

PROGRAM REVIEW IMPLEMENTATION PLAN PROGRESS REPORT 2018-2019 Natural Resources and Environmental Science BS Program

RECOMMENDATIONS

1. Student recruitment into the NRES program has been an ongoing focus.

Assessment Method: We used enrollment and graduation data over the past ten years to determine enrollment trends. The enrollment and graduate decadal record is in Figure 1.

