

**UNIVERSITY SENATE**  
**Meeting Minutes**  
**February 24, 2025**

The University Senate was called to order at 3:30 p.m., in 111 Harrison Hall on Monday, February 24, 2025. Members absent: Ginny Boehme, Mastano Dzimbiri, Michael Gowins, Nya Hodge, Patrick Houlihan, David Motta, Liz Mullenix, Nelchi Prashali

1. **Call to Order and Announcements and Remarks** – Rosemary Pennington, Chair of University Senate Executive Committee
  - a. Provost can not be here, so the topic she was going to cover will have to be covered at a later date.
  - b. I have to leave a little early today and may need to turn the meeting over to Nathan French, our Chair Elect.
2. **Approval of University Senate Minutes**
  - a. University Senate Full Meeting Minutes\_02.10.2025 (Results: 50-Yes, 00-No, 02-Abstain)
3. **Consent Calendar:** The following items were received and accepted on the Consent Calendar:
  - a. Curricular Items 02.12.2025
  - b. Graduate Council Minutes 02.11.2025
  - c. LEC Meeting Minutes 02.04.2025
  - d. LEC Meeting Minutes 02.11.2025
4. **Old Business**
  - a. SR 25-10 Electrical and Computer Engineering - Master of Engineering, Beena Sukumaran, Dinesh & Ila Palival Dean of the College of Engineering & Computing - The curriculum document can be accessed at <https://nextbulletin.miamioh.edu/programadmin/> - click on 'title' and type **Electrical and Computer Engineering\*** in the Search section. Click on 'Electrical and Computer Engineering - Master of Engineering'. ***Discussion and Anticipated Vote on February 24, 2025*** - (Results: 51-Yes, 00-No, 01-Abstain)
    - i. Senator Question and Comments
      1. Senator: No questions or comments
  - b. SR 25-11 Engineering - Doctor of Philosophy, Beena Sukumaran, Dinesh & Ila Palival Dean of the College of Engineering & Computing - The curriculum document can be accessed at <https://nextbulletin.miamioh.edu/programadmin/> - click on 'title' and type **'Engineering Doctor\*'** in the Search section. Click on 'Engineering Doctor of Philosophy'. ***Discussion and Anticipated Vote on February 24, 2025*** - (Results: 36-Yes, 06-No, 09-Abstain)
    - i. Workforce Considerations for PhDs in Engineering & Computer Science
      1. Employment Trends for Computer Science PhDs - Please see graph provided in slideshow

2. Employment trends for new PhDs in Engineering - Please see graph provided in slideshow
3. Median Salaries for Engineering PhDs
  - a. Engineering
    - i. All FT Employed = 160000
    - ii. Computer Applications = 167000
    - iii. Design = 165000
    - iv. Management, sales = 180000
    - v. Professional Services = 163000
    - vi. Any R&D = 156000
    - vii. Teaching = 116000
    - viii. Other = 150000
  - b. Chemical Engineering
    - i. All FT Employed = 159000
    - ii. Computer Applications = 165000
    - iii. Design = 149000
    - iv. Management, sales = 180000
    - v. Professional Services = 139000
    - vi. Any R&D = 150000
    - vii. Teaching = 115000
    - viii. Other = 150000
  - c. Electrical and Computer Engineering
    - i. All FT Employed = 181000
    - ii. Computer Applications = 189000
    - iii. Design = 189000
    - iv. Management, sales = 200000
    - v. Professional Services = 199000
    - vi. Any R&D = 180000
    - vii. Teaching = 117000
    - viii. Other = 157000
  - d. Mechanical Engineering
    - i. All FT Employed = 150000
    - ii. Computer Applications = 149000
    - iii. Design = 157000
    - iv. Management, sales = 166000
    - v. Professional Services = 184000
    - vi. Any R&D = 146000
    - vii. Teaching = 117000
    - viii. Other = 144000
  - e. Ref: NCSES, 2023
4. Initial Median Salary for PhDs - Please see graph provided in slideshow
5. Unemployment Rate in % (NSF 2021)

- a. Engineering occupations - 1.7
  - i. Aerospace, aeronautical, astronautical engineering - 1.7
  - ii. Chemical engineering - 2.6
  - iii. Civil, architectural, sanitary engineers - S
  - iv. Electrical engineers - 0.8
  - v. Industrial engineers - D
  - vi. Mechanical engineers 2.7
  - vii. Postsecondary teacher, engineering - 0.8
  - viii. Other engineers - 2.7
- b. D = suppressed to avoid disclosure of confidential information
- c. S = suppressed for reliability; coefficient of variation exceeds publication standards.
- ii. Other Relevant Data including the Budget
  - 1. Budget for New Graduate Degree Programs - Doctor of Philosophy in Engineering
    - a. Projected Enrollment
      - i. Head-count full time
        - 1. AY25-26 - Year 1 = 3
        - 2. AY26-27 - Year 2 = 9
        - 3. AY27-28 - Year 3 = 15
        - 4. AY28-29 - Year 4 = 21
      - ii. Head-count part time
    - b. Projected Program Income
      - i. \*Tuition (paid by student or sponsor)
        - 1. AY25-26 - Year 1 = \$61,921
        - 2. AY26-27 - Year 2 = \$189,478
        - 3. AY27-28 - Year 3 = \$289,967
        - 4. AY28-29 - Year 4 = \$393,102
    - c. Expected state subsidy
      - i. Other income (if applicable, describe in narrative section below)
        - 1. AY25-26 - Year 1 = \$5,330
        - 2. AY26-27 - Year 2 = \$5,330
        - 3. AY27-28 - Year 3 = \$5,330
        - 4. AY28-29 - Year 4 = \$5,330
      - ii. \*Tuition Assumes 40% Ohio Residents & Tuition Increase of 2% Per Year)
    - d. Total Projected Program Income:
      - i. AY25-26 - Year 1 = \$67,251
      - ii. AY26-27 - Year 2 = \$194,808
      - iii. AY27-28 - Year 3 = \$295,297
      - iv. AY28-29 - Year 4 = \$398,432

## 2. Program Expenses

### a. Personnel

#### i. Faculty (e.g. tenure-track, clinical, professional)

##### 1. Full

##### 2. Part time

#### ii. Non-instruction (indicate role(s) in narrative section below)

##### 1. Full \_\_\_\_ 1 Assoc. Dean for Research, Graduate Studies, and Innovation

a. AY25-26 - Year 1 = \$17,250

b. AY26-27 - Year 2 = \$17,595

c. AY27-28 - Year 3 = \$17,947

d. AY28-29 - Year 4 = \$18,306

##### 2. Part time \_\_\_\_

#### iii. Benefits 39.5%

1. AY25-26 - Year 1 = \$6,814

2. AY26-27 - Year 2 = \$6,950

3. AY27-28 - Year 3 = \$7,089

4. AY28-29 - Year 4 = \$7,231

### b. New facilities/ building/ space renovation

i. AY25-26 - Year 1 = \$0

ii. AY26-27 - Year 2 = \$0

iii. AY27-28 - Year 3 = \$0

iv. AY28-29 - Year 4 = \$0

### c. Tuition Scholarship Support

i. AY25-26 - Year 1 = \$0

ii. AY26-27 - Year 2 = \$0

iii. AY27-28 - Year 3 = \$0

iv. AY28-29 - Year 4 = \$0

### d. Stipend Support for E&G GAs

i. AY25-26 - Year 1 = \$87,057

ii. AY26-27 - Year 2 = \$177,596

iii. AY27-28 - Year 3 = \$181,148

iv. AY28-29 - Year 4 = \$184,771

##### 1. Benefits 1.7%

a. AY25-26 - Year 1 = \$1,480

b. AY26-27 - Year 2 = \$3,019

c. AY27-28 - Year 3 = \$3,080

d. AY28-29 - Year 4 = \$3,141

### e. Additional library resources

i. AY25-26 - Year 1 = \$0

ii. AY26-27 - Year 2 = \$0

- iii. AY27-28 - Year 3 = \$0
    - iv. AY28-29 - Year 4 = \$0
  - f. Additional technology or equipment needs
    - i. AY25-26 - Year 1 = \$0
    - ii. AY26-27 - Year 2 = \$0
    - iii. AY27-28 - Year 3 = \$0
    - iv. AY28-29 - Year 4 = \$0
  - g. Waived Tuition for E&G GAs
    - i. AY25-26 - Year 1 = \$61,921
    - ii. AY26-27 - Year 2 = \$126,319
    - iii. AY27-28 - Year 3 = \$128,845
    - iv. AY28-29 - Year 4 = \$131,422
  - h. Other expenses (travel, office supplies, etc) (if applicable, describe in narrative section below)
    - i. AY25-26 - Year 1 = \$1,500
    - ii. AY26-27 - Year 2 = \$2,000
    - iii. AY27-28 - Year 3 = \$2,500
    - iv. AY28-29 - Year 4 = \$3,000
- 3. Total Projected Expense:
  - a. AY25-26 - Year 1 = \$176,022
  - b. AY26-27 - Year 2 = \$333,479
  - c. AY27-28 - Year 3 = \$340,609
  - d. AY28-29 - Year 4 = \$347,871
- 4. Net
  - a. AY25-26 - Year 1 = **(\$108,771)**
  - b. AY26-27 - Year 2 = **(\$138,671)**
  - c. AY27-28 - Year 3 = **(\$45,312)**
  - d. AY28-29 - Year 4 = **\$50,562**
- 5. Budget Narrative:
  - a. Other income is the estimated IDC (10% of the department's 15%, and 10% of the division's 20%)
  - b. We estimate 3 students in year 1; we estimate a growth of 6 students each year thereafter. Stipends for GAs are calculated at \$29,019/year (fall and spring). Tuition for in-state is \$598/hour and out-of-state is \$1475/hour. 9 hours per each fall and spring semester constitutes full-time enrollment. RA Tuition rate for Research funded cohort starting in year 3 is figured at the university max of \$10,762 based on the Category Lists and Rates for Financial Data - Budget Template FY25\_02\_06\_2025 , assuming a 2% annual increase. 3 students are charged at this tuition rate in year 3 and 6 are charged at this tuition rate in year 4.
  - c. 6 new GA lines will be provided. 3 will be added in year 1 and

the remaining 3 in year 2, with the 6 GA commitments accounting for costs in year 2 and beyond. Students in these new lines are to be funded for 2 years and then transition to external funding in years 3-5, to allow for a new cohort of students to be supported with these lines. In addition, the program will transition existing GA positions currently in CEC to prioritize doctoral students. As these are existing lines, these are not included in the FIS for the cost of the new program.

- d. 0.1 FTE for the Assoc. Dean for Graduate Studies, Research and Innovation is anticipated to support the PhD program.
- e. Stipends and salaries assume a 2% annual increase.
- f. Other expenses include estimates and other misc. program support
- g. Program will work to find new, external sources to fund master's students and grow self-pay programs.
- h. SSI is not included given the 3-year average and is Miami University practice.

iii. Graduate Degrees Awarded in CEC - Please see graph provided in slideshow

iv. Questions received on the form from Senators with presenter's responses

1. **Question:** Please clarify how many more GA lines will be allotted to the PhD program above and beyond current MA GA lines. What is the expectation for the number of GA lines that will come from faculty grants? **Response:** Thank you for your question. 6 GA lines will be allotted. Students in these new lines are to be funded for 2 years then transition to external funding in years 3-5 to allow a new cohort of students to be supported with these lines. We have 21 GA lines available that we will transition over the next four-five years to give preference to doctoral candidates. And we have an additional 6 GAs that support faculty research and are externally funded. Faculty will continue to select graduate students for assistantships as they deem appropriate to their research programs.
2. **Question:** Hi, I wanted to ask whether someone could redo the financial sheet that's on the CIM so we can look at better figures before we vote — hiring, how projected grants will fit in the mix, etc. Also, and this could be something to talk about if you come back next time — Beena alluded to this issue — What happens to the lines and this program if federal grants are cut off, or if indirect costs are no longer part of federal grants? I guess that is a big question mark for everything we do, but it seems like it would especially be worth thinking through options for temporary delay, etc, for new programs in this context. Thanks very much! **Response:** Thank you for your question. The FIS has been reworked. We apologize for the inconsistencies in the submitted version. The data were confusing and have been updated such that the

current FIS reflects the reality of the situation. For example, a total of 6 GA lines are being provided to support the creation of the doctoral program in engineering. The additional GA funding that is noted on the FIS is EXISTING GA lines that we will transition (over the next 4-5 years) to preferentially award to doctoral applicants over master's students. As such, these are not new GA lines and the cost has been removed from the new program's FIS. Furthermore, for these 6 GA lines (and not the existing lines), they were provided with the expectation that they would fund doctoral students for no more than two years, with years 3-5 funded by CEC external awards. In addition, the tuition reflected 24 hours; it has now been corrected to 18 hours (9/fall and 9/spring). As to the larger question regarding government agencies, all institutions are currently trying to get clarity on what effect the administration's decisions currently have and will have moving forward on funding. At this point, most universities are being told to stay the course and continue to write proposals; programs should not be abandoning external research efforts. However, this should also be a time for CEC to consider opportunities to partner with industry and look to more creative ways to support research efforts. As for temporary delay, this program will require that 6 lines of new GAs receive no more than two years of university support before being funded by external sources for the remainder of their degree. This two years should provide us some opportunity to continue to work on preparing government research grant submissions while we wait for more clarity.

3. **Question:** Hi, I wanted to ask whether someone could redo the financial sheet that's on the CIM so we can look at better figures before we vote — hiring, how projected grants will fit in the mix, etc. Also, and this could be something to talk about if you come back next time — Beena alluded to this issue — What happens to the lines and this program if federal grants are cut off, or if indirect costs are no longer part of federal grants? I guess that is a big question mark for everything we do, but it seems like it would especially be worth thinking through options for temporary delay, etc, for new programs in this context. Thanks very much! **Response:** Graph provided in slideshow presentation
  - a. Funded Graduate Assistants
  - b. New
  - c. Existing
  - d. CEC
4. **Question:** You listed many Ohio universities that had PhD's in a variety of E&CS fields. Your proposal, as I understand it, is for Miami to offer one PhD in E & CS with "concentrations" in various fields (i.e. ME, EE, etc). Is that what the other schools offer, or do some offer an actual PhD

in a select area (e.g PhD in Electrical Engineering)? If so, does it make a degree holder any more credible, marketable, valuable with a degree in a focused area? **Response:** Thank you for your question. Programs within the state vary. And how they are originally approved may be somewhat different from how they organically change on a campus. For instance, this proposed approach is similar to that of The University of Akron, where they have one PhD in engineering degree that is used by five departments (Biomedical, Civil, Chemical, Electrical and Computer, Mechanical). The scaffold of the degree is similar but each program offers their own coursework. While the transcript reflects the area and they have internal procedures (program codes) that allow them to admit, track and graduate students independently, they share the same CIP code and degree title which is the Doctorate of Engineering. For PhDs, the credibility, marketability and value of the degree is in the research focus and the extensive research skill sets and experience gained throughout the completion of the degree. Utilizing a central PhD degree for Engineering is not anticipated to be perceived as a less valuable offering and again, the transcripts will show the student's exact course of study.

5. **Question:** Can you quantify, or attempt to quantify, the potential increase in external funding by adding a PhD program? Clearly having less open faculty positions will increase external funding. Can you also clarify the tenure and promotion standards for faculty in CEC? Perhaps some are unfamiliar with the requirement of external funding.

**Response:** Thank you for your question. In every departmental governance document, extramural funding from competitive sources is one measure of excellence in research and scholarship. External reviewers are also asked to comment on the quality and competitive nature of the extramural funding. In the official letters that are sent to new hires, the expectation for extramural funding is also stated clearly. We can provide evidence from national surveys on what R2s in Engineering and CS generate as external funds to demonstrate what might be possible in the future. We also look at the American Society of Engineering Education data and contrasted the research funding at a university pre- and post- PhD programs in engineering. The external research expenditures was 1.34M in 2013 pre-PhD and \$8.88M in 2023 post-PhD.

6. **Question:** The tuition income estimate (from the fiscal impact statement) seems high. Do you have estimates from other R2 schools engineering PhD programs that show a similar tuition revenue?

**Response:** Thank you for your question. The tuition was incorrectly calculated at 24 hours/year. The FIS has been updated to show 18



hours/year which will satisfy full-time enrollment definition for graduate students. While universities vary, many (if not most) of our CCGS counterparts have 8-10 hours of enrollment satisfying the full-time definition.

7. **Question:** Can you provide more details on the '90% of NSF funding goes to PhD granting institutions' statistic? Seems like Miami would be considered a PhD granting institution in the eyes of NSF. NSF has specific programs for PUIs that we are not eligible for. **Response:** Thank you for your question. What every panel reviewer looks at is what each PI or co-PI asks for in their budget as resources to help them succeed with a grant. With no PhD program in place in CEC, the faculty have never been able to ask for PhD student support and instead only for Masters student support. Some of the research topics they are working on require higher level of skills and the faculty will not be competitive for such grants. Miami in Engineering and CS is not considered as PhD granting, in fact we are assessed as a Primarily Undergraduate Institution (PUI). There is only one program that is specifically for PUIs and the dollar amount associated with the program is small.
8. **Question:** You shared anecdotal evidence regarding faculty retention which could be solved with a PhD program. Can you comment on broader efforts to poll all ~60 faculty in CEC on their thoughts about the program? Was the program structure approved by the CEC faculty? What percent of faculty are pro/neutral/against a PhD program in Engineering? **Response:** Thank you for your question. Faculty who left us for other academic institutions (5 in the last two years) provided feedback during their exit interviews that they were leaving because of the lack of access to PhD students, which limited the kind of research they could do. In recruitment of new TT faculty, the most success we have had in CSE has been 50%, while the national average is 78% (Taulbee survey). Just this year, one candidate has already withdrawn during the interview process citing a lack of PhD in place as a reason... Per current practice, graduate programs in CEC are approved by the CEC Graduate Council which comprises a tenured, Graduate Level A, faculty member from each department. All CEC departments surveyed their faculty to assess support for the PhD programs. The total vote of CEC faculty was 45-14-7 (in favor-opposed-maybe/abstain). For the three engineering departments, the vote supporting the PhD in Engineering was 20-13-5. For CSE, the vote supporting the PhD in Computer Science was 25-1-2. (We did not survey PHY but believe they strongly support.)
9. **Question:** There are a lot of PhD programs in Engineering in Ohio alone. What is going to be special about our program? **Response:** Thank you for your question. Miami University's focus on the liberal arts provides

Miami with the unique opportunity to offer a doctoral degree in engineering while emphasizing the broader impacts of engineering and the student's research on the global community - SEEC ethos. We have structured the program to not only train them for academic positions using Miami's teacher-scholar model, but also for industry or non-profit jobs. Industry collaborations and industry internships could be a part of the PhD program. Furthermore, the desire to maintain the excellent quality of undergraduate education that Miami University is known for, requires a commitment to ensure that the best and brightest faculty are educating those students. Often those faculty are research-intensive faculty. By growing the program to include a PhD, CEC will be able to better recruit and retain high-calibre faculty. Furthermore, these faculty will be able to expose the undergraduates to the latest in research discovery and innovation.

10. **Question:** Speaking with faculty at other universities with low/mid ranked PhD programs, they shared that high quality student recruitment is a large stressor due to the large number of PhD programs across the country and relatively low student interest. What evidence do we have that we will be able to recruit high quality students? **Response:** Thank you for your question. It takes time to build out the reputation of a PhD program. This has not prevented Miami from having PhD programs in some departments on campus. We are asking for similar opportunities to be afforded to CEC and PHY faculty that other colleagues on campus have at the present time. The same marketing strategies we use for recruiting students to the existing PhD programs could be utilized for CEC and PHY.
11. **Question:** A recent article in the Atlantic suggested that for the next 4 years federal funding for research is likely to be much harder to come by and that many larger research intensive programs will be forced to downsize. In that light, is this the best time to be expanding our research profile? Are we setting up new assistant professors to fail under the bigger P&T expectations associated with PhD student mentorship and larger startup packages that will come from this? <https://www.theatlantic.com/health/archive/2025/02/nih-trump-university-crisis/681634/> **Response:** Thank you for your question. The points noted above speak to why we believe moving forward with the PhD offering at this time is prudent.
12. **Question:** Points 1-6 are critiqued below with questions on their merit as arguments. Overall, the senate should see not what the degree is but, at a minimum, a back-of-the-envelope calculation of cost-of-investment for a 10-year horizon for such a program with best and worst-case analysis. Here is the following:

- a. 1.CEC needs to attract and retain top-quality faculty.
  - i. - Faculty exit surveys consistently cite a lack of a PhD program as the primary reason for departure.
  - ii. - National surveys show new faculty in Engineering/Computer Science are more likely to go to PhD granting institutions.
  - iii. - Lack of PhD is a handicap to current faculty as they endeavor to meet research demands without PhD students. (See external funding data on subsequent slides.)
- b. The arguments in 1 are both anecdotal and fallacious arguments. Exit surveys suggest that those who left are seeking a different research model. Those who remain are the relevant group to survey. Argument 2 says that faculty tend to go to R1 universities - how many engineering schools are at non-R1 universities? Argument 3 states that not having a PhD is a handicap. Is there any data that shows evidence of this? For grants to NSF and NIH, the return is approximately 10%. The existence of Ph.D. increases the pool of eligible grants to apply for, but does not change the yield.
- c. Both industry and academia have a need for PhDs in Computer Science and Engineering.
  - i. Colleges of Engineering and Computer Science across the state have already established PhD programs to address this need. (See competitive review among Ohio Universities on next slide.)
  - ii. Miami stands at a competitive disadvantage by not offering PhD programming in these fields.
- d. Is there any stats on this need? I will argue that there might be spaces that currently search for Ph.D.-quality individuals. Still, I will then argue there is no data on how big is this recruitment pool, how big is the pool of new Ph.D.s emerging per year, and, most importantly to later arguments, is how big is this recruitment pool in Ohio. Academia and Faculty jobs have clear stats that show faculty are hired from the top 20% of Ph.D. granting institutions  
 (<https://www.insidehighered.com/news/2022/09/23/new-study-finds-80-faculty-trained-20-institutions>). With an emerging Ph.D. we can't expect to be in the top 80% - (note in OH, arguably OSU, Case Western, and in the top 20% (<https://academicinfluence.com/rankings/by-state/ohio/best-research-universities>) - UC is on the cusp)

- e. PhD Programs make applications for federal grants more competitive.
  - i. 90% of National Science Foundation (NSF) funding goes to PhD granting institutions, according to statistics received from NSF in Beena's primary division.
  - ii. Faculty need access to these grants if they are expected to get grants for promotion and tenure.
- f. The argument here is better stated as "Even though MU CEC is not a Ph.D. granting university, the exceptionally high expectation for faculty to research at a slightly below R1 level without R1 resources is hard". Second, "The pool of available grants is different since Miami CEC does not have the Ph.D. program." Therefore, we are not more competitive, but we have a larger pool of eligible grants to apply for. This does not result in yield.
- g. A PhD programs would allow CEC to recruit and retain top quality students
  - i. A PhD program expands support for undergraduate research and enhances the undergraduate research experience.
  - ii. 40% of CEC students work with faculty on research.
  - iii. A PhD program attracts students (especially international students) who want to attend an institution with a good reputation for education at all levels.
- h. What data, evidence, or argument can be made justifying that a Ph.D. results in enhanced undergraduate research experience? Typically, at R1s, undergraduates are mostly left in a program that is TAed by a Ph.D., and the faculty spends their time funding their research group. The 40% stat is true, but can only go down once Ph.D. students are the focus point of a research group. Finally, international recruitment due to a pathway into the country is a valid service provided to students, but the political shifts make this route questionable, ethically.
- i. Strong demand for PhDs across sectors
  - i. Gray Decision Intelligence has revealed strong demand for PhD programs from both students and employers. (See next page)
  - ii. Corporations such as P&G have expressed desire for programs that recruit and retain talent in Ohio
  - iii. The State of Ohio supports homegrown talent that is more likely to stay in-state.

- j. Where is this strong demand relative to Ph.D. degrees produced in the US? P&G has 14 jobs for AI and Fluid-focused individuals - these are very specific spaces. The only real, sustainable need for a Ph.D. in engineering is the path to academia as a faculty member (see the 20% institution above). The state may support keeping talent, but the state is not an innovative hub that actually requires people with these skills. AFRL has no careers requiring a Ph.D. (noting many of those jobs are only available for US Citizens who can attain security clearance). Arguments can be made that the recent uptick in Computer Science enrollment and interest has a need, but the recent downturn in software hiring suggests quite the opposite. Where is this demand for Ph.D. degrees coming from when a Ph.D. in engineering is a degree that focuses more on science than on engineering development?
- k. More options for advanced degrees
  - i. - Information out of the University of Akron demonstrates evidence that students are willing to pay for a (fee-paying) Master's program in anticipation of getting a GA for their PhD program.
  - ii. - A PhD program would offer undergraduate students of CEC's Cybersecurity B.S. and forthcoming expected Quantum Computing B.S. programs to have the option of continuing research started at Miami University.
- l. Quite simply, the ethical standard of an institution of higher education should not base its funding model around demand without career opportunities. I will say this is doubly true for engineering.
- m. Based on my limited analysis of the arguments presented, my question is: Why is Miami investing in a degree that will:
  - i. -cost time (on the order of decades) and money on the order of millions to raise in rank
  - ii. raise the bar for promotion and tenure
  - iii. dilute both our undergraduate education ranking (a niche category that we will no longer be in) and the undergraduate teaching focus
  - iv. add another program that faculty will need to support (with additional uncompensated time - as per the limit on workload metrics)
- n. The only argument that I feel has some validity is we are attempting to raise our profile such that when the culling in higher-ed happens (a promise for decades -

<https://youthtoday.org/2024/05/colleges-are-now-closing-at-a-pace-of-one-a-week-what-happens-to-the-students/>) we need to appear to have value in the eyes of legislators. Our value, however, is in serving "excellently" the undergraduates who come. We should double down on that instead of diluting our efforts in "revenue streams" that are in spaces of "zero-sum" financial games. I understand that administrators need to demonstrate value by making their portfolio grow on a time scale of 5 to 10 years. The faculty needs to push back on many of these short-term initiatives for growth as these are legacy decisions that should be made based on solid arguments.

**o. Response:** Please see the additional slides that are presented in the beginning as responses to the arguments above.

13. **Question:** To judge demand for the PhD it would help to get an accurate count of the number of students currently getting the MS in Computer and Electrical Engineering. There was a guess of 10-20 graduating a year, but I couldn't find the actual number anywhere. Could someone find out exactly how many students have graduated with the MS in Computer and Electrical Engineering degree each year for the last couple of years? Thanks **Response:** The graduate degrees awarded in the past 5 years in CEC was presented in the additional slides at the beginning of the presentation.
14. **Question:** At R1 institutions it is common to replace the faculty, who are now diverted to teaching in the PhD program, with the PhD students themselves teaching undergraduate classes. However, it doesn't seem that model would work as well at an undergraduate-oriented university like Miami. It was mentioned there was no need to hire new faculty, so what is the plan to make up for the fact that existing faculty will now be teaching in the PhD program (e.g., higher teaching loads, larger undergraduate classes, fewer classes offered, etc.)? **Response:** The current curriculum for the PhD does not require new courses, except XXX 850 for doctoral research, and any new courses would be shared across our Engrg and CS departments.
15. **Question:** How would access to more graduate and phd students affect opportunities for undergraduate student research? I am concerned that the preference past hires showed for phd students will mean that the professors hired on will be unwilling to work with undergraduate students at the current rates expected within the engineering school. **Response:** Undergraduate research would be enhanced with additional MS and PhD students. A tiered mentoring program that we have in so many of our departments on campus enhances the UG research experience as demonstrated by our colleagues in other departments. Dr.

Saunders, CEC Associate Dean for Graduate Studies, Research, and Innovation, would also develop a training program for graduate students on effective mentoring, which will benefit our undergraduates.

16. **Question:** How would access to more graduate and phd students affect opportunities for undergraduate student research? I am concerned that the preference past hires showed for phd students will mean that the professors hired on will be unwilling to work with undergraduate students at the current rates expected within the engineering school.

**Response:** While information is limited, there is qualitative and limited quantitative data to suggest undergraduates in research programs benefit from graduate students. While admittedly small, we were able to find some references (mostly abstracts from Engineering Education conferences) that suggest undergraduates can benefit from graduate student support in the following ways:

- i. Increased access with day-to-day help in the lab
  - ii. Increased comfort with a graduate student seen more as a peer; intimidated by faculty
  - iii. Increased feedback and daily guidance; the role of the faculty in the 'bigger picture of the research was critical'
  - iv. See first-hand what graduate school is like and what it means to be a graduate student
  - v. Career guidance/mentoring /encouragement/room to 'fail'
- b. Source - NSF REU program intentionally adding graduate students to the mentoring/training - improved undergraduate satisfaction with experience
- c. As noted - we will develop a training program and support materials for both undergraduate and graduate students and look to opportunities to develop community among them; we will focus on the social aspect as well as the research and professional aspects

17. **Question:** A couple engineering colleagues wrote me that they'd participated in a survey you'd sent out to gauge support for the degree. I figure you will include the results in the slides. **Response:** The responses are included in an earlier response. The total vote of CEC faculty was 45-14-7 (in favor-opposed-maybe/abstain). For the three engineering departments, the vote supporting the PhD in Engineering was 20-13-5. For CSE, the vote supporting the PhD in Computer Science was 25-1-2.

18. **Question:** Another colleague in engineering asked whether exit surveys or interviews have been done with recently departed faculty to assess their reasons for leaving. **Response:** Yes, that was included in an earlier response.

19. **Question:** A colleague in CAS asked whether the idea was that the PhD might help with undergraduate recruitment and whether there was evidence it might do that. **Question:** A colleague in CAS asked whether the idea was that the PhD might help with undergraduate recruitment and whether there was evidence it might do that. **Response:** The PhD could certainly help with undergraduate enrollment. Undergraduates can find themselves with more opportunities for their education and career, as PhD programs:

- a. Build prestige
- b. Offer more research opportunities
- c. Offer more networking opportunities (research collaborations with universities, industry, govt)
- d. Attract high-calibre faculty with cutting-edge research opportunities
- e. Long-term mentoring from graduate students (career guidance)
- f. Cutting-edge research incorporated into the curriculum
- g. Opportunities for professional development - attending conferences and workshops, contributing to publications, presenting research, building resume for graduate school admission or employment
- h. One data we pulled from national data is from an institution that started a PhD - in 2013 their UG enrollment was 809 (pre-PhD) and in 2023 was 1340 (post-PhD).

v. Senator Question and Comments

1. Senator: What happens to the budget if we don't get the grant funded?(A) We will get that grant funded. We have the requirement for these 6 lines. One of the things that I am doing in my role is working with Junior faculty to start off on career awards, and I am already meeting with the faculty on how to put those together. We will be really focusing on getting those initial awards, particularly those for the junior faculty. That is also one of the reasons we are keeping those numbers projected low, and that is why we have confidence in achieving this. We already have faculty supporting PhDs in other programs, and with our historic track record, and keeping the numbers low, that is why we are confident in this.
2. Senator: Given what is happening in Washington, do you expect any decrease in grants? In one of your slides you talked about how much money you are receiving in grants and research, so I was wondering if you are expecting any negative blowback from that. (A) That is very hard to predict. I was in Congress 2 weeks ago, and this is the first year that we have gone to our annual meeting that no one could give us information for certain. All they told us is that this will come down, but



you will not be affected. So with them saying that it won't be a factor, we can only look at historical numbers. The future is always unknown, so I think we need to move forward with what we think is the right thing to do.

3. Senator: I just want to clarify that there will be 12 GAs in total eventually, but some are coming from the current masters position. Is that correct?(A) Those 12 are for both PhD programs. We are tentatively say 8 for engineering and 4 for computer science. However, we will have to make changes as things come in. So, this is just roughly what we are thinking.
4. Senator: So you are expecting 6 students then?(A) 6-8 students
5. Senator: I thought you would have a lot more spent on stipends then what is showing up here?(A) What we are looking at here is your 1-3 and your 2-6, the ones that are already existing. We are not counting those. This is just taking into account the new lines.
6. Senator: Can this be updated on CIM since that is the formal record and we are supposed to be voting on this today?(A) I don't think we can edit CIM, but we can ask that it be updated.
7. Senator: If something is valuable to the University then if you include the indirect cost that would probably another 40% and could take us into a negative number, which may or may not be fair and we may decide by running the expensive more specific for us to see if this is paying for itself or that it is important enough to the university to eat the cost. There are other programs getting denied for this same reason because of the indirect cost. Let's think about that and how to figure out when indirect cost matters and when it doesn't matter?(A) Just a clarification on the terms. Indirect costs are normally things that the government, so if you have been reading from Trump he said he is going to limit the indirect cost to 15% on all grants. Different universities have different negotiations to get their indirect cost great. I think what you are referring to is the 40% tax. Most of us don't know that this happens, but the gross revenue that comes into any program gets taxed 40%, which covers the support center cost throughout the university. This FIS form comes from the state, and they don't care what our indirect rate is or what our tax rate is. We do care what that is and we do our Profit Loss statement on all of our programs every year. For the state and what we put in CIM, they don't care.
8. Senator: Comment is yes, the future is unpredictable. Do you have a general sense of how much of the grant funding comes from industry, private industry versus how much comes from the federal government?(A) We do get industry-based grants for applied research. There is an opportunity for faculty to seek out industry grants, and have

that as part of the funding. Also, we did have conversations with our neighboring industry, and P&G was one of them, and they are very supportive and would love home-grown talent. So, we do anticipate seeking out industry support for these PhD students.

9. Senator: I would think it would be natural to go to a major corp and look to them for the grant funding?(A) Yes, that is very true. The US has been hesitant about it.
10. Senator: (Doctoral students in engineering and CS at R1 institutions take 500/600-level electives in natural and mathematical sciences, either at the prompting of their advisors or because their research leads them to seek formal instruction on some topic adjacent to their field. This could be a boon or a burden to those CAS departments depending on their current circumstances, but it doesn't appear to have been discussed. How many students do you anticipate will take graduate level courses outside of engineering? And in what science and/or math areas would you expect them to enroll?(A) The impact on 5xx/6xx enrollments in other STEM department courses will be negligible. The PhD in Engineering is small, the students are in different concentration areas, and most of their courses will be in the discipline.
11. Senator: CEC says it needs no new resources but they expect to add seminar courses, which will add to faculty loads. Also, although Miami attracts decent PhD students, many require much more mentoring than our faculty did when they themselves were students at big-name R1 institutions. Will more resources be needed to account for these student requirements/needs? (A) There are no new seminar courses. They already exist for our master's programs.
12. Senator: 45/14/07 and 45/21 that is a concern for me. Can you make an educational argument for the program that lies outside for the potential for recruiting etc. What is the education mission to Miami related to this program and how will it enhance our campus and student lives?(A) If you think about the PhD program, there is already a strong culture of our undergrad students working with our faculty on research. This will allow for more tiered mentoring because now you would have PhD, Master and Undergrad students. I do think this will give us an opportunity to recruit the best and brightest in our profession.
13. Senator: In CIM you are listing 56 current faculty and then in 2 years an estimate of faculty to be added is 6. So are you asking for an additional 6 faculty members?(A) The way CIM asks the question, it says how many faculty members you anticipate hiring in the next two years. It doesn't take into count the number of faculty you will need to replace because of things like retirement. We are not requesting net new faculty positions.

14. Senator: Where I came from, the part about graduate students mentoring undergraduate students didn't really work for our discipline. Are there people in the department that have experience in this? Is this more common in engineering? (A) This is more common in engineering. I have personally done this for years. If you look at my resume, I have way more undergraduates than grads in my past. I think undergraduates are key. They actually benefit more from the grad students being in the lab with them because they feel more comfortable with them to ask questions. So in my experience, the grad students are critical and they were better off having graduate involvement then if I had been just the sole mentor in that lab.
15. Senator: I have concerns about the proposal. One being what was previously mentioned that if you are watching the news, the Trump administration seems to be attacking science technology funding, indirect cost and even though there is a pause put on it. I think that they have clearly let us know where they are going. That doesn't mean that we should obey in advance, but they are telling us where they are going. Then there is the response from our colleagues that if the federal funding is cut we would go to industry, but people have said in recent reports that AI will replace mid-level engineers, and that AI would be doing the coding. They have also said that creativity and problem solving are really the future when we have AI. Another thing to note is that the GA lines are not new; they have been reassigned from other PhD programs in CAS, including my own, which is one of the oldest degrees in writing in the country and has a placement rate of nearly 100%. So I am concerned that this is a PhD program that is not in step with the quickly changing climate, and this is a risky bet.

## 5. **New Business**

- a. CSE - Computer Science, Doctor of Philosophy, Tim Cameron, Associate Dean and Professor, Marnie Saunder, Associate Dean and Professor, and Beena Sukumaran, Dinesh & Ila Palival Dean of the College of Engineering & Computing - The curriculum document can be accessed at <https://nextbulletin.miamioh.edu/programadmin/> - click on 'title' and type **Computer Science\*** in the Search section. Click on 'Computer Science, Doctor of Philosophy'.

### ***Presentation only; Discussion and Anticipated Vote on March 10, 2025***

- i. We combined all our slides for the PhD in Engineering and Computer Science two weeks back and in our responses above to be respectful of your time. The budget for the PhD in CS is in the following slides.
- ii. Budget for New Graduate Degree Programs - Doctor of Philosophy in Computer Science
  1. Projected Enrollment
    - a. Head-count full time

- i. AY25-26 - Year 1 = 2
      - ii. AY26-27 - Year 2 = 6
      - iii. AY27-28 - Year 3 = 10
      - iv. AY28-29 - Year 4 = 14
    - b. Head-count part time
  - 2. Projected Program Income
    - a. \*Tuition (paid by student or sponsor)
      - i. AY25-26 - Year 1 =\$41,269
      - ii. AY26-27 - Year 2 = \$126,282
      - iii. AY27-28 - Year 3 = \$193,262
      - iv. AY28-29 - Year 4 = \$262,005
  - 3. Expected State subsidy
    - a. Other income (if applicable, describe in narrative section below)
      - i. AY25-26 - Year 1 = \$5,330
      - ii. AY26-27 - Year 2 = \$5,330
      - iii. AY27-28 - Year 3 = \$5,330
      - iv. AY28-29 - Year 4 = \$5,330
    - b. \*Tuition Assumes 40% Ohio Residents & Tuition Increase of 2% Per Year)
  - 4. Total Projected Program Income:
    - a. AY25-26 - Year 1 = \$46,599
    - b. AY26-27 - Year 2 = \$131,612
    - c. AY27-28 - Year 3 = \$198,592
    - d. AY28-29 - Year 4 = \$267.335
- iii. Program Expenses
- 1. Personnel
    - a. Faculty (e.g. tenure-track, clinical, professional)
      - 1. Full
      - 2. Part Time
    - ii. Non-instruction (indicate role(s) in narrative section below)
      - 1. Full \_\_\_\_ 1 Assoc. Dean for Research, Graduate Studies, and Innovation
        - a. AY25-26 - Year 1 = \$17,250
        - b. AY26-27 - Year 2 = \$17,595
        - c. AY27-28 - Year 3 = \$17,947
        - d. AY28-29 - Year 4 = \$18,306
      - 2. Part time \_\_\_\_
  - iii. Benefits 39.5%
    - 1. AY25-26 - Year 1 = \$6,814
    - 2. AY26-27 - Year 2 = \$6,950
    - 3. AY27-28 - Year 3 = \$7,089

4. AY28-29 - Year 4 = \$7,231
- b. New facilities/building/space renovation
  - i. AY25-26 - Year 1 = 0
  - ii. AY26-27 - Year 2 = 0
  - iii. AY27-28 - Year 3 = 0
  - iv. AY28-29 - Year 4 = 0
- c. Tuition Scholarship Support
  - i. AY25-26 - Year 1 = 0
  - ii. AY26-27 - Year 2 = 0
  - iii. AY27-28 - Year 3 = 0
  - iv. AY28-29 - Year 4 = 0
- d. Stipend Support for E&G Gas
  1. AY25-26 - Year 1 = \$36,720
  2. AY26-27 - Year 2 = \$74,4909
  3. AY27-28 - Year 3 = \$76,407
  4. AY28-29 - Year 4 = \$77,935
  - ii. Benefits 16.5%
    1. AY25-26 - Year 1 = \$6,059
    2. AY26-27 - Year 2 = \$12,360
    3. AY27-28 - Year 3 = \$12,607
    4. AY28-29 - Year 4 = \$12,859
- e. Additional library resources
  - i. AY25-26 - Year 1 = 0
  - ii. AY26-27 - Year 2 = 0
  - iii. AY27-28 - Year 3 = 0
  - iv. AY28-29 - Year 4 = 0
- f. Additional technology or equipment needs
  - i. AY25-26 - Year 1 = 0
  - ii. AY26-27 - Year 2 = 0
  - iii. AY27-28 - Year 3 = 0
  - iv. AY28-29 - Year 4 = 0
- g. Waived Tuition for E&G GAs
  - i. AY25-26 - Year 1 = \$41,269
  - ii. AY26-27 - Year 2 = \$84,188
  - iii. AY27-28 - Year 3 = \$85,872
  - iv. AY28-29 - Year 4 = \$87,589
- h. Other expenses (travel, office supplies, etc) (if applicable, describe in narrative section below)
  - i. AY25-26 - Year 1 = \$1,500
  - ii. AY26-27 - Year 2 = \$2,000
  - iii. AY27-28 - Year 3 = \$2,500
  - iv. AY28-29 - Year 4 = \$3,000

- i. Total Projected Expense:
      - i. AY25-26 - Year 1 = \$109,611
      - ii. AY26-27 - Year 2 = \$198,002
      - iii. AY27-28 - Year 3 = \$202,422
      - iv. AY28-29 - Year 4 = \$206,920
    - j. Net
      - i. AY25-26 - Year 1 = (\$63,013)
      - ii. AY26-27 - Year 2 = (\$66,390)
      - iii. AY27-28 - Year 3 = (\$3,830)
      - iv. AY28-29 - Year 4 = \$60,415
- iv. Budget Narrative:
  - 1. Other income is the estimated IDC (10% of the department's 15%, and 10% of the division's 20%)
  - 2. We estimate 2 students in year 1; we estimate a growth of 4 students each year thereafter. Stipends for new GAs are calculated at \$18,360/year (fall and spring). Tuition for in-state is \$598/hour and out-of-state is \$1475/hour. 9 hours each fall and spring semester constitutes full-time enrollment. RA Tuition rate for Research funded cohort starting in year 3 is figured at the university max of \$10,762 based on the Category Lists and Rates for Financial Data - Budget Template FY25\_02\_06\_2025 , assuming a 2% annual increase. 2 students are charged at this tuition rate in year 3 and 4 are charged at this tuition rate in year 4.
  - 3. 4 new GAs lines are provided; 2 will be added in year 1 and the remaining 2 in year 2, with the 4 GA commitments accounting for costs in year 2 and beyond. Students in these new lines are to be funded for 2 years and then transition to external funding in years 3-5, to allow for a new cohort of students to be supported with these lines. In addition, the program will transition existing GA positions currently in CEC to prioritize doctoral students. As these are existing lines, these are not included in the FIS for the cost of the new program.
  - 4. 0.1 FTE for the Assoc. Dean for Research, Graduate Studies, and Innovation is anticipated in support of the PhD program
  - 5. Stipends and salaries assume a 2% annual increase
  - 6. Other Expenses include estimates and other misc. program support
  - 7. Program will work to find new, external sources to fund master's students and grow self-pay programs
  - 8. Neither SSI nor Support Center Allocations are included in the table
- v. Senator Question and Comments
  - 1. Senator: Do you anticipate having to add higher level graduate seminars for the PhD and would you have enough enrollment in this?(A) No, we are not formally proposing any new courses except for the 850 courses that are required by the PhD research. As much as possible we want these students adding enrollment to our already existing courses and seminars.

2. Senator: There has been a draft from the Federal Reserve that has gotten a lot of attention on social media lately regarding software development conditions. I am curious if there are any concerns about the pipeline of students going forward. The concern is the decline in opportunities in computer science and a decline in undergrad enrollments, leading to fewer students to feed these programs. (A) My thoughts on this is that it will increase graduate enrollments because the fewer opportunities there are for bachelor's graduates they will want to get advanced skills for better job opportunities. I know that the department is staying on top of this as well, because they follow the trends too. For example, 100 years ago there were a lot of horses in America with a lot of people taking care of those horses, and when the automobiles came in those people lost their jobs but then we needed people to take care of the automobiles. So, what I am saying for Computer Science, I see new opportunities.
3. Senator: This is related to the financing, which to me is very impressive. Is that a typical way to structure these programs or is this because of resources?(A) We did follow the Biochemistry model on campus, because we have seen that it has served our students well. When we get to the critical point where we have those students, we can think about it maybe differently.
4. Senator: Looking at the stipend information I see that it is compatible with a Master stipend. Why is it different from the stipend that you are offering for the Engineering PhD?(A) I put them both ways, and that is simply whether or not we are able to recruit new students right out of their undergrad and if we are they will make the lower stipend. Once they get through the candidacy and things, they will make the higher stipend. In the example from engineering, we show that if it went fast and we get this setup for fall, the most likely chance we would have in getting students in would more than likely be in our master's programs and they would more than likely need the stipend. We do have some flexibility on how we structure that line. Right now engineering is at 25/5 and this one is at 18/4.
5. Senator: Do we have the funding in your department for that?(A) Yes, and we have some flexibility that will be as we want to have competitive levels.
6. Senator: On the updated numbers, we are in the positive but in CIM we were in the negative?(A) Those numbers in CIM were incorrect. It didn't take into account the existing lines and those commitments, plus it was also calculated at 24 hours instead of 18 hours. That is the difference you are seeing.

7. Senator: The degree is normal 5 years is that typical?(A) For engineering post bachelors 5 and post masters 3 is what is typical and CS would be the same.

6. **Adjournment**