NC STATE UNIVERSITY

Executive Vice Chancellor and Provost,
Vice Chancellor for Information Technology and CIO,
Vice Chancellor for Finance and Administration,
Vice Chancellor and Dean for Academic and Student Affairs, and
Vice Chancellor for Research and Innovation

Holladay Hall
Raleigh, NC

MEMORANDUM

TO:

Innovation Task Force 1: Instruction and Student Support
Louis Hunt, Senior Vice Provost, Enrollment Management and Services
Donna Petherbridge, Associate Vice Provost, Academic Technology Innovation

Innovation Task Force 2: Research
Genevieve Garland, Assistant Vice Chancellor, Research and Innovation
Alyson Wilson, Associate Vice Chancellor, Research and Innovation

Innovation Task Force 3: How We Work – Flexible Work Arrangements and Optimization of University Space
Lisa Johnson, University Architect, Office of the University Architect
Marie Williams, Associate Vice Chancellor, University Human Resources

Innovation Task Force 4: Digital Transformation
Gwen Hazlehurst, Assistant Vice Chancellor, Enterprise Application Services
Mary Peloquin-Dodd, Associate Vice Chancellor, Finance and University Treasurer

FROM:

Post COVID-19 Innovation Task Force Steering Committee
Warwick A. Arden, Executive Vice Chancellor and Provost
Marc I. Hoit, Vice Chancellor, Information Technology and CIO
Charles A. Maimone, Vice Chancellor, Finance and Administration
Doneka R. Scott, Vice Chancellor and Dean, Academic and Student Affairs
Mladen A. Vouk, Vice Chancellor, Research and Innovation

SUBJECT: General Charge to the Post COVID-19 Innovation Task Force Chairs

DATE: April 30, 2021

Dear Colleagues,

In March 2021, Chancellor Woodson charged a Post COVID-19 Innovation Task Force Steering Committee, as noted above, to identify major innovation initiatives realized during our response to the COVID-19, and to explore how best to engage the university in a thoughtful evaluation of potential post COVID-19 applications. With the establishment of the university's 2021-2030 strategic goals, the steering committee focused its charge on the formation of initiatives that the university should continue in the near term, while recognizing that those initiatives will most likely require development in alignment with the new strategic goals over time.

Based on review of contemporary publications examining higher education in the post-COVID environment; review of various faculty and staff surveys by NC State entities, Office of Research and Innovation, and

Office of Finance and Administration; Cabinet discussions and similar meetings; and shared experiences with our NC State students, faculty and staff, the Steering Committee proposed, and the Chancellor has approved, four innovation task forces as follows:

1. **Instruction and Student Support** - Leveraging technology to expand academic offerings, opportunities and experiences (Co-Chairs: Louis Hunt and Donna Petherbridge).

2. **Research** - Supporting laboratory and other research operations including physical space, funding and employee well-being (Co-Chairs: Genevieve Garland and Alyson Wilson).

3. **How We Work** - Flexible work arrangements and optimization of university space (Co-Chairs: Lisa Johnson and Marie Williams).

4. **Digital Transformation** - Where feasible and advantageous to the university, digitizing processes such as cashless point-of-sale, paperless processing, electronic payments and funds receipts (Co-Chairs: Gwen Hazlehurst and Mary Peloquin-Dodd).

Charge

As a university leader, we are asking you to co-chair one of the four innovation task forces as summarized above. We ask each of the task force co-chairs to quickly establish governing principles to guide your work for your topic, recommend committee membership which reflects our university community, and develop a communications plan for engaging our community in the conversation. Again, it is important to remember that we are limiting our scope to initiatives activated over the last year that the university should embrace, while recognizing that further development may require alignment with the goals and objectives set forth in the new strategic plan.

We will schedule a meeting for the co-chairs to discuss the innovation task forces with the Steering Committee soon. Task forces are asked to provide a formal report to the Steering Committee and Chancellor by August 2, 2021.

Please review the following information and contact any of the Steering Committee members, should you have questions. We look forward to our initial meeting, and working together on this effort.

