

**THE UNIVERSITY OF NORTH CAROLINA AT GREENSBORO**  
**BOARD OF TRUSTEES**  
**Academic Affairs Committee**  
**February 20, 2018**  
**MINUTES**

**MEMBERS PRESENT:** Dean Priddy, Chair; Brad Hayes; Kathy Manning; Holly Shields

**MEMBERS NOT PRESENT:** Betsy Oakley; Elizabeth Phillips

**OTHERS PRESENT:** Frank Gilliam, Chancellor; Dana Dunn, Provost and Executive Vice Chancellor; Terri Shelton, Vice Chancellor for Research and Engagement; Cathy Akens, Vice Chancellor for Student Affairs; Charlie Maimone, Vice Chancellor for Business Affairs; Kelly Burke, Vice Provost and Dean of The Graduate School; James Ryan, Dean of the Joint School of Nanoscience and Nanoengineering; Hemali Rathnayake, Department of Nanoscience; Olav Rueppell, Department of Biology; Waiyi Tse, Chancellor's Chief of Staff; and other members of the administration, faculty, staff, and general public.

**PROCEEDINGS:**

Chair Priddy called the meeting to order at 1:00 P.M. and reminded members of the Conflict of Interest (COI) statement from the State Government Ethics Act and their duty to avoid COI and appearances of COI, if any should be identified. None were identified.

Chair Priddy introduced Cathy Akens, the new Vice Chancellor for Student Affairs, to the committee.

The roll call was read and a quorum was confirmed.

The Minutes for December 6, 2017, were approved with no additions or corrections.

**DISCUSSION ITEMS:**

AAC-1        Provost's Report

Dunn responded to a request for information regarding undergraduate applications and confirmed admissions statistical information for fall 2018. Applications are down by design. We have been refining our outreach strategy to improve yield rate and the numbers show that the strategy is working. Undergraduate applications are down approximately seven percent overall, yet we are up 15 percent in new freshman confirmed admissions. We are currently flat for transfer admits, but a transfer student recruitment event is scheduled for this evening for three hundred prospective transfers and spikes are typical after such events. While the numbers may

appear alarming, keep in mind that going out for applications that do not result in an admission is a costly undertaking. We are using the same resources in a more targeted way and increasing admits and growing enrollments.

AAC-1.1 UNC System Policy: Regulation Related to Fostering Undergraduate Student Success/New UNC 120 Hour Degree Policy and Board of Trustee Exception Review (Dunn)

This presentation serves as notice of an item that will appear on the November 2018 agenda that will require Board of Trustees (BOT) approval. At the most recent Board of Governors (BOG) meeting, the BOG approved a new policy that requires all undergraduate degrees in the UNC System to require a maximum of no more than 120 credit hours, or be granted a special exception by the campus BOT and subsequently reviewed at periodic intervals by the BOG. SACS (Southern Association of Colleges and Schools) requires that all undergraduate degrees have a minimum of 120 hours, so the number selected is the SACS minimum. There is a national trend for systems to reduce credit hour requirements and 120 is not uncommon. The driver for this initiative is the time to degree, which includes consideration of with five- and six-year graduation rates and the cost of required credit hours to the State and the student. When the proposal was put forward, the BOG made clear that they intended to approach the legislature once this was in place, showing how the burden on the State and the taxpayer for credit hours had been reduced, and ask in exchange that the legislature begin to fund summer face-to-face instruction.

Since the policy was passed, UNCG is now in the process of reducing the hours in every degree program on campus. In 1978, UNCG increased the degree requirement minimum to 122 hours to accommodate two hours of physical education activity courses, and 98% of undergraduate degrees currently require that minimum for graduation. The remaining programs are in excess, up to 128. Faculty Senate and curriculum committees are discussing the appropriate approach for undertaking the task of credit hour reduction. A decision will be made at the next Faculty Senate meeting as to whether these hours will come from the General Education curriculum, or whether it will be the responsibility of each program to review their major requirements and free electives to make the reduction. Many of our professional degrees have limited, if any, elective hours. Electives are important because many of our students begin as “undeclared” and elective courses help them choose their majors wisely.

