NC STATE UNIVERSITY

July 2025 University Affairs Committee Meeting

University Affairs Committee Meeting

July 15, 2025

Virtual via Zoom

https://go.ncsu.edu/botmeeting

David Powers, Committee Chair

Members: Marie Arcuri, David Herring, Tim Humphrey, Ven Poole, Perry Safran, Isaac Carreno

NC STATE UNIVERSITY

Meeting Book - July 2025 University Affairs Committee Meeting

Meeting Agenda

1:45pm

1. Call to Order, Public Meeting Notice, Reading of Ethics Statement
David Powers, Chair

A. Ethics Statement

2. Executive Summary

A. Executive Summary Open Session

3. Roll Call
Amy Jinnette, Board Professional

4. Consent Agenda
David Powers, Chair

Action Item for Committee

A. Approval of April 3, 2025 Open Meeting Minutes

a. UAC Minutes 04/03/25 OPEN SESSION

B. Approval of April 3, 2025 Closed Meeting Minutes

C. Conferral of Tenure Requests

D. Centers and Institutes - Authorization to Continue Requests

a. William and Ida Friday Institute for Educational Innovation (WIFIEI)

b. North Carolina Sea Grant College Program (NCSG)

E. Academic Program Actions - Request to Establish

Action Item for Committee and Full Board

a. New Graduate Degree Program – M.R. in Agricultural Business Management

b. New Graduate Degree Program – M.S. in Wide Bandgap Semiconductors

5. Closed Session Executive Summary

A. Closed Session Executive Summary -

a. Executive Summary Closed Session

6. Closed Session

Action Item for Committee

7. Reconvene in Open Session

8. Adjourn

NORTH CAROLINA STATE ETHICS COMMISSION

SAMPLE[1]

ETHICS AWARENESS & CONFLICT OF INTEREST REMINDER

(to be read by the Chair or his or her designee at the beginning of each meeting)

In accordance with the State Government Ethics Act, it is the duty of every [Board] member to avoid both conflicts of interest and appearances of conflict.

Does any [Board] member have any known conflict of interest or appearance of conflict with respect to any matters coming before the [Board] today?

If so, please identify the conflict or appearance of conflict and refrain from any undue participation[2] in the particular matter involved.

Rev. 1-16-07

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[1] N.C.G.S. §138A-15 (e): "At the beginning of any meeting of a board, the chair shall remind all members of their duty to avoid conflicts of interest and appearances of conflict under [Chapter 138A]." There is no set language required by the Act. Specific language can and should be tailored to fit the needs of each covered board as necessary.

[2] "A public servant shall take appropriate steps, under the particular circumstances and considering the type of proceeding involved, to remove himself or herself to the extent necessary, to protect the public interest and comply with this Chapter, from any proceeding in which the public servant's impartiality might reasonably be questioned due to the public servant's familial, personal, or financial relationship with a participant in the proceeding." See N.C.G.S. §138A-36 (c). If necessary, the Chairman or individual member involved should consult with his ethics liaison, legal counsel, or the State Ethics Commission to help determine the appropriate response in a given situation.

Executive Summary for
University Affairs Committee
July 15, 2025

Pages

Agenda Item: Consent Agenda 6-75
Presenter: *David Powers, Chair*
Summary: The items presented for approval on the Consent Agenda include the April 3, 2025 open and closed session meeting minutes; conferral of tenure requests for newly hired faculty members; authorization to continue the William and Ida Friday Institute for Educational Innovation (WIFIEI) and the North Carolina Sea Grant College Program (NCSG); and *authorization to establish two new graduate degree programs: the M.R. in Agricultural Business Management and the M.S. in Wide Bandgap Semiconductors.

Action: Committee and *Full Board approval

OPEN SESSION MINUTES

University Affairs Committee
Board of Trustees
North Carolina State University
April 3, 2025

The University Affairs Committee of the Board of Trustees of North Carolina State University held a meeting in the Park Alumni Center Hood Board Room on April 3, 2025.

Members Present:	David Powers, Committee Chair Marie Arcuri David Herring Allison Markert Ven Poole
Members Absent:	Tim Humphrey Perry Safran

Chair Powers called the meeting to order at 1:00 p.m. The roll was called, and a quorum was present.

Chair Powers reminded those in attendance that while the committee meeting is a public meeting, it is not a meeting for public comment and only those on the agenda will be permitted to speak. He asked that all Trustees identify themselves before making or seconding a motion and read the State Government Ethics Act to remind all members of their duty to report conflicts of interest or appearances of conflict. Finally, he asked any media representatives present to identify themselves to Board Professional Amy Jinnette. Reporters from *The News & Observe*r (Korie Dean) and *WRAL* (Brian Murphy) were present.