Principles for the Steering Committee and Innovation Task Forces

Guided by our 2021-2030 Strategic Plan, Wolfpack 2030: Powering the Extraordinary and informed by our shared experiences from working within a COVID-19 impacted environment, the steering committee has adopted the following principles - and advises the task forces to adopt the similar principles as well:

1. Through all aspects of our innovation task forces and resulting initiatives, continue to expand opportunities to support a diverse, equitable and inclusive university community.

2. Assess, and, as appropriate, modify how we teach, perform research, operate, and outreach to our constituents.

3. Improve university operations, space management and flexible work location policies (such as office and/or home), processes and metrics, to improve university effectiveness and utilization of university resources.

4. Improve the ability to recruit and retain talented employees; likewise, improve the ability to attract and retain students.

5. Support a balance of collaboration, engagement, productivity, effectiveness and well-being for our university community.

6. Work to clearly, transparently, and in a timely manner, communicate effectively and inclusively with our university community.

University Effectiveness - Post COVID-19 Innovations

Responsible stewardship of the resources entrusted to our care means performing in the best possible way with the least waste of time, resources, money and energy. For our university to continuously improve in a post COVID environment, we must focus on identifying opportunities to redirect valuable staff time and financial resources to our strategic projects and programs, in the best interest of NC State University – and take advantage of the numerous innovations and improvements implemented throughout the past year as we worked in a COVID-19 impacted environment.

Vision (Purpose and Goals) for the Task Forces

To organize university efforts and identify adaptations to improve academic, research, administrative and operational functional areas, while also improving university effectiveness in employee and student recruitment, retention and engagement.

Methodology/Approach for the Task Forces

In accordance with principles noted above, task forces should continue to expand opportunities to support and continue to build a diverse, equitable and inclusive university community. Task force membership should reflect a diverse, equitable and inclusive university community.

Task forces are expected to project manage this effort, by developing action plans, roadmaps, timelines and reporting schedules - with the goal to identify potential adaptations for our institution to adapt now at the university level. Task force recommendations should be informed by the adaptations and lessons learned over the past year.

Deliverables and Reporting Expectations for the Task Forces

Once formed, each task force is requested to provide a status update report to the steering committee on a monthly basis.

Task force chairs and members are requested to communicate and collaborate with each other, as necessary to share ideas, discuss goals and obstacles, and, where appropriate, develop common approaches to policy, technology and training in the best interest of the university.

Each task force is requested to provide a formal written report to the steering committee and Chancellor by August 2, 2021. The report should contain proposed actions that the university should enact to ensure success, and should be sure to consider and make note of any equity issues identified or potentially addressed by the action. Actions may consist of policy changes, new procedures and/or guidelines, new technology and new training.

Measuring Performance Expectations for the Task Forces

Measuring performance is the fulfillment of a promise. Each task force is requested to identify performance metrics to assist in evaluating the effectiveness of proposed innovations. Task forces should propose performance goals connected to service levels, suggest plans or stages for improvement, and ideas for measuring progress against the plans and goals. Inter-departmental collaboration is often required to ensure performance measurements are accurately and robustly captured. Outcome based metrics are suggested generally, however exceptions are permitted. Whenever possible baseline metrics are necessary at the onset, to measure and evaluate performance of the recommended initiatives.

High-Level Instructions for the Task Forces

- Define goals and scope (if necessary, define pilot(s) and/or phased approach). Clearly articulate vision and guiding principles.
- Identify baseline metrics and outcome metrics.
- Define roadmap and timelines for each goal.
- Identify resources needed and obstacles anticipated.
- Provide a reporting and communications plan. Include communications plan to support (corporate) culture change - communicate clear goals, aligned purpose and demonstrated values.

For more detail pertaining to specific task force goals, background and key concepts, please see the following appendix.

As noted above, we will schedule a meeting for the co-chairs to discuss the innovation task forces with the Steering Committee soon. We look forward to our initial meeting, and working together on this effort.

