-competitive state and federal <u>funding sources have remained stagnant</u> for many years. The <u>demands</u> for extension programming, research, and other services have <u>remained the same or increased</u>. <u>Costs have increased,</u> which means the university must find additional funding sources in order to provide these services, make progress, or make the difficult decisions on what areas to cut. State and federal funding are considered "traditional funding sources."

2. What are the expected trends? Traditional funding sources are not likely to expand and funding within those sources are not likely to increase. This could put a crunch on the research conducted, extension programs, and services offered. In order to continue conducting research and providing traditional extension programs, and to increase research and programming as needed, funding will have to come from corporate and private donors as well as competitive grant funding sources.

3. Where is NC State now? NC State currently receives money from the federal government through the US Department of Agriculture National Institute of Food & Agriculture and the North Carolina legislature. In the [2018-2019 academic year](), NC State received $522 million from the NC legislature and $21 million from the United States federal capacity appropriations through NIFA to CALS and CNR.

4. Where does NC State need to be? Trends suggest state and federal appropriation funding will at best remain flat. NC State needs to be prepared for and positioned to address increased competition for state, federal, and private funds to supplement the difference between current income and projected needs.

5. What ideas, resources, and structure need to be put in place to get there?
- **Develop corporate partnerships** that can secure funds for research, capital improvements, repair and renovation, scholarships, outreach, and other needs.
- **Invest more resources into advancement offices**; cultivate relationships and make community introductions quicker so we can make a "big ask" when we need it or the opportunity arises.
- **Increase foundation and organizational grants**, and create endowments that can sustain needed activities over time.
- **Educate communities and businesses about the impacts and resources** of a land-grant so they become interested and eager in opportunities to collaborate and fund university projects.
- Create a **structure that allows dedicated private funding opportunities** while ensuring the university continues to embrace its public mission in research, academics, and outreach.
- Explore opportunities, where appropriate, for **expanded fee-for-service Extension programs**
- Increase **efficiency with the resources** we receive through state and federal funding.

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Theme 4: Improving the Public Perception of NC State as a Land-grant University

1. What are the issues? Public perception of higher education is weakening and adversely impacting support within spheres of power and influence. Research indicates stakeholders are unable to distinguish the difference between or hold an enhanced perception of, land-grant universities among other institutions of higher education. Americans value higher education primarily for the purpose of securing "a good job." Unfortunately, 87% of Americans (Lumina Foundation and Gallop) don't believe graduates are well-prepared for success in the workplace and 89% of business leaders aren't convinced that graduates possess needed skills for success.

2. What are the expected trends? Gaps between public perception and the true impact of higher education, and more acutely that of land-grant universities, are expansive and will likely increase for the foreseeable future. Addressing these gaps will take significant time, as well as intentional effort and investment.

3. Where is NC State now? NC State has earned the reputation of a leading national university which continues to experience year-over-year application growth, increased alumni and donor support, and growth in sponsored research and technology transfer. It benefits from the strength of the nation's second-largest Extension network, and strong assets in its Board of Trustees and Board of Visitors. But U.S. higher education is in a state of change and NC State must remain vigilant to shifts in stakeholder perception to maintain and build on its success.

4. Where does NC State need to be? With the growing influence over higher education moving away from campus to external groups, such as policymakers, it is imperative for NC State to take a multi-prong approach to both understand and reshape the perspective of stakeholders. Perception can be shaped through the consistent marketing and communication of NC State's impact by fulfilling its land-grant mission through 1. Talent development, 2. Innovation and discovery, and 3. Extension of knowledge and research-based information to improve the lives of NC communities (societal, economic and intellectual prosperity).

5. What ideas, resources, and structure need to be put in place to get there?
- Continue to support **additional research and studies to identify perception gaps** to understand the implications to our university.
- **Enhance strategic marketing and communications expertise** and best practice adoption across the entire university.
- **Strengthen the culture of collaborative innovation.** NC State needs to consider adjustments to policies, regulations, and evaluation processes to incentivize faculty, students, and staff to pursue interdisciplinary collaborations that create prosperity.
- **Establish a consortium of land-grant universities to educate the public.** A consortium needs to be established to collaboratively fund and conduct intentional and measured communication plans designed to educate the public. Communication goals should focus on awareness of the distinctiveness of land-grant universities in general, with structured communications organized specific to contributions regionally.

Theme 5: Achieving Success in Student Access, Resources, Affordability, and Learning Experiences

1. What are the issues? To achieve student success we must remove barriers and actively <u>engage with students throughout their lifetime.</u> Students from many different backgrounds desire to come to NC State; <u>students need support</u> before, during, and after earning their degree. Students, faculty, staff, and administrative populations from historically <u>underrepresented populations need increased access and representation</u> on campus. There is also a need to engage and provide <u>opportunities to rural and low-socioeconomic status populations.</u> There is a continued need to <u>develop postgraduate learning relationships</u> with NC State.

2. What are the expected trends? Expected trends for higher education include: trust issues between employers and universities, increasing cost of higher education, increased diversity in North Carolina and the world, continued education disparities from K-12 education, and the need for more diverse pathways to a 4-year university.

3. Where is NC State now? NC State student and employee populations do not reflect the demographics of NC, and the nation as a whole. NC State is currently a leader in preparing students for employment. NC State messaging conveys dedication to supporting student diversity, yet many believe this area needs improvement.