A template will be prepared to request exceptions to the 120 rule, and many requests are anticipated. The policy points to areas where exceptions are most appropriate, referring to accreditation issues and licensure. In many education-related fields, for instance, extra hours are required for licensure. It is likely that exceptions will be requested in such disciplines.

Other problematic reasons for delayed time to graduation include economic challenges, personal conflicts in students’ lives (illness, family commitments, work demands), motivational issues, academic preparation issues, and more. The University has many strategies in play, particularly

in terms of academic support, to enhance time to degree. We have also tried to use Summer Session to move students to degree in a more timely fashion. Most of the summer program is online, which allows for State funding. Each student who falls below the yearly 30-hour threshold is encouraged to enroll in Summer Session to compensate for hours lost, reminding them of the benefits of the tuition lock (Fixed Tuition Guarantee).

#### AAC 1.2 Background on University Credit Hour Regulation (handout)

#### AAC-2 Research and Engagement (Dunn)

Last year, UNCG set a goal to increase external funding by 5 percent. The goal was met and exceeded. Another goal was set at 5 percent for this year. Note that these increases do require investments. One of the ways we drive increased research here is through the hiring of new faculty, which has been possible for the past three years with enrollment growth funds and other key initiatives such as seed-funding grants, most recently a seed-funding grant tied to the Chancellor's strategic plan.

#### AAC-2.1 Giant Steps: Advancing Research, Scholarship, and Creative Endeavors (Shelton)

As an R2 Carnegie-designated institution—higher research activity—UNCG boasts a faculty consisting of our teacher-scholars. These faculty have greater teaching loads than faculty at R1 institutions, and so advancing research and scholarship while sustaining a genuine commitment to teaching demands a special set of skills. UNCG is also classified as being a community-engaged university. There are only 50 institutions of higher learning in the U.S. that have both designations.

As of July 2017, grant submissions from fiscal year 2016 to 2017 were up by 65.07% (\$54,735,662) and awards were up by 5.33% (\$1,638,454) with Federal awards up by 31.32% (\$3,657,866).

The task of creating new knowledge and innovation translates into creating what is and will be taught in the classroom. Students benefit from being exposed to research that is brought into the classroom by talented researchers/scholars. UNCG invests \$100,000 each year on research assistantships. There is a long history at the University of undergraduate research involvement in the sciences, but we are now building out to the social sciences, the humanities, and the creative arts as well so that every undergraduate student can be exposed to that type of mentorship. We are also working with the Graduate School to increase ways that graduate students are exposed to grantsmanship and to ways in which they can fund their own research.

In the effort to recruit and retain outstanding faculty, \$270,000 is dedicated to two SEED grant opportunities annually, which are key in creating the financial support necessary for research faculty to collect data, move a book along, or stage an exhibition that will make the University

competitive for other funding. Last year an additional \$225,000 was invested in strategic SEED grants by the Chancellor and the Provost, and this year 11 projects, called Giant Steps, are being funded at \$25,000 each.

Financial support is provided for travel, usually matching with deans and department chairs, to get faculty work out to conferences, as well as to support for publications and exhibitions. To help faculty learn about other scholars on campus, there are many special interest research networks that allow folks to get to know each other—everything from the child and family research network and the STEM research and instruction in STEM network, which have been on campus for over ten years, to the new humanities networking consortium. Several faculty are currently interested in creating a network focusing on health services research.

UNCG has a new metro-lab collaboration with Guilford County focused on implementing and evaluating various rapid response approaches to dealing with opioid use in the county.

#### AAC-2.2 Solar Cell and Thermoelectric Technologies (Rathnayake)

This presentation focused on two renewable energy technologies being developed in the Nanoscience Department on the application side. The first concerns solar cells—harvesting sunlight, solar energy, to electricity—and the second is thermoelectric generators—harvesting waste heat to electricity. Currently, we dissipate a lot of wasted heat with no way to capture it in a low-cost and equitable way. Rathnayake's team is focused on making novel carbon-based nanomaterials for green energy applications by developing organic semiconductors functionalized nanostructures to harvest solar energy for the generation of electricity. This approach uses abundantly available low-cost material to develop low-cost organic-based solar cells. One flexible, recyclable plastic solar cell can replace a 1.5 watt battery. Most solar cell technology is dependent on heavy metals, so this organic approach is not only more efficient and cost effective, but sustainable.