Consent Agenda

Chair Powers reviewed the list of items on the consent agenda which included approval of the February 6, 2025 open and closed meeting minutes; conferral of academic tenure to five (5) new faculty members and forty-nine (49) faculty members who were reviewed during the annual campus Reappointment, Promotion and Tenure (RPT) process; designation of a time limited option for four (4) distinguished professorships; and the request to continue the Institute for Emerging Issues (IEI). A motion was made by Trustee Arcuri, and seconded by Trustee Poole, to approve the consent agenda. The motion passed.

Action Items

Exceeding 120-Credit Hour Limits – Request for approval and review of previously granted waivers

Provost Arden presented a waiver from the College of Engineering to increase the B.S. in Industrial Engineering degree program from 124 to 127 credit hours through the addition of three credits of technical electives. This change will allow students to gain greater knowledge and depth in data science and sustainability. The requested increase to 127 credit hours is consistent with similar program requirements at other universities, including Clemson University and Georgia Institute of Technology. The waiver is required by UNC policy which stipulates four-year baccalaureate degree programs will require no more than 120 semester credit hours unless an exception is granted by the Board of Trustees. In 2018, the College of Engineering requested an exception to offer its B.S. in Industrial Engineering program at 124 which was approved by the Board of Trustees. A motion was made by Trustee Poole, and seconded by Trustee Arcuri, to recommend to the full board an increase of three credit hours to the B.S. in Industrial Engineering degree program for a total requested level of 127 credit hours. The motion passed.

Continuing on this topic, Provost Arden provided an overview of previously granted waivers per a recent request from the UNC Board of Governors. In 2018, the Board of Trustees approved 20 undergraduate degree programs for an exception to the 120-credit hour requirement. The 20 exceptions included 17 requests from the College of Engineering, and one request each from the Colleges of Design, Education and Natural Resources. All the requests were associated with accreditation and/or licensure requirements.

During a recent review, all colleges expressed a continued need for the previously approved credit hour waivers due to continued accreditation and/or licensure requirements with the following exceptions: three Engineering programs have reduced their total credit hours (Aerospace, Biomedical, Construction) while two have requested credit hour increases (Environmental, Industrial). NC State has a well-established, documented process for colleges to request an exception to the 120-credit-hour limit or have had a credit-hour waiver approved by the Board of Trustees. Thus, the university is in compliance with the UNC policy.

Department of Athletics – Changes to the Bonus Schedule for Men's Basketball
Athletics Director Boo Corrigan presented changes to the bonus schedule for Men's Basketball. The changes are being made for alignment and consistency purposes. Trustee Markert moved to approve updates to the bonus schedule. Trustee Arcuri seconded the motion. The motion passed.

Reports

Commencement Update
Chancellor Woodson provided an update on May commencement activities. Commencement will be held on Saturday, May 3, 2025, in Carter-Finley Stadium. Three honorary degrees will be awarded at the ceremony: Ann Goodnight, a lifetime leader and champion of education; Admiral Daryl Caudle, Commander of U.S. Fleet Forces Command and NC State alumnus; and Vivian Howard, author, television personality, chef, and restauranteur. Admiral Caudle will also deliver the commencement address.

Provost Update
In his report, Provost Arden discussed the UNC System Office Peer Study update, a required periodic review of our peer institutions which are used to benchmark performance and statistics. During this year's review, two institutions from the 2020 list were dropped, the University of Florida and the University of Wisconsin – Madison, and two institutions were added, the University of Georgia and the University of Minnesota - Twin Cities. The two additions were found to be a closer match to NC State with respect to several key variables. Provost Arden also discussed the campus review process to propose changes to the General Education Program and major specific requirements to align with the UNC System's Memorandum Regarding Federal Contracting Compliance. The DEI category has now been formally removed from the General Education Program and the university is continuing to review any major specific DEI requirements. Finally, the Provost informed the committee of distinguished professorship appointments that have been awarded this academic year and underscored the impact these professorships have on our ability to hire and retain top talent.

Faculty Senate Report
Chair of the Faculty Dr. Herle McGowan summarized agenda issues presented to the Faculty Senate during the first four meetings of 2025. Topics included proposed revisions to Chapter VI of the UNC Code which covers core definitions and rights of faculty; de-escalation training; retirement and financial planning; updates on the research administration and support services task forces created to improve the research infrastructure at NC State; and finally proposed changes to the university's General Education Program necessitated by the February 5, 2025 UNC System Office Memorandum Regarding Federal Contracting Compliance. In response to the memo, the UNC Faculty Assembly drafted and passed a Resolution which was subsequently endorsed by the Faculty Senate and many other UNC System institutions. The resolution affirms the importance of academic freedom as a principle crucial to the university's mission of discovery, innovation, teaching, and service. Chair McGowan concluded her report by discussing tenure, an important pillar of higher education. At the conclusion of her report, Chair Powers noted this was Chair McGowan's last report to the committee as Chair and thanked her for her service.