4. Where does NC State need to be? There is a need to increase recruitment and enrollment opportunities for historically underrepresented populations. NC State needs to increase academic services to support students from diverse backgrounds with diverse needs. Faculty members need to be educated on how to best support students that are differentially prepared and acclimating to the new ways of learning in college while maintaining academic standards. NC State also needs to critically evaluate the shelf-life of employable skills in an ever-changing market, and be prepared to adapt, ensuring students remain employable.

5. What ideas, resources, and structure need to be put in place to get there?
- **Hold annual discussions** (town halls, roundtables, etc.) with employers and recent graduates to understand what is going well and what gaps exist.
- Critically assess and communicate the purpose and **usage of student fees/tuition**, with focus on academic, social, cultural, and career development of students.
- Increase on-campus **student employment** opportunities.
- Reimagine and restructure the **admissions process** to holistically and accurately assess applicant potential for success at NC State in lieu of standardized tests.
- Expand programs that structurally and holistically **support historically underrepresented student populations** for success within the university. Relationships with community colleges should be supported and enhanced.
- Create developmental and competency-based **learning programs** (i.e., beyond Tutorial Center) to help highly capable, yet underprepared students grow and develop academically and socially.
- Establish admission, retention, and support strategies that structurally and operationally **value the active cultivation of a holistically diverse student population**.
- Include an Innovations Course with tuition, offered online three to five years following graduation to **provide knowledge and skills updates.**
- Partner with organizations like Student Government to **receive feedback on what students need.**

Theme 6: Leverage Opportunities to Research Areas That Lead to Increasing Resiliency

1. What are the issues? <u>Scientific discovery and technological impacts are moving at a rapid pace</u>. An <u>increased competition for research funding</u> (industry and government sponsored) is simultaneous with the increased risk of fiscal impact related to the federal deficit. In our communities, and across the globe, there are concerns about legitimate dissemination and access to data and information as well as a <u>misalignment between the needs of research and student training</u> between higher education and external constituents.

2. What are the expected trends? Strategic interdisciplinary teams will continue to be critical to solving grand challenges. To support research efforts universities will be focused on investing (infrastructure and training), developing flexible financial structure models that are adaptable to research organizations and funding, carefully protecting from academic espionage (data included), and better aligning extension services to define the value of the land-grant university for public and private investment.

3. Where is NC State now? NC State is known for its expertise in researching basic scientific disciplines; this allows us (primarily the Office of Research and Innovation) to populate interdisciplinary teams that can respond to research opportunities. NC State is a nationally recognized leader in research commercialization, innovation, inventorship, and interdisciplinary research collaborations. Bureaucratic and political practices as well as financial limitations challenge NC State's research in terms of re-investment, re-training, and attracting new faculty hires. NC State is uniquely positioned to foster research growth within social sciences and education to research the engagement process itself and to research how communities can best guide, contribute to, and use scholarship.

4. Where does NC State need to be? Externally, NC State needs to be identified as a trusted source for providing value-adding research, innovations, products, and companies. Internally, our strategy needs to foster a culture of research-based engagement across campus by focusing on investment in interdisciplinary research leaders and core facilities that coordinate fast-paced/high-risk/high-return ventures as well as those that are open to the broader community through outreach engagement.

5. What ideas, resources, and structure need to be put in place to get there?
  - Utilize the Vice Chancellor for Research and the Office of Research as the single point of contact to serve as a *go-to* for addressing needs (pull), as well as push ideas and technologies out from the university.
  - Create a **flexible organizational and financial structure** that minimizes bureaucracy and maximizes potential for capturing high-impact research opportunities.
  - Be proactive in the definition and practice of socially responsible research through **new cluster hiring initiatives and cross-institutional translational research** programs that are directly connected to the specific challenges of enhancing the human experience.
  - It is critical that new methods for unbiased management and filtering of research is developed to be validated as a **trusted source**.
  - Evaluate how we foster alignment with **industry partnerships** to maximize research collaborations and funding opportunities while maintaining research objectivity.
  - **Invest and recognize research-based engagement** across campus.
  - Investigate the role of research in the Reappointment, Promotion and Tenure process so as to **promote academic freedom to pursue research innovation and commercialization**.
  - Develop ideas for soliciting, managing, and commercializing **industry sponsored research**.
  - **Increase financial support** for the Research Development Office, Proposal Development Unit, and Centers and Institutes.

Conclusion

The world we live in is changing. NC State is dedicated to the land-grant mission but must "Think and Do" differently in order to remain relevant and revered in the future. With changes in our environment – socially, economically and environmentally, we need to identify ways in which we can **evolve and adapt** to meet the needs of our stakeholders. **Strategic partnerships and collaborations with communities and companies** will be key to our success. Investing time and resources into generating new leads and cultivating relationships will enable us to explore new opportunities and support important initiatives. As we seek solutions to complex challenges **diverse interdisciplinary teams** will be critical. NC State must foster an environment where interdisciplinary teams thrive. Lastly, we need to **engage with and educate our internal and external stakeholders** on the innovative impactful work we do. The exceptional research, teaching and Extension done at NC State University is vital to the future of our state, nation, and world.

Resources

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