Attachment

cc: W. Randolph Woodson, Chancellor

APPENDIX
POST COVID-19 INNOVATION TASK FORCES
Goals, Background and Key Concepts

Task Force 1: Instruction and Student Support

Co-Chairs: Louis Hunt and Donna Petherbridge

Goals

- Assess the novel, pandemic-related changes implemented to support and expand access for our students, and identify best practices that should be continued.
- Enhance student learning by leveraging the increased experience and comfort level of the faculty in the use of technology for teaching and learning to continue and improve upon online teaching modalities that benefit students and improve learning outcomes.
- Make more recorded content available on demand, which is highly desired by students, and leverages the university's investment in lecture capture technology (Care will need to be taken to protect faculty and student intellectual property and privacy.)
- Continue, where advantageous, the "hyflex" model of course offerings where classes are offered simultaneously online and face to face, giving students the flexibility to choose modalities that work best for them, including increased summer online offerings that are highly desired by students.
- With increased faculty expertise in the use of learning technologies to accelerate the digital transformation of higher education at NC State, provide an instructional framework which combines the most effective technology enhanced learning and in-person experiential learning.
- Address inequities in student and faculty access to appropriate technology and Internet access.

Background

Despite much of what has been reported in the popular press about student difficulties with the switch to online learning, the data shows a somewhat more nuanced story. A recent survey by Inside Higher Ed on student satisfaction during the COVID era which included 2,000 undergraduates from 120 institutions yielded some interesting findings. Students were asked to select their "top three" aspects of campus life that they missed most. The number one response (72%) was "friends and social life", while less than half (44%) included "in-person lectures" among their top three. When asked to pick a statement that best describes their post-pandemic learning desires, 31% chose "I can't wait for classes to be held in person again and I never want to take another Zoom class again." However, 50% had a somewhat different viewpoint: "There are things I like about remote learning that have worked for me and my learning style, but I'm anxious to get back to all or more in-person classes," and 9% indicated that that they *preferred* the online experience: "Remote classes really work for me and I don't want to go back to learning in person."

Data from studies at NC State support the robustness of our own online offerings. A rigorous study connected by DELTA to explore student and faculty perceptions of, and experiences with, online and f2f courses analyzed survey and grade data for 839 undergraduate students and 63 faculty sampled from across the university from the Fall 2019 semester. All of the courses included were offered in both online and face to face (f2f) formats by the same faculty. Across the board, student outcomes (grades and completion rates)

were not significantly different between f2f and online. No statistical differences were observed between online and f2f students in regards to their perceptions of a) course quality, and b) course satisfaction. Overall, students in both online and f2f courses viewed their course as exhibiting a moderately high level of quality and reported a moderately high level of course satisfaction. Interestingly, faculty perceptions of online vs f2f course quality and satisfaction exactly mirrored that of the students.

The DELTA study did find significant differences in student motivation and feeling of connectedness between online and f2f. These findings were mirrored exactly in the Inside Higher Ed study.

A pre- and post- pandemic transition survey conducted by the Office of Faculty Affairs supports the assertion that the faculty are more confident in their ability to teach effectively online. Prior to the transition, 58% of instructors surveyed had less than two years of experience in teaching online, with 53% of those reporting no prior experience. Pre-transition, 31% of faculty felt “totally or somewhat unprepared” to deliver course lectures online, whereas post-transition that figure dropped to 6%. Similar pre- and post- differences were found for comfort levels with using technology in instruction, maintaining communication with students, and assessing student learning without the use of proctored exams.

Over the summer of 2020, a massive build-out conducted by OIT’s ClassTech group and DELTA resulted in lecture capture capability being installed across 220 teaching spaces across campus, resulting in coverage of 94.4% of all 110 classrooms. This was probably the single most important infrastructure investment to maintain academic continuity during the pandemic. Due to our prior experience with classroom lecture capture technology, the build-out was extremely robust and is positioned to serve the university well post-pandemic. Student surveys conducted for six years by ResNet have shown a very strong desire by students (98%) to have access to recorded lectures for review and study. A recent student survey conducted by DELTA yielded the same result, with 100% of students reporting that if they knew that recorded lectures were available they would utilize them to help with concepts they were having trouble with, and to study prior to exams.

Among the most challenging issues that we encountered during the pandemic were significant inequities for both students and faculty in accessing appropriate technology for remote learning, and also in the availability of adequate and reliable broadband access. We were able to address the first issue to some degree by ramping up a long-term equipment lending program through the Libraries. The broadband access issue was largely out of our control. The net result was that while we were able to produce and deliver quality eLearning content centrally, the ability of our students to take advantage of it varied greatly as a result of these inequities.

Key Concepts

- As an institution, we successfully pivoted much of our student services and support to a virtual environment as a result of the pandemic. These newly delivered modalities have increased access for students, and for some, increased engagement in different, improved ways. For instance, in a recent satisfaction survey administered by Counseling Services, 1/3 of students who responded to the survey preferred virtual appointments, 1/3 preferred in-person, and 1/3 are fine with either.

- We now have a much better understanding of faculty and student perceptions of technology-based teaching and learning, as well as what works and what doesn't work. What we've learned at NC State closely mirrors findings from national studies.
- Our faculty are now better prepared to utilize technology in teaching, and more confident in their ability to do so.
- We now have a robust infrastructure that spans virtually all of our classrooms which allows us to stream and record lectures.
- We now understand how important it is for our students and faculty to have equitable access to sufficient end point devices and high quality broadband.

All of these things can and should be leveraged to improve instructional efficiency and effectiveness, with the ultimate goal of improving student success. This includes (but it not limited to) more hybrid and "hyflex" models of delivery, making more classroom recordings available to students for study and review; making more online summer offerings available for students to make progress toward degree while allowing them to pursue employment, internships, and other experiential learning opportunities; ensuring equitable access to quality technology and broadband for all students and faculty; and setting the stage for our new strategic plan objectives in the digital transformation of higher education.

Task Force 2: Research

Co-Chairs: Genevieve Garland and Alyson Wilson

Goals

- Support laboratory and research operations such as physical space, technology infrastructure, core facilities, funding and employee well-being within new work environments and safety protocol.
- Actively support non-laboratory based research activities.
- Support researchers who were negatively impacted or may have stalled over the past year due to COVID, in terms of lost funding, adverse impact from work/life balance concerns, and other access restrictions to physical lab and research space.
- Continue to invest in research and research enterprise growth and take advantage of upsurges in COVID and other new funding opportunities (e.g., AI, data science, plant sciences, climate, health, different engineering domains, digital agriculture, quantum computing, etc.).
- Actively increase interactions with industry, and other diverse sponsors (e.g., DoD).

Background

The Office of Research and Innovation (ORI) has been fully functional and operational in the virtual space, except for skeleton on-campus personnel, from March 20, 2020. Unfortunately, from March 20, 2020 to May 18, 2020, NC state research enterprise operated with drastically reduced on-campus activities (including centers and institutes, research stations, and field operations). Most of the research work was done virtually. Still, the NC State research enterprise, while not immune, seems to have been less damaged than some other NC State activities. Restarting the facility-based (e.g., laboratories, field work, etc.) research enterprise as much as possible and as soon as possible, and making further investments into it to take advantage of an upsurge in COVID-19 related funding and put it back onto its very successful pre-pandemic track, was imperative. By the fall of 2020, the lab-based part of the NC State research enterprise was almost fully back to normal (with some personnel density restrictions, mandatory PPE and cleaning, non-facility based research still being done from home, although on request any researcher can work from their university office, etc.). By December 2020, more than 5,000 in-lab/field personnel slots were approved (faculty, staff, students) in different laboratories and field locations, of which only about half could be on campus at any time to comply with the density restrictions. Results were excellent, in terms of the operational effectiveness of the NC State research enterprise and its overall productivity. However, some issues need further attention.

Between December 17, 2020 and January 11, 2021, University Research Council (URC), in collaboration with the university, posted a survey that in part focused on the impact of the pandemic on faculty and their research activities. Response rate was about 29%. Distribution of responding faculty appears to have been representative across colleges. In the research context, and depending on the question, the number of respondents was between 300+ and 600+. Results of the survey are now available. To a large extent, these results reflect “pre-vaccine” views and concerns of the university faculty. However, some of the concerns are still valid even with the vaccine being available, and have both tactical (short term) and strategic (long term) implications. Results are briefly summarized below, and can serve as one of the platforms from which planning can be done in terms of lessons learned from the pandemic.

In 2020, as many as 85% of surveyed faculty did at one point do most or all (research) work off campus, and about 75% of faculty indicated a reduced ability to succeed in research, teaching and extension; 87% of faculty reported spending “somewhat more time” to “a great deal more time” on their teaching; about 80% of faculty felt “somewhat more than usual” to “much more than usual” anxiety, stress, being overwhelmed, worried about family health, worried about their health, and struggling with work-life balance. Assistant professors appear to have been affected most, then Associate and then Full professors. Women reported a higher degree of challenges than men. While the faculty productivity measured through the proposals sent out in FY20 and FY21 was/is ahead of the non-pandemic period, surveyed faculty reported, for example, a slowdown in manuscript completions and concerns about being competitive. In general, some of the key obstacles to doing research was lack of time because of other demands (e.g., teaching, childcare, access to research assistants, etc.). Inability to travel (and get in-person feedback at, for example, conferences) is still an issue for some of the faculty.

Key Concepts

Some of the potential short term remedies recommended by the faculty include seed funding aimed at those whose research may have stalled, funding for students who now may be on the edge of not being funded, and in many instances ongoing concern about childcare. One of the long term lessons is that we definitely do need to keep NC State laboratories and research related spaces adequate, open and secure at all times in order to enable at least 50% of the researchers to work. Another one is that work from home, while feasible, may be (is), for a large fraction of the researchers, more stressful and distracting (and possibly less productive) than working in the office, so research office spaces should be preserved. Investment into existing and new research initiatives to grow NC State’s research reputation and visibility is essential.

Task Force 3: How We Work - Flexible Work Arrangements and Optimization of University Space

Co- Chairs: Lisa Johnson and Marie Williams

Goals

- Flexible work arrangements to support the university's mission and commitment to recruit and retain a diverse and talented workforce.
- Foster a highly engaged and productive work environment that values employee well-being and work-life balance. Ensure the university maintains its community culture and best place to work environment.
- Reimagine university space to the highest and best use as a university resource which must be stewarded.

Background

We have learned that a number of campus functions can be performed remotely. Campus space demands are ever increasing and a well-developed flexible work policy can improve employee retention and recruitment while improving the utilization of existing campus facilities and reducing rental costs. Relatively early in the pandemic, it was recognized that the sequestration and different teaching and operations environments, coupled with the threat of COVID-19, induced considerable stress on employees and students. We encouraged unit directors to take time during the work day to evaluate unit wellness and conduct training and provide common resources for employees to look at their work-life balance - to help each other better understand and mitigate the stress and strain of the pandemic on their personal and professional lives. Our success so far in this effort is mixed, but we will continue to prioritize this effort in our post-pandemic routine.

Key Concepts

- Flexible work arrangements are non-traditional working options to conduct work that involve variations to an employee's work schedule, and/or place of work to accomplish the duties and responsibilities of an employee's assigned position, through a combination of employee request and at management's discretion. Such arrangements may include flexible work schedules, job sharing and remote work and other options.

Task Force 4: Digital Transformation

Co- Chairs: Gwen Hazlehurst and Mary Peloquin-Dodd

Goals

- Take advantage of digital transformation activities and lessons learned that were implemented during the past year due to the COVID-19 pandemic, and leverage these temporary technical adaptations into permanent work structures, processes, policies and employee flexibility.

Background

De-densifying the campus required significant changes as to how work was conducted across the university. Working remotely, adapting technology, and shifting traditional paper based procedures all supported a distributed workforce. IT security measures influenced changes to our work processes and communications. Several steps were taken to automate transactions and communicate virtually to assist in maintaining safe distancing between employees and communicating with remote workers and external constituents. Many of these new methods of delivery, purchasing, and reliance on email, voicemail and zoom changed our approach to work. Opportunities exist to adopt many of these technical changes as improvements to our university effectiveness.

Key Concepts

- Adopting paperless processes as the standard.
- Eliminate cash transactions across the campus (point of sale transactions, A/R and A/P).
- Revise travel policy and expectations by prioritizing virtual meeting opportunities whenever feasible and advantageous.
- Explore additional technology systems (at the enterprise level, where possible) to ensure collaboration, effectiveness and security.