Staff Senate Report

Chair Powers noted that this was also Staff Senate Chair Charles Hall's last report to the committee as Chair and thanked him for his service. Chair Hall outlined the activities of the Staff Senate as taking three main approaches - enriching the lives and community of staff across the university through professional development and a culture of service; advocating for positive change that affects staff members; and acting as a voice communicating policy, opportunity, and collaboration across our campuses and counties. He explained through its Governance Committee, the Staff Senate has taken a comprehensive approach to rewriting their proposed bylaws to ensure consistency, a firm structure of shared governance, and a thoughtful approach to how these volunteer roles function. One such change being proposed is to expand the duration of the Senate Chair from one year to two, following the model of the Faculty Senate. The Staff Senate has recently expanded the level of resources to help provide digital literacy support and access to staff, working with campus partners in divisions with the greatest need. Chair Hall noted in times of change and uncertainty, finding ways to ensure that university staff is supported and appropriately resourced, equipped for success, and recognized is of paramount importance. He concluded his report by expressing gratitude to the board, committee, and university leadership over the years in creating a successful partnership in support of our campus.

Informational Materials

Chair Powers referred to the informational items in the materials and asked if there were any questions. He explained the items included the UNC System Office required annual reports on Intercollegiate Athletics and Nepotism; the annual reports from the Office of Enrollment Management and Services on students requiring special consideration and residency for full scholarship undergraduate students; and academic program notifications. He also highlighted some good news contained in the Intercollegiate Athletics report pertaining to the GPAs of our student-athletes and the graduation success rate of student-athletes which is currently at 92% and ties an all-time high for our institution. He recognized the Academic Support Program for Student Athletes led by Katie Graham for their hard work in support of our student-athletes.

Closed Session

With no further business in open session, Board Professional Amy Jinnette read the motion to go into closed session to establish the material terms of an employment contract and to prevent the premature disclosure of an honorary degree or award. Trustee Herring made the motion to approve and was seconded by Trustee Markert. The motion passed.

Reconvene in Open Session

After coming out of closed session, Chair Powers announced the meeting in open session.

Trustee Arcuri made a motion to approve the new employment agreement for the Men's Basketball Head Coach. Trustee Markert seconded the motion. The motion passed.

Trustee Arcuri made a motion to approve the emeritus status request for a Tier I employee. Trustee Markert seconded the motion. The motion passed.

With no further business, Chair Powers announced the meeting adjourned at 1:51 p.m.

Submitted by _____
Secretary to the Committee

Approved by _____
Chair of the Committee

NC STATE UNIVERSITY

Office of Research & Innovation
Office of the Vice Chancellor

http://research.ncsu.edu

Campus Box 7003
Holladay Hall, Suite 1A
Raleigh, NC 27695-7003
P: 919.515.2117

MEMORANDUM

TO: Kevin Howell
Chancellor
NC State University

FROM: Alyson Wilson
Interim Vice Chancellor for Research and Innovation
NC State University

SUBJECT: Recommendation to continue the William and Ida Friday Institute for Educational Innovation (WIFIEI) under Regulation 10.10.04

DATE: May 14, 2025

The William and Ida Friday Institute for Educational Innovation (WIFIEI) was authorized in November 2005 by the NC State Board of Trustees to advance K-12 education through innovation in teaching, learning and leadership.

In accordance with Regulation 10.10.04, a periodic (five-year) review of WIFIEI was conducted in November 2024 by an external review team. The review team highlighted the institute's important role in supporting student learning and development, offering professional development opportunities for educators, while fostering collaboration. The report further noted the significance of WIFIE's work as "particularly important now as students need to be prepared for the complexities of emerging technologies like AI, develop adaptability for the modern workforce, and have access to high-quality education."

The Office of Research and Innovation and the Provost recommend the William and Ida Friday Institute for Educational Innovation continue as a University Institute as sanctioned by the Board of Trustees and request your approval of this recommendation.