While working on the solar cells, the team received a NASA EPSCoR grant in 2014 to study the influence of gravity on electrokinetic and electrochemical colloidal self-assembly for future materials. Their research orbited Earth on the International Space Station in 2015 and is scheduled to participate again in 2019.

The team has successfully reduced the size of a semiconductor chip from ~13 nm (1 nm=one billionth of a meter) to 3 nm—three generations ahead of current state-of-the-art research, which will make the chips that power smartphones both powerful and less power-hungry.

### AAC-2.3 The Social Insect Lab at UNCG (Rueppell)

The honey bee is an important research model for basic research questions, such as how animals perceive distances. Bees have the ability to measure the flow across their retinas to see how far they have flown and to keep track of distance. This operates much like an odometer in a vehicle.

The relevance of honey bees extends to products, including hive products that we harvest for food and for plant-derived resins that are incorporated into cosmetics. The key element of this research pertains to pollination services; one-third of all human food supply depends on insect pollination, and honey bees are the most important managed insect pollinator. Almonds for example, require that half of all bee colonies in the U.S. are shipped by truck to California in February for pollination. In North Carolina, blueberry production is dependent on bees.

Rueppell's early research used honey bees as biological models to ask questions about, for example, aging. Honey bees have an enormous plasticity of aging rates; there are in the same colony, in the same family under identical living conditions, order of magnitude differences in terms of life expectancy. That's between the queen and the workers, their sisters; they are genetically identical but the workers live an order of magnitude shorter. So, we are asking questions about how that can occur biologically. There is also an interest in social behaviors and the genetic architecture of social behaviors; how many genes contribute to a social behavioral trait. This is not like Gregor Mendel's focus on one gene, one behavior, or one trait; it is much more complicated. With that came an interest in genomics, using honey bees to explore how genomes can code behavior and other phenotypes, but also how they are built. It turns out that honey bees have a unique chromosome structure. More and more, partly driven by the acute honey bee health crisis but also by student interest, Rueppell's research has become more applied, as well, by dealing with different factors that contribute to the honey bee health crisis, including heat stress, temperature stressors, sublethal effects of pesticides on intestinal stem cells, and biological actors that contribute to the demise of honey bees, viruses among the most important. Rueppell is studying the Israeli acute paralysis virus—a widespread RNA virus of honey bees that has been linked with colony losses—and the Varroa mites.

Varroa mites are considered the most severe threat to honey bee health. Bees have natural defenses that Rueppell is currently studying, one of which is hygienic behavior, which is defined as the detection and removal of unhealthy bees from the colony. That practice leads to improved colony health. Bee nurses identify an unhealthy brood that is parasitized by a Varroa and remove it from its cell by pulling it out and interrupting the reproductive cycle of the Varroa mite. By studying this hygienic behavior, a lot is known about the adult nurse bees that perform this behavior, which has been used for breeding better bees, but not much was known about the brood. The brood sits in mite-infested waxen cells and are defenseless unless they can signal to the nurse bees for help. Rueppell's team has created a synthetic (P32) that may be used as a selection tool to breed better hygienic bees, as well as a treatment for highly infested colonies that can be sprayed into the colonies, causing the bees to check their brood, which is both natural and sustainable.

**CLOSED SESSION**

**ACTION ITEM:**

AAC-3          Promotion and Tenure (Dunn)

AAC 3.1 Report on Promotion and Tenure

Twenty-three faculty candidates were put forth for promotion and/or tenure.

All recommendations were approved unanimously and recommended for approval at the full Board meeting on Friday, February 23, 2018.

**INFORMATION ITEM:**

AAC-4          Update on Research and Engagement (Dunn/Shelton)

No action; information only.

**ADJOURN:**

Meeting adjourned at 2:10 P.M.

Respectfully submitted,



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Kelly Harris  
Assistant Secretary to the Board