UCC Program Review Committee
Summary of Review

Program: Electrical Engineering and Computer Science

Date of last review: AY 2014
Date of this review: AY 2020

This program includes the following degrees, minors, and certificates:

- Ph.D. in Electrical Engineering and Computer Science
- M.S. in Computer Science
- M.S. in Electrical Engineering
- Online M.S. in Electrical Engineering
- B.S. in Computer Science
- B.S. in Electrical Engineering
- Minor in Computer Science

Recommendation: This program is found to be <u>viable</u>.
See report for commendations, concerns, and recommendations.

This review was forwarded to the department chair and the college dean. Their joint response is attached.

This review was sent to the Graduate Council. Their comments are attached.

Ohio University Curriculum Committee

External/Internal Academic Program Review

Electrical Engineering & Computer Science

Armin Mikler, External Reviewer, Department Chair, Computer Science, Georgia State University

Lijing Yang, Associate Professor, School of Counseling and Higher Education

Kristine Ensign, Assistant Professor of Instruction, School of Applied Health Sciences & Wellness

Fuh-Cherng Jeng, Professor, Communication Sciences and Disorders

October 22-23, 2020

The Department of Electrical Engineering and Computer Science program underwent an external/internal program review on October 22nd and 23rd, 2020. The Academic Program Review committee was comprised of Armin Mikler, External Reviewer, Department Chair, Computer Science, Georgia State University and three internal reviewers, Lijing Yang (School of Counseling and Higher Education), Kristine Ensign (School of Applied Health Sciences & Wellness) and Fuh-Cherng Jeng (Communication Sciences and Disorders).

This report is divided into seven sections, directly organized as requested by the Ohio University Academic Program Review effort.

1. The program as a whole:

a. Is the current number and distribution of faculty sufficient to carry out the broad overall mission of the Department (Teaching; Research, Scholarship and Creative Activity; Service).

For the reported number of undergraduate (approximately 260 CS majors and 150 EE majors) and graduate students (approximately 25 CS, 25 MSEE, 122 MSEE online, and < 50 PhD), there are currently 8 Tenure Tracked (TT) and 3 instructional CS faculty and 14 TT and 2 instructional EE faculty. The current number of faculty seems sufficient for the EECS program as a whole.

However, as individual responsibilities vary, it may be appropriate to add faculty who specialize in online programs. The dual nature of the program suggests that additional instructional faculty could be added to support the online activities. The comparison with student/faculty ratio at schools like Colorado State must be taken with caution as these data are from 2006 and do not

reflect the recent spike in enrollment that has been experienced in all CS programs. The student/faculty ratio is likely to vary drastically across programs. Any ratio better than 20/1 is acceptable and clearly better than what is experienced by many CS departments at state universities.

The self-study report, however, is somewhat misleading as it reports faculty strength for EECS as a whole. Upon examination of faculty strength specific to the individual disciplines, it appears the CS program has recently lost several faculty members, leaving the department unable to take advantage of the recent demand for areas such as Artificial Intelligence and Cyber Security. This imposes limits to the growth of both the undergraduate and the graduate programs in CS. Several of the current faculty, staff, and students expressed the need for additional faculty to offer courses needed to prepare students, especially graduate students, to fulfill the educational mission.

b. Is the level of the Department's RSCA appropriate for the program given the size of the faculty and the resources available to the Department? Is the Department's level of external funding at an appropriate level?

The level of external funding is commendable, particularly given the number of graduate students in the program. All members of the school seem to contribute to the overall success. The level of RSCA reported on page 59 of the self-study seems to indicate there is a significant fluctuation in external grant activities between years. The amounts reported are certainly commendable. However, it would be interesting (and prudent) to separate the awards by area (i.e., CS vs. EE), which would facilitate a more detailed analysis of why there is such fluctuation.

It is noteworthy, though, that the generation of scholarly work by the faculty is very diverse. Again, it is difficult to discern if this is due to faculty affiliation with specific domains (CS vs. EE) or if this is the consequence of having faculty with drastically different responsibilities (or both).

c. Is the level of service, outside of teaching, appropriate for the program given its size and the role that it plays in the University and broader communities it interacts with? Is the Department able to fulfill its service mission?

Faculty are contributing to service activities at the Department, the college, and the university level. It is noteworthy that Section 6 "Service" of the self-study report is also the shortest section, which seems to indicate that the Department is not giving itself enough credit for the service activities its members are involved in. The program has established several specific positions (e.g. dedicated assessment coordinators for different aspects of the program), which is indicative of a service-active department. Professional service is not only encouraged but rewarded during the annual evaluation process.

With student advising being one of the service obligations for every faculty member, it should be noted that the bandwidth for effective advising is limited by the size of the faculty. Particularly in the CS division of the department, the potential for a drastic increase in the undergraduate enrollment may add a significant advising load for available CS faculty.

d. Does the Department have an appropriate level of financial resources, staff, physical facilities, library resources, and technology to fulfill its mission?

The Department is located on the 3rd floor Stocker Center. There is additional space in Botany research, ARC, RTEC, and the OHIO Airport. The department also has a server room with recently updated servers (within the last 2 years) and added cooling systems. There are two CS computer labs (21 workstations which are available 24 hours a day; second workstations available via virtual desktop). There are four CS labs (for example a senior design room with swipe card access). All EE labs have safety supplies such as PPE because of the equipment students use. EE has a sophomore, junior, microcontroller lab, PLC laboratory (industrial controls), senior design room with access via swipe card. There are five research aircraft (King Air C90SE, DC-3, Beechcraft Baron, Piper Saratoga, Bonanza A36).

Probationary faculty feel that financial support is sufficient (i.e. start up package). However, there is a limited research infrastructure in support of some types of research. Specifically, the department does not have any staff technicians that maintain equipment and/or facilitate experimental research.

Lab room sizes are sufficient. Class sizes are increasing in CS and pushing limits in terms of faculty and have enough lab space and computing resources. There is less need for a physical lab for computers because most students have their own computer. However, students are not required to have their own computer.

Approximately four years ago, the department lost its Laboratory Manager due to retirement. As a consequence, laboratory resources, especially materials to conduct in-class experiments have not been kept as up-to-date as they should. Undergraduate students reported defective equipment/material in the laboratory that supports the course in Electromagnetic Materials II.

Staff feels that workload, while it has increased, is manageable. Because of the loss of staff members, faculty have been doing more administrative tasks. BobcatBuy creates challenges with restrictions in purchasing and is a complicated process. BobcatBuy also results in loss of cost savings deals for software.

2. Undergraduate Program:

a. Is the Department fulfilling its service role, adequately preparing nonmajors for future coursework and/or satisfying the needs for general education?

The department offers two general education courses, EE 1014: Introduction to Electrical Engineering: Applied Science and mathematics (2AS) and CS 2300: Computer Programming in Java: Applied Science and mathematics (2AS). EE 1014 is also a required course for the EE major and has smaller enrollment. The CS course has larger enrollment. The CS course largely attracts nonmajors who may be considering CS as a major. The department has not made specific plans on how to transition to the new BRICKS general education program at this time. Based on the previous general education program, the department has been fulfilling its service role.

b. Is the program attracting majors likely to succeed in the program? Is the number of majors appropriate for the program? Is the program attracting a diverse group of students?

The number of majors is appropriate for the EE program. There has been growth in the CS program which has increased the student to faculty ratio within the CS program. Student retention rates in the department have been consistent and comparable with the college averages with a general trend of increasing retention rates 2015 to 2018.

The department is not attracting a diverse group of students based on both gender and race. While there is an understanding of the challenges of the demographics present southeastern Ohio, which is a primary recruitment focus for the program, the department's gender ratio with the students is not ideal. The department reports gender diversity in 2019 of the tenure-track faculty was 91.6% male and 8.33% female and a similar ratio among undergraduates for 2018 (88% male and 12% female). The department also reports racial diversity in 2019 to be 75% Caucasian and 25% non-Caucasian and a similar ratio among undergraduates in 2018 (80% Caucasian and 20% non-Caucasian). While there are similarities in these numbers, the department should make more efforts to recruit female and minority (non-international) faculty in order to help recruit female and minority students to the department.

c. Does the undergraduate curriculum provide majors with an adequate background to pursue discipline-related careers or graduate work following graduation?

Ninety-five percent of students have found employment within six months of graduation. Most students feel they have been provided an adequate background to pursue a career in industry or graduate work and are confident they will find employment upon graduation. Graduate school information sessions are made available to students to educate students about graduate program pathways.

d. Are the resources and the number of and distribution of faculty sufficient to support the undergraduate program?

Currently the CS faculty is not sufficient to support the undergraduate program which is largely because of recently departed faculty who have not been replaced. There appears to be enough EE faculty to support the undergraduate program. The reviewers were not provided with an independent meeting with instructional faculty and only had an independent meeting with probationary tenure track faculty. All other faculty meetings were open-forum style that had a combination of tenured, tenure-track, and instructional faculty in attendance. As such there is some limitation in being able to confirm whether resources and faculty are sufficient to support the undergraduate programs. The physical resources are sufficient for the program. Discussion about the faculty and resources is expanded upon more in section 1.a of this document.

e. Are pedagogical practices appropriate? Are program learning outcomes adequately assessed?

Pedagogical practices are appropriate. The undergraduate programs are assessed by ABET on a six year cycle with CS completing their most recent review process Fall 2019 and EE was last reviewed by ABET in 2016. The department uses a student exit survey used to evaluate the program. In 2019, 31 out of 50 students completed the exit survey. The department also uses an advisory board composed of 12 members from the CS and EE industries that reviews pedagogical practices and the assessment plan on a yearly basis. The advisory board provides action items to the department. Examples are suggested improvements provided by the advisory board include adding cybersecurity, confirming the computer language taught is current, and ensuring the technology used throughout the program is congruent (i.e. MATLab).

f. Are students able to move into discipline-related careers and/or pursue further academic work?

The program has demonstrated a high job placement rate of 95% indicating students are able to move into discipline-related careers and/or pursue further academic work. Students report confidence in the ability to secure jobs or attend graduate programs. Several students reported matriculating from the undergraduate program into the graduate programs.

3. Graduate Program:

a. Is the program attracting students likely to succeed in the program? Is the number of students appropriate for the program? Is the program attracting a diverse group of students?

There has been a slight decline in enrollment in the MSEE on-campus program but there is increasing enrollment in the online program with currently approximately 100 students. In the MSCS which is only on-campus, the enrollment is small, but sustainable.

The department utilizes relationship building with both internal and external students for recruitment to the graduate programs. The program faculty members have mainly recruited graduate students through (1) engaging BS students early on in faculty's research projects and then recruiting them directly to the PhD program; and (2) conference recruitment.

There is a selective process when admitting students to the graduate programs to ensure students who join the program are promising in their research potential.

There are PhD programs in EE and CS. Students can start the PhD program after BS or MS. The Ph.D. program was modified in 2014 to allow students to enter the Ph.D. program directly after completing an undergraduate program (direct entry Ph.D. program). The direct BS to PhD process was to increase domestic student population. The program is flexible to allow students to stop at the MS or if students were only in the MS program switch to the path to PhD.

The program is not attracting a diverse group of students which is reflected in gender, racial, nationality and residential diversity. However, the student body composition is roughly

consistent with the national trends in STEM disciplines. The program has a significant number of international students (averaging 36%), and a significant number of Ohio residents (47.5%). The online MSSE program attracted about 80% of out-of-state students and 42 minority students across the countries, which demonstrates greater diversity than on-campus programs. Among all doctoral students about 79% are international students. The female student population in the program was 14.3% in 2012 and increased to 22.7% (5/22) in 2018. The lack of diversity within students is probably related to the lack of diversity in faculty.

b. Does the graduate curriculum provide an adequate background to pursue discipline-related careers following graduation?

The program has a very high placement rate. Based on the Russ College's placement data, 95% of all students who graduated have found a job (or are attending graduate School) within six months of graduation. The graduate students we interviewed are confident they will be able to enter industry upon graduation. Faculty have a lot of industry connections for students to help them obtain discipline-related careers. While undergraduate students have adequate preparation from curriculum design and career service, it seems there is less formal career advising for graduate students.

Due to faculty shortage, some students we interviewed said they did not have enough classes to choose from and could not take any classes for a semester. There is also an issue with the topics of 6000 level classes being limited and not able to address multiple research area interests. Some students in the interview said some instructors' background is not very strong. There is also a need to integrate more practical applications into curriculum and have more group-orientated projects.

c. Does the program provide adequate mentoring and advising to students to prepare them for discipline-related careers?

Graduate students are assigned a content advisor. They receive adequate advising from engaged advisors. Students we interviewed feel they receive a lot of support and advice. Students have been able to gain valuable internship experiences during the program. Many PhD students have been mentored by faculty on their research and had high-quality publications and conference presentations. But some students report that some advisors have too many students.

d. Are the resources and the number of and distribution of faculty sufficient to support the graduate program?

There are presently 24 tenured and tenure track faculty in the School of EECS. The School lost three faculty due to retirements and resignations in 2013 and was able to hire two new Group I faculty in 2015. The current faculty to student ratio is comparable with peer institutions.

However, graduate students report there are not enough faculty in the department. This includes faculty not staying at OHIO because of load issues. Some students did not have enough classes to choose from and could not take any classes for a semester. There is also an issue with the

topics of 6000 level classes being limited and not able to address multiple research area interests. The limited number of faculty causes faculty to teach the same topics at both the MS and PhD level which detracts from students wanting to stay for the PhD program.

e. Does the program offer appropriate financial support to graduate students?

Most students (MS and PhD) are provided an assistantship to help cover the costs of the program. GA (4,500 per semester) and TA (6,500 per semester) receive standard stipends paid on 20-hour week workload and includes tuition waiver. The RAs pay depends on the faculty with minimum pay (6,500 per semester) requirement. RA stipend pay is based on seniority and is gradually increased each year. Aware stipends are not competitive, but they are limited by budget. Less TAs and GAs increase the faculty time required. Money comes from the College and the Stocker Endowment. Students report the challenges of no financial support during the summer. The self-study also reports that some students near the end of their careers receive stipends without tuition waivers.

f. Are program learning outcomes adequately assessed?

In general, the program learning outcomes have been adequately assessed. For the residential graduate programs, the learning outcomes are measured by the various examinations that are required for graduation. The graduate committees for these students are responsible for ensuring that the students demonstrate that they have met the desired learning outcomes. It is also possible to examine specific performance indicators to determine how well students are achieving learning outcomes during their graduate level coursework. The department also uses student success on the three-part comprehensive examination to determine if the program is successfully meeting the program learning outcomes.

The School Chair and graduate program chairs take appropriate measures to ensure quality. The faculty teaching evaluations are reviewed by the School Chair during the annual faculty review process. Quality issues related to online programs are discussed at the weekly meetings between the Director of Online Program and their academic partners.

Additionally, there is an advisory board composed of 12 members from the CS and EE industries that provides feedback on the program and provides action items to the department.

g. Are students able to move into discipline-related careers?

The vast majority of students who complete a Master's degree or Ph.D. from the School of EECS are able to take positions that are appropriate to the discipline. Graduates from the MS programs can move on and pursue PhD programs at other institutions. PhD students are able to obtain faculty and research lab positions. Several of their MS and Ph.D. graduates have had very successful careers in the discipline. Most recent graduates that have been highlighted include Heibo He (PDH EE, 2006) who is an IEEE Fellow and Pengei Duan (PhD EECS, 2019) who was hired as a lead GPS engineer at Tesla Motors.

h. For doctoral programs, questions related to D.III of
http://regents.ohio.gov/rgp/pdfs/RACGS%20Guidelines%20Approved%20102403.pdf

Many PhD students have been mentored by faculty on their research and had high-quality publications and conference presentations. But some students did not have enough classes to choose from and could not take any classes for a semester. There is also an issue with the topics of 6000 level classes being limited and not able to address multiple research area interests.

4. Areas of concern.

The committee has identified the following areas of concern:
- The small size of faculty is potentially a concern, particularly in the division of Computer Science. Lack of faculty (and their corresponding varied expertise), limits the department's ability to offer sufficiently many and diverse graduate classes. Students have reported that the majority of graduate CS courses are ML related, but there are few other advanced topics courses available. Recent CS fields of cybersecurity, data science, and AI may only receive cursory coverage and the department may face difficulty fulfilling the mission of EECS education.
- Related to the relatively small size of the faculty is the issue of faculty diversity. The committee suggests to explore pathways to diversify the faculty by adding women, minorities, and faculty with different ethnic backgrounds. To this end, it is imperative for the department to develop a plan for Broader Participation in Computing (BPC). Not only is such a plan required by the National Science Foundation (NSF) for proposals that fall into the medium and large grant category, but the development of such a plan can help explore different strategies to diversify the program in general.
- The committee noted that there is no formal mentoring program for junior faculty. In spite of an expressed satisfaction with access to ad-hoc mentoring from senior faculty, the committee feels that it is critical to establish more formal approaches to mentoring, possible by members of the OU community outside the department.
- The funding levels for GAs and TAs are too low compared to other institutions. The low funding levels creates difficulties with recruiting graduate students in the Department. Student funding for GAs and TAs is usually 9 months. The lack of summer funding also adversely affects student recruitment. There is particular strain on international students who do not receive summer funding.
- International students dominate the PhD programs in the Department. Domestic student recruitment is vital to more recent changes in grant funding. International students also do not address the general lack of diversity within the Department.
- Two lab managers were recently retired and have not been replaced. As a result, the lab management tasks have been shifted to faculty members. Such a shift results in more strain on faculty loads and can decrease the RSCA performance of the Department.

5. Recommendations.

The committee recommends the following:

- As the Department has recently lost three faculty members, replacing at least one faculty position with emphasis in the areas of AI, cyber-security, or data science is of paramount importance. This has been brought up by faculty, staff, and students at different levels. The committee highly recommends at least one new hire in one of these areas.
- The funding levels for GAs and TAs in this department should be raised to increase its competitiveness with other institutions.
- Some equipment in the student labs are aging and defective. The equipment should be evaluated and replaced on a regular basis.
- Hire a lab manager, at least part time, to alleviate faculty loads and support the RSCA performance of this Department.

6. Commendations.

The committee commends the Department for the following:
- Faculty Dedication and Commitment: The committee was impressed with the high-level of engagement and dedication of the faculty who essentially volunteer their time to assure positive student outcomes and productive research agendas. This level of commitment demonstrated by faculty is impressive and demonstrates the importance of the EECS program in the development of Ohio University.
- The EECS department has a long tradition of excellence in RSCA. During the past seven years, the Department has successfully brought in approximately $5 millions each year from external funding agents and has published 232 scientific papers. Such accomplishments make the Department one of the top academic units at Ohio University.
- The Department's Avionics Engineering Center was established in the 1960's and has a solid record in academic research.The Department currently has six aircrafts that are dedicated for research purposes. Faculty in the Department collaborate with faculty in MIT and Princenton in the Joint University Program where faculty and students meet quarterly to present results of their research. Those events have enhanced the visibility and reputation of the Department and Ohio University in general.
- Responsiveness to Student Needs: During the pandemic, the Department developed nearly 100 "virtual" desktops, allowing students to access the computer hardware and software remotely and to perform a variety of tasks in a virtual format. In order for students to be able to perform lab assignments at home, the Department purchased circuit breadboards and electronic components and mailed them to students. Students expressed thankfulness for the accommodations that the Department has made for them.

7. Overall judgment: Is the program viable as a whole?

The review committee found the undergraduate and graduate programs in the Department of Electrical Engineering and Computer Science to be **viable**, despite the areas of concerns as described above.

**School of Electrical Engineering
& Computer Science**
Stocker Center 329
Athens OH 45701-2979

T: 740.593.1568
F: 740.593.0007
http://www.ohio.edu/eecs/

Russ College of Engineering
and Technology

Date: November 19ᵗʰ, 2020
To: Dr. Barbel Such, Chair, University Curriculum Committee Academic Program
Review Committee
From: David Juedes, Chair, School of Electrical Engineering and Computer Science
Subject: 14 Day Response, 7 year review for the School of Electrical Engineering and
Computer Science
CC: Dean Mei Wei, Dean of the Russ College of Engineering and Technology

To Whom It May Concern:

I am writing this memo as my official response to the report relating to the 7 year review for the
School of Electrical Engineering and Computer Science that I received on November 5ᵗʰ, 2020.   I
have reviewed the report prepared by Professors Lijing Yang, Kristine Ensign, Fuh-Cherng Jeng
and the external reviewer, Professor Armin Mikler from Georgia State University.   I wish to thank
the reviewers for their efforts given the highly unusual circumstances (i.e., the current COVID-19
pandemic) of this review.   I agree with the overall judgment that all the programs supported by
the School of Electrical Engineering and Computer Science are **viableⁱ**.   The School appreciates
the commendations mentioned (page 9) in report and will work Dean Mei Wei on the
recommendations (page 8-9) provided in the report.   However, I believe that several statements
in the report require clarifying responses.   I have discussed the report with Dean Wei, and Dean
Wei agrees with the statements made in this 14 day response.   Dean Wei will not be providing a
separate response letter.

The clarifying responses to the statements in question from the report are provided below.

1. Page 3, paragraph 4.   The report states "*Approximately four years ago, the department
    lost its Laboratory Manager due to retirement. As a consequence, laboratory resources,
    especially materials to conduct in-class experiments have not been kept as up-to-date as
    they should. Undergraduate students reported defective equipment/material in the
    laboratory that supports the course in Electromagnetic Materials II.*"   This statement is
    demonstrably incorrect.   While the School of EECS's electrical engineering laboratory
    coordinator (Timothy Bambeck) did retire approximately 4 years ago, that position was
    filled (by Jared Schlicher) within months of the prior lab coordinator's retirement.   Our

David Juedes – Chair – School of Electrical Engineering and Computer Science
330 Stocker Center, Ohio University, Athens OH 45701 - Phone: 740-593-1566 - Fax: 740-593-0007
Email: juedes@ohio.edu

current electrical engineering laboratory coordinator works with faculty to keep laboratory experiments/material up to date. To our knowledge, there is no defective equipment/material in any of our labs. Indeed, the School of EECS invested significant funds to purchase new equipment (e.g., oscilloscopes priced $500 -- $1000 each) for all our electrical engineering labs since the previous laboratory coordinator retired. The instructor (Dr. Frank van Graas) of EE 3214 (Electromagnetic Materials II) disputes that there were any defective equipment or material in that lab.

2. Page 4, paragraph 4. "*Currently the CS faculty is not sufficient to support the undergraduate program which is largely because of recently departed faculty who have not been replaced. There appears to be enough EE faculty to support the undergraduate program.*" The statement that the "CS faculty is not sufficient" to support the undergraduate program is probably too strong of a statement. While the recent loss of two computer science faculty in an already small program makes covering courses a challenge, we have been able to cover all the computing courses necessary for our students to make adequate progress towards graduation. Hence, we believe that the sentence could be more accurately be replaced with "The current number of Computer Science faculty makes course coverage problematic." We agree with the related recommendation in the report (top bullet on page 9) that faculty losses should be replaced. We will work with Dean Wei to make sure that programs are adequately staffed with faculty.

3. Page 7, concern 2. "*Related to the relatively small size of the faculty is the issue of faculty diversity. The committee suggests to explore pathways to diversify the faculty by adding women, minorities, and faculty with different ethnic backgrounds. To this end, it is imperative for the department to develop a plan for Broader Participation in Computing (BPC). Not only is such a plan required by the National Science Foundation (NSF) for proposals that fall into the medium and large grant category, but the development of such a plan can help explore different strategies to diversify the program in general.*" We are making efforts to maintain and increase diversity among our faculty, staff, and students. Prior to the site visit, the School of EECS created a "Recruitment and Diversity" committee that has been tasked with developing a Broadening Participation in Computing (BPC) plan for the School. The Chair of the School attended a Broadening Participation in Computing workshop that was sponsored by the National Science Foundation during the summer and wrote an initial draft of a BPC plan for the School. We expect to complete the BPC plan this semester.

4. Page 7, final area of concern. "*Two lab managers were recently retired and have not been replaced. As a result, the lab management tasks have been shifted to faculty members. Such a shift results in more strain on faculty loads and can decrease the RSCA performance of the Department.*" This statement is partially incorrect. As mentioned in response 1, one lab coordinator retired about 4 years ago but was replaced. We also had a Computer Science system administrator (John Tysko) retire in 2020. The workload

David Juedes – Chair – School of Electrical Engineering and Computer Science
330 Stocker Center, Ohio University, Athens OH 45701 - Phone: 740-593-1566 - Fax: 740-593-0007
Email: juedes@ohio.edu

of the retired system administrator is being covered, part time, by an appropriately qualified research staff member (Carl Hawes). We are presently working with Dean Wei to determine how the loss of the Computer Science system administrator will be fully replaced.

5. Page 9, recommendation bullet point 3. "*Some equipment in the student labs are aging and defective. The equipment should be evaluated and replaced on a regular basis.*" We disagree with this statement. All EECS laboratory equipment is replaced on a regular schedule, and much of the standard equipment (oscilloscopes, etc.) have been replaced within the last 3-4 years. Our laboratory coordinator and his student employees regularly test and calibrate equipment associated with all electrical engineering and computer science labs.

6. Page 9, recommendation bullet point 4. "*Hire a lab manager, at least part time, to alleviate faculty loads and support the RSCA performance of this Department.*" The assertion that the School of EECS does not have laboratory coordinator is demonstrably incorrect.

To conclude, we thank the review committee for its work during these incredibly difficult circumstances.

David W. Juedes

David W. Juedes, Ph.D., and Professor
Chair, School of Electrical Engineering and Computer Science

---

[i] The School supports ABET accredited undergraduate programs in Electrical Engineering and Computer Science, Master of Science degree programs in Computer Science and Electrical Engineering, and a Doctor of Philosophy degree program in Electrical Engineering and Computer Science.

David Juedes – Chair – School of Electrical Engineering and Computer Science
330 Stocker Center, Ohio University, Athens OH 45701 - Phone: 740-593-1566 - Fax: 740-593-0007
Email: juedes@ohio.edu

Hello Barbel and all,

The January meeting of Grad Council went on Qualtrics for vote and discussion because the power outage happened at the scheduled meeting time. I forwarded the following comments to the GC members for approval and received unanimous votes as illustrated by the attached picture. So I put them here for our discussion on Feb 5.
Lijing

******

The subcommittee of "Program Review" have reviewed the two program reports from Electronic Engineering and Computer Science (EECS) and School of Applied Health Sciences and Wellness (AHSW). Here is the summary of our comments:

*****

EECS:

The response letter from EECS department chair ,with consultant with the Dean, clarified many issues that were listed as areas of concerns in the report. Our subcommittee found the clarifications helpful but recommended the following issues to be further highlighted and fully addressed:
1. We recommend the EECS program address the low stipend and unequal pay issues of graduate/teaching assistants. The current stipend GA (4,500 per semester) and TA (6,500 per semester) is neither helpful for a top-notch program to compete for the best students nor aligned with the university's statement of diversity. Students, especially those from non-privileged family background, need more stipend to be able to successfully complete the degree. Additionally, the stipend of GA and TA are lower than some RAs (whose pay depends on faculty research funding), which may have implications on inequity among students in the same department.

2. We share the same concerns over the faculty replacement issues and recommend EECS program replace at least one faculty to not only offer enough, quality courses but also help retain graduate and undergraduate students.

3. We recommend EECS program also use the faculty replacement opportunity as mentioned in #2 to make efforts to increase the diversity of faculty and recruit more female and minority faculty.

****

(comments referring to AHSW deleted from this document)

Q3 - After reviewing the Program Reviews sent via email and the Committee's recommendations for FEEDBACK to the UCC Program Review Committee below, please indicate whether you support the Committee's recommendations (and provide any comments you have regarding the comments, recommendations, or Program Reviews). Program Review Committee Comments and Recommendations:
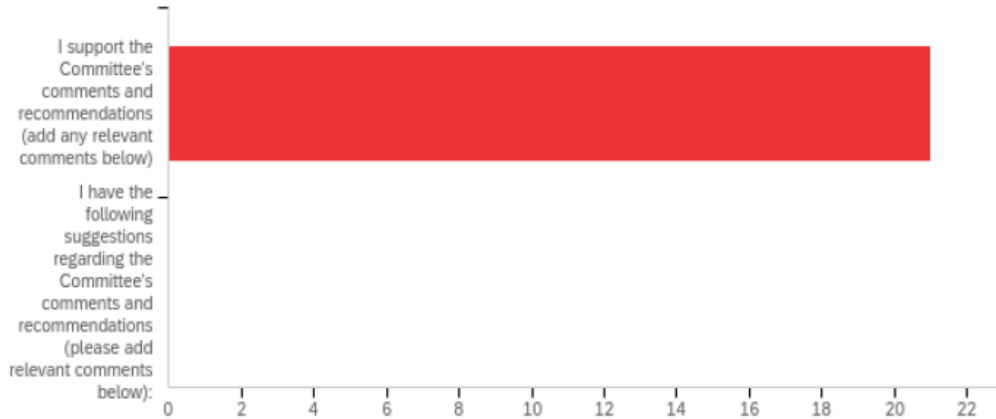
#	Answer	%	Count
1	I support the Committee's comments and recommendations (add any relevant comments below)	100.00%	21
2	I have the following suggestions regarding the Committee's comments and recommendations (please add relevant comments below):	0.00%	0
	Total	100%	21

Lijing Yang, PhD,
Associate Professor, Higher Education and Student Affairs
Ohio University
The Patton College of Education
Department of Counseling and Higher Education
McCracken Hall 432N
Athens, Ohio 45701
Office: (740) 597-1930
Email: yangl@ohio.edu

**Russ College of Engineering
and Technology**

Date: February 28th, 2021
To: Dr. Barbel Such, Chair, University Curriculum Committee Academic Program
Review Committee
From: David Juedes, Chair, School of Electrical Engineering and Computer Science
Subject: Graduate Council Review; 7 year review for the School of EECS
CC: Dean Mei Wei, Dean of the Russ College of Engineering and Technology

To Whom It May Concern:

I am writing this memo to address additional comments and concerns regarding the School of
EECS's 7 year review after the review by the Graduate Council.   These comments were relayed
to the School on January 29th, 2021. I have spoken with Dean Wei about these concerns, and she
concurs with my responses.   Dean Wei will not be submitting a separate letter.   I address each
concern raised by members of the Graduate Council below.

1. *Concern #1: We recommend the EECS program address the low stipend and unequal pay issues of
   graduate/teaching assistants. The current stipend GA (4,500 per semester) and TA (6,500 per
   semester) is neither helpful for a top-notch program to compete for the best students nor aligned
   with the university's statement of diversity. Students, especially those from non-privileged family
   background, need more stipend to be able to successfully complete the degree. Additionally, the
   stipend of GA and TA are lower than some RAs (whose pay depends on faculty research funding),
   which may have implications on inequity among students in the same department.*
2. Response: The School has already made efforts to address the stipend levels. For instance, the
   School of EECS did not use the GA level of funding ($4,500) for teaching assistants during the 20-
   21 fiscal year.   We do not plan to use this level of funding in the future.   We have also increased
   our level of funding for students paid on (Stocker RA's) fellowships from $7,000 per semester to
   $8,000 per semester.   We will continue to work with the College on issues related to funding
   levels for graduate students in the future.
3. *Concern #2: We share the same concerns over the faculty replacement issues and recommend
   EECS program replace at least one faculty to not only offer enough, quality courses but also help
   retain graduate and undergraduate students.*
4. Response: We share the concerns related to faculty replacement.   Because Computer Science is
   currently the most popular undergraduate major in the Russ College of Engineering and

---

David Juedes – Chair – School of Electrical Engineering and Computer Science
330 Stocker Center, Ohio University, Athens OH 45701 - Phone: 740-593-1566 - Fax: 740-593-0007
Email: juedes@ohio.edu

Technology[1], we expect the College and University to make significant investments in hiring new Computer Science faculty, with an eye on replacing those faculty that have been lost due to resignations and retirements.   However, we expect that, due to the COVID-19 pandemic and associated financial difficulties at the institution, that any investments in faculty resources will be delayed.

5. *Concern #3: We recommend EECS program also use the faculty replacement opportunity as mentioned in #2 to make efforts to increase the diversity of faculty and recruit more female and minority faculty.*
6. Response: The School of EECS is committed to building a diverse faculty and will make every effort to recruit, hire, and retain a diverse group of faculty members.

To conclude, we thank, again, the review committee and the Graduate Council for their work during these incredibly difficult circumstances.

Best Regards,

David W. Juedes, Ph.D., and Professor
Chair,   School of Electrical Engineering and Computer Science

---

[1] For 2021-22, roughly 30% of all applications and 27% of all admitted students to the College were Computer Science majors.

David Juedes – Chair – School of Electrical Engineering and Computer Science
330 Stocker Center, Ohio University, Athens OH 45701 - Phone: 740-593-1566 - Fax: 740-593-0007
Email: juedes@ohio.edu