AW/mh

cc: Krista Glazewski, Executive Director, Friday Institute
Genevieve Garland, Senior Associate Vice Chancellor
Nadine Wong, Assistant Vice Chancellor, Research Infrastructure
Rita Henry, Centers and Institutes Specialist

NC STATE UNIVERSITY

Office of the Chancellor

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Raleigh, NC 27695-7001
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MEMORANDUM

TO: Alyson Wilson
Interim Vice Chancellor for Research and Innovation

FROM: Kevin Howell
Chancellor

SUBJECT: Recommendation to continue the William and Ida Friday Institute for Educational Innovation (WIFIEI) under Regulation 10.10.04

DATE: May 15, 2025

In response to your Memorandum dated May 14, 2025, authorization is hereby granted to forward the request to continue the William and Ida Friday Institute for Educational Innovation (WIFIEI) to the Board of Trustees for approval.

KH/mh

cc: Krista Glazewski, Executive Director, Friday Institute
Genevieve Garland, Senior Associate Vice Chancellor
Nadine Wong, Assistant Vice Chancellor, Research Infrastructure
Rita Henry, Centers and Institutes Specialist

NC STATE UNIVERSITY

Office of Research & Innovation
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MEMORANDUM

TO: Kevin Howell
Chancellor
NC State University

FROM: Alyson Wilson
Interim Vice Chancellor for Research and Innovation
NC State University

SUBJECT: Recommendation to continue the North Carolina Sea Grant College Program (NCSG) under Regulation 10.10.04

DATE: May 14, 2025

The North Carolina Sea Grant College Program (NCSG) was authorized in October 1978 and is one of 34 university-based programs across the United States recognized through the National Sea Grant College Program Act of 1966. Through research, outreach and education programs, NCSG provides unbiased, science-based information to enhance the sustainable use and conservation of ocean and coastal resources to benefit communities, the economy and the environment. NCSG is a multi-campus program of the University of North Carolina system.

In accordance with Regulation 10.10.04, a periodic (five-year) review of NCSG was conducted in January 2025. This external review was facilitated by the National Sea Grant Office as part of its full cycle review of NCSG for activities during the 2017-2023 reporting years. The site review report remarked that "NCSG's direction and management are exceptionally effective in engaging higher education leadership and faculty, supporting a skilled and dedicated staff, and leveraging NOAA's investments to address statewide needs." The report further noted that NCSG meets the Standards of Excellence expected of all Sea Grant programs and specifically lauded NCSG's activities and achievements in engagement in extension services, education and training and in broader collaboration network activities. The next periodic review is planned for 2029 and will cover the 2024-2028 performance period.

The Office of Research and Innovation and the Provost recommend NCSG continue as a University Center as sanctioned by the Board of Trustees and request your approval of this recommendation.

AW/mh

cc: Susan White, Director, NC Sea Grant College Program
Genevieve Garland, Senior Associate Vice Chancellor
Nadine Wong, Assistant Vice Chancellor, Research Infrastructure
Rita Henry, Centers and Institutes Specialist

NC STATE UNIVERSITY

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MEMORANDUM

TO: Alyson Wilson
Interim Vice Chancellor for Research and Innovation

FROM: Kevin Howell
Chancellor

SUBJECT: Recommendation to continue the North Carolina Sea Grant College Program (NCSG) under Regulation 10.10.04

DATE: May 15, 2025

In response to your Memorandum dated May 14, 2025, authorization is hereby granted to forward the request to continue the North Carolina Sea Grant College Program (NCSG) to the Board of Trustees for approval.

KH/mh

cc: Susan White, Director, NC Sea Grant College Program
Genevieve Garland, Senior Associate Vice Chancellor
Nadine Wong, Assistant Vice Chancellor, Research Infrastructure
Rita Henry, Centers and Institutes Specialist

Request for Authorization to Establish
Master (M.R.) in Agricultural Business Management
CIP 01.0102
North Carolina State University

I. Program Highlights

- North Carolina State University (NC State) proposes the establishment of a new 30-credit hour Master in Agricultural Business Management that will be delivered both on-campus and online (asynchronously).
- Focusing on agribusiness operations and entrepreneurship, the proposed degree program will provide students with opportunities to learn through engagement with real-world agribusiness issues.
- Students enrolled in the program full-time can expect to complete it in three semesters. Thirty-eight full-time students are projected to be enrolled in the program in year 5.
- The program supports the mission of NC State by not only uniting its strength in science and technology with a commitment to excellence in a comprehensive range of disciplines, but also by promoting an integrated approach to problem solving that transforms lives.
- Graduates of the proposed Master in Agricultural Business Management will be empowered with the skills needed to contribute to the development of rural North Carolina through the acquisition of knowledge in agricultural policy, both at the state and federal level.

II. Academic Program Planning Criteria (UNC Policy 400.1)

1. Relation to Campus Distinctiveness and Mission.

Included in the mission of NC State is the university's dedication to teaching, the creation and application of knowledge, and engagement with public and private partners; its strengths in science and technology; and its promotion of an integrated approach to problem solving that transforms lives and provides leadership for social, economic, and technological development across North Carolina and the world. The proposed M.R. in Agricultural Business Management supports each component of the university's mission through its focus on science and technology, its inclusion of public and private industries, and its focus on real-world problems. The proposed program will be the only graduate degree program in the UNC System with the CIP code 01.0102. The only other credential in the UNC System with this CIP code are NC State's undergraduate certificate and B.S. in Agricultural Business Management. It is also distinct in that it will be the only graduate degree program in the UNC System with a focus on agribusiness management principles, practices, and institutions (including agribusiness analytics, agribusiness sales, agribusiness management, agribusiness marketing, and agribusiness leadership and entrepreneurship).

2. Student Demand.

Student demand for the proposed M.R. in Agricultural Business Management is demonstrated by enrollment in NC State's B.S. in Agricultural Business Management as well as surveys of these undergraduate students and undergraduate program alumni. The Department of Agricultural and Resource Economics at NC State offers a relatively large undergraduate Agricultural Business

Management program with over 550 majors. Many of these students and recent graduates have expressed strong interest in pursuing graduate study in Agricultural Business Management but were unable to find such a program in North Carolina. Surveys of current Agricultural Business Management students, alumni, and other stakeholders (e.g., 20-member Agricultural Business Management advisor board) confirm a strong demand for the proposed M.R. in Agricultural Business Management.

3. Employment Opportunities for Graduates.

Lightcast results for agribusiness positions across the country with a master's degree in Agricultural Business Management show a total of 71,428 positions in related fields in 2022, with an expected average of open positions per year of 8,135. Lightcast data also anticipates growth of available positions related to management, supervision, inspection, and purchasing between 0.95% and 7.29% over the next four years. A total of 47,273 job postings were available for positions related to the proposed degree program between April 2022 to March 2023. The Economic Development Partnership of North Carolina's (EDPNC) Q2 May 2023 survey for management positions across the state indicated a +29% average historical job change for management and supervisory positions in business fields from 2017-2022. The anticipated job growth from 2022-2027 for these positions in the state is 9.2%. The EDPNC anticipates continued growth in the agribusiness field, particularly in agritech, food, and beverage areas.

4. Impact on Access and Affordability.

Courses in the proposed M.R. in Agricultural Business Management will be offered both on campus and online, increasing the program's accessibility for both traditional learners and those who may be working professionals. The Master's in Economics at NC State is the degree program most closely related to the proposed degree program. According to the U.S. Department of Education College Scorecard, the Master's in Economics has an excellent debt-to-earnings ratio of 3.5%, which is well below the recommended 8%. It is anticipated that the proposed graduate program will have a similar ratio. The M.R. in Agricultural Business Management will require the completion of 30 credit hours at a cost of $26,549 for a full-time, in-state student. While there are no comparable programs within North Carolina, there are seven related programs at six institutions across the country. The program proposed by NC State is roughly comparable to or more affordable than programs offered by four of these institutions who are part of NC State's official peer group (Purdue University, Texas A&M University, University of Wisconsin, Michigan State University).

5. NC State is requesting tuition differential for the proposed M.R. in Agricultural Business Management.

Full-Time 2025-2026 Master's Tuition and Fees per Year (In Dollars)

Category	**Resident**	**Non-Resident**
Tuition	10,230.00	31,528.00
Tuition Differential	5,400.00	5,400.00
Mandatory Fees (Athletics, Student Activities, Health Services, Educational & Technology, Campus Security, Debt Service, ASG)	2,280.00	2,280.00
Special Fees	0.00	0.00

6. Expected Quality.

As part of the proposed M.R. in Agricultural Business Management, students will complete 10 required courses. Students will have the option to complete either a 3-credit hour research or experiential internship project. Full-time students can expect to complete the program in three semesters, though a maximum of six years will be allowed for completion.

Among the admissions requirements are an undergraduate GPA of 3.0 or better and an undergraduate degree in business, sales, agriculture, entrepreneurship, or similar field from an accredited college or university. Once admitted to the program, students will be required to maintain an average GPA of 3.0.

7. Faculty Quality and Number.

The proposed M.R. in Agricultural Business Management will have a core group of 13 faculty who will be directly responsible for the direction and implementation of the program, including two program co-directors and three new faculty members hired during the first four years of the program. Prior to the new faculty hires joining NC State, teaching responsibilities will be covered by existing faculty through teaching overload sections and/or expanding the number of sections taught by adjunct faculty.

8. Relevant Lower-level and Cognate Programs.

Currently, there are two cognate programs at the undergraduate level at NC State: 1) the undergraduate certificate in Agricultural Business Management and 2) the B.S. in Agricultural Business Management. The proposed M.R. in Agricultural Business Management will also incorporate graduate courses in subject areas offered through NC State's College of Agriculture and Life Sciences as well as the Poole College of Management.

9. Availability of Campus Resources Library, Space, etc.)

The present holdings of the libraries at NC State are adequate for the proposed program. The use of other institutional libraries is not anticipated. In addition, existing NC State facilities and technologies are adequate to house and support the proposed program from years 1 through 10.

10. Existing Programs (Number, Location, Mode of Delivery).

Within the UNC System, only NC State currently offers a degree program in Agricultural Business Management; this program is at the undergraduate level. North Carolina Agricultural and Technical State University offers an M.S. in Agricultural and Environmental Systems. As part of this degree, students can select from one of three concentrations, including Agribusiness and Food Industry Management. The program is offered on-campus and has a strong focus on science, including biotechnology, immunology, microbiology, nutrition, and physiology in poultry and livestock production. Unconditional admission to their graduate program requires an undergraduate degree in animal science or a closely related discipline that includes work with lab or farm animals. Students completing the B.S. in Agricultural Business Management at NC

State are not required to complete courses in fields of study on which the M.S. in Agricultural and Environmental Systems at North Carolina A&T is focused, which is why the NC State undergraduate program is not a feeder program for that at North Carolina A&T. NC State expects that most students who pursue the proposed M.R. in Agricultural Business Management will be alumni of its undergraduate program bearing the same title.

11. **Potential for Unnecessary Duplication.**

    The proposed M.R. in Agricultural Business Management will not duplicate any existing degree programs in the UNC System. As described in item 10, the M.S. in Agricultural and Environmental Systems offered by North Carolina A&T, while based in agriculture, has a limited range in agribusiness through a concentration. This concentration provides students with measurably less breadth and depth in business and entrepreneurship when compared to the program proposed by NC State.

12. **Feasibility of Collaborative Program**.

    NC State foresees strong potential for collaboration with other institutions that offer agribusiness or agribusiness-related programs in the form of joint course offerings. The online option for the program will facilitate these collaborative opportunities.

13. **Other Considerations.** A twenty-member Board of Directors has been established for the proposed M.R. in Agricultural Business Management and includes representatives from a number of state, regional and national entities, including Rabo AgriFinance, SAS Institute, Reynolds America Inc., the North Carolina Department of Agriculture and Consumer Services, the North Carolina Sweetpotato Commission, the North Carolina Department of Commerce, the U.S. Soybean Export Council, Bayer U.S. Crop Protection, and the U.S. Department of Agriculture.

III. Summary of Review Processes

1. **Campus Review Process and Feedback.** The proposal was reviewed by the NC State faculty (department and college committees), Administrative Board of the Graduate School (ABGS), Graduate Operations Council (GOC), Council of Deans, Chief Financial Officer, Provost, Chancellor's Cabinet, and the Chancellor. Approval and support were provided at all levels.

2. **UNC System Office Review Process and Feedback.** *[To be completed by UNC System staff prior to presenting this summary to the UNC Board of Governors.]*

IV. Recommendation

It is recommended that the Board of Trustees approve North Carolina State University's request to establish the **Master (M.R.) in Agricultural Business Management (CIP 01.0102)** effective fall 2026.

Request for Authorization to Establish
Master of Science (M.S.) in Wide Bandgap Semiconductors
CIP 14.1001
North Carolina State University

I. Program Highlights

- North Carolina State University (NC State) proposes the establishment of a new 31 credit hour Master of Science in Wide Bandgap Semiconductors (MSWBGS) that will be delivered both on-campus and online (asynchronously).
- Designed to leverage NC State's significant research successes in the cutting-edge field of semiconductor technology, the proposed program will provide students with an educational experience that is rooted in both theoretical knowledge and practical application. The MSWBGS will focus on process, materials, and devices with both in-class and practical training.
- Students enrolled in the program full-time can expect to complete it in 1.5 years, including the required summer practicum experience. Twenty-six full-time students are projected to be enrolled in the program in year 5.
- The program supports each component of NC State's mission through its interdisciplinary design, its focus on science and technology, its inclusion of public and private industries, and its focus on real-world problems. In addition, it directly contributes to the workforce development goals of initiatives such as Creating Helpful Incentives to Produce Semiconductors (CHIPS) and Commercial Leap Ahead Technologies for Wide bandgap Semiconductors (CLAWS), addressing the critical need for skilled professionals in this rapidly growing sector.
- Graduates of the proposed MSWBGS will be well-versed in ultra-wideband gap semiconductors who are ready to lead and innovate in this dynamic field.

II. Academic Program Planning Criteria (UNC Policy 400.1)

1. Relation to Campus Distinctiveness and Mission.

Included in the mission of NC State is the university's dedication to teaching, the creation and application of knowledge, and engagement with public and private partners; its commitment to excellence in a comprehensive range of disciplines; its strengths in science and technology; and its promotion of an integrated approach to problem solving that transforms lives and provides leadership for social, economic, and technological development across North Carolina and around the world. The proposed MSWBGS supports each component of the university's mission through its interdisciplinary design, its focus on science and technology, its inclusion of public and private sectors, and its focus on real-world problems.

2. Student Demand.

Student demand for the proposed MSWBGS is demonstrated by enrollment patterns in related degree programs and courses at both the undergraduate and graduate levels as well as an increase in student research interest in wide bandgap semiconductors. NC State's undergraduate enrollment in Electrical and Computer Engineering (ECE) is projected to grow from 845 students in fall 2021 to 1,069 students in fall 2025. Graduate ECE enrollment is also projected to increase from 454 to 625 students over the same period. At the course level, NC State offers a number of

opportunities for students to engage with semiconductor content and related fields, including ECE 404 (Fundamentals of Semiconductor Devices), ECE 442/538 (Integrated Circuit Technology and Fabrication), and E 298 (Impact of Semiconductors). ECE 404 consistently attracts over 60 students per term, with 67 students enrolled in fall 2024. Offering hands-on cleanroom training, ECE 442/538 received 83 applications (12 undergraduate, 71 graduate) for 32 available seats; all seats were filled. NC State's Department of Materials Science and Engineering (MSE) offers several courses related to semiconductors and advanced materials, including MSE 460/560 (Microelectronic Materials) and MSE 703 (Electrons and Materials); all have experienced an increase in enrollment over the past five years. In terms of student research, multiple ECE graduate students are conducting thesis work involving wide bandgaps semiconductor materials, with many of these projects supported by industry partnerships and federally funded research centers. As of spring 2025, 32% of MSE Ph.D. students were working with a faculty member whose research is directly aligned with wide bandgap semiconductor topics.

3. Employment Opportunities for Graduates.

A 2023 study by the Semiconductor Industry Association and the Boston Consulting Group highlights the semiconductor industry's urgent need for skilled professional, with an estimated 67,000 engineering, technician, and computer science jobs at risk of going unfilled by 2030. Engineering roles alone accounted for 27,300 positions within this gap, with 45% requiring a master's degree. Wide bandgap semiconductors represent a fast-growing subset of these roles. According to Lightcast data, the wide bandgap semiconductor industry has experienced substantial hiring activity over the past year, with 475 unique job postings contributing to a total of 2,114 postings across various platforms. The median advertised salary across all postings stood at $173,800, based on 245 job postings (52%) that included salary information. It is noteworthy to mention that salaries increased by 9.8% from July 2024 to January 2025, suggesting that companies are raising salaries to attract and retain specialized talent, particularly in engineering and semiconductor processing roles. While semiconductors are growing across the country, the expansion in North Carolina is quite remarkable. According to Inven.ai, there are many semiconductor companies in North Carolina that will be recruiting engineers with semiconductor expertise. With the expansion of Wolfspeed in North Carolina, more jobs will be available for wide bandgap semiconductor engineers. In addition, MACOM and Triad Semiconductor are also planning to increase hiring in the state.

4. Impact on Access and Affordability.

To enhance accessibility, the MSWBGS will be delivered through a hybrid model, offering theoretical courses both online and on campus while practicum courses will be conducted in-person to ensure hands-on training. The proposed program will require the completion of 31 credit hours at a cost of $30,913 for a full-time, in-state student. While there are no comparable programs in North Carolina, there are four programs at institutions outside of North Carolina that NC State would consider as potential peer programs. The program cost for the proposed MSWBGS is midway relative to these four institutions, with the University of Texas at Austin having the lowest cost at $17,238 for its M.S. in Engineering – Semiconductor Science and Engineering and UCLA Samueli having the highest cost at $42,353 for its M.S. in Engineering – Electronic Materials. It is important to highlight that a student can complete the proposed MSWBGS at an accelerated pace over 12 months at a cost of $24,799.

5. NC State is requesting tuition differential for the proposed MSWBGS.

Full-Time 2025-2026 Master's Tuition and Fees per Year (In Dollars)

Category	**Resident**	**Non-Resident**
Tuition	10,230.00	31,528.00
Tuition Differential	4,800.00	4,800.00
Mandatory Fees (Athletics, Student Activities, Health Services, Educational & Technology, Campus Security, Debt Service, ASG)	2,280.00	2,280.00
Special Fees	0.00	0.00

6. Expected Quality.

As part of the proposed MSWBGS, students will complete 13 credit hours of core courses, 6 credit hours of practicum, and 12 credit hours of either materials electives or device electives. Full-time students can expect to complete the program in 1.5 years, though a maximum of six years will be allowed for completion. Among the admissions requirements are an undergraduate GPA of 3.0 or better and a B.S. in computer science, computer engineering, electrical engineering, materials science, or a similar degree program from an accredited college or university. Once admitted to the program, students will be required to maintain an average GPA of 3.0.

7. Faculty Quality and Number.

The proposed MSWBGS will have a core group of 15 graduate faculty who will be directly responsible for the direction and implementation of the program, including three program co-directors. The core and elective courses in the proposed program can be sustained by existing faculty as most of the courses currently exist. If enrollment growth necessitates multiple sections, premium tuition will be leveraged to hire additional instructors as needed.

8. Relevant Lower-level and Cognate Programs.

The proposed program will require a solid foundation in key electrical and computer engineering concepts as well as materials science and engineering for the graduate departmental courses selected by the student.

9. Availability of Campus Resources Library, Space, etc.)

The present holdings of the libraries at NC State are adequate for the proposed program. The use of other institutional libraries is not anticipated. In addition, existing NC State facilities and technologies are adequate to house and support the proposed program for the first five years.

10. Existing Programs (Number, Location, Mode of Delivery).

Within the UNC System, both North Carolina Agricultural and Technical State University and the University of North Carolina at Charlotte offer master's degrees in electrical engineering. North Carolina A&T's M.S. in Electrical Engineering (MSEE) offers both on-campus and online delivery,

while UNC Charlotte's MSEE is offered exclusively on-campus. Despite sharing CIP codes with these programs, the proposed MSWBGS is uniquely focused on wide bandgap semiconductors, providing a specialized and targeted curriculum that sets it apart from the broader approaches of the aforementioned programs.

11. **Potential for Unnecessary Duplication.**

    The proposed MSWBGS will not duplicate any existing degree programs in the UNC System, though it is acknowledged that there are two MSEE programs where select course content may be viewed as similar or overlapping. As shared in item 10, the proposed program is uniquely focused on wideband gap semiconductors while the MSEE programs provide broad coverage of this area.

12. **Feasibility of Collaborative Program**.

    The Wide Bandgap Semiconductor faculty at NC State and North Carolina A&T collaborate extensively through the CLAWS Hub led by NC State. The CLAWS Hub is dedicated to advancing wide bandgap semiconductor technologies for both defense and civilian applications with a focus on critical areas such as electronic warfare, 5G/6G communications, sensors, and quantum technologies. Collaboration with UNC System institutions, particularly North Carolina A&T, is integral to the CLAWS mission. By leveraging the expertise of faculty and researchers in the UNC System, CLAWS drives innovation, enhances research capabilities, and supports workforce development.

13. **Other Considerations.** The CHIPS Act, along with the U.S. Departments of Commerce (DOC), Defense (DOD), and Energy (DOE), as well as the National Science Foundation, have identified a strong national need for academic degree programs in this field. As the recipient of a DOD ME Commons hub focused on wide bandgap semiconductors, NC State is uniquely positioned to develop and successfully manage such a transformative academic program. Its close proximity, strong connections, and shared goals with initiatives such as CLAWS and PowerAmerica further reinforce the university's capacity to lead in this critical area.

III. Summary of Review Processes

1. **Campus Review Process and Feedback.** The proposal was reviewed by the NC State faculty (department and college committees), Administrative Board of the Graduate School (ABGS), Graduate Operations Council (GOC), Council of Deans, Chief Financial Officer, Provost, Chancellor's Cabinet, and the Chancellor. Approval and support were provided at all levels.

2. **UNC System Office Review Process and Feedback.** *[To be completed by UNC System staff prior to presenting this summary to the UNC Board of Governors.]*

IV. Recommendation

It is recommended that the Board of Trustees approve North Carolina State University's request to establish the **Master of Science (M.S.) in Wide Bandgap Semiconductors (CIP 14.1001)** effective spring 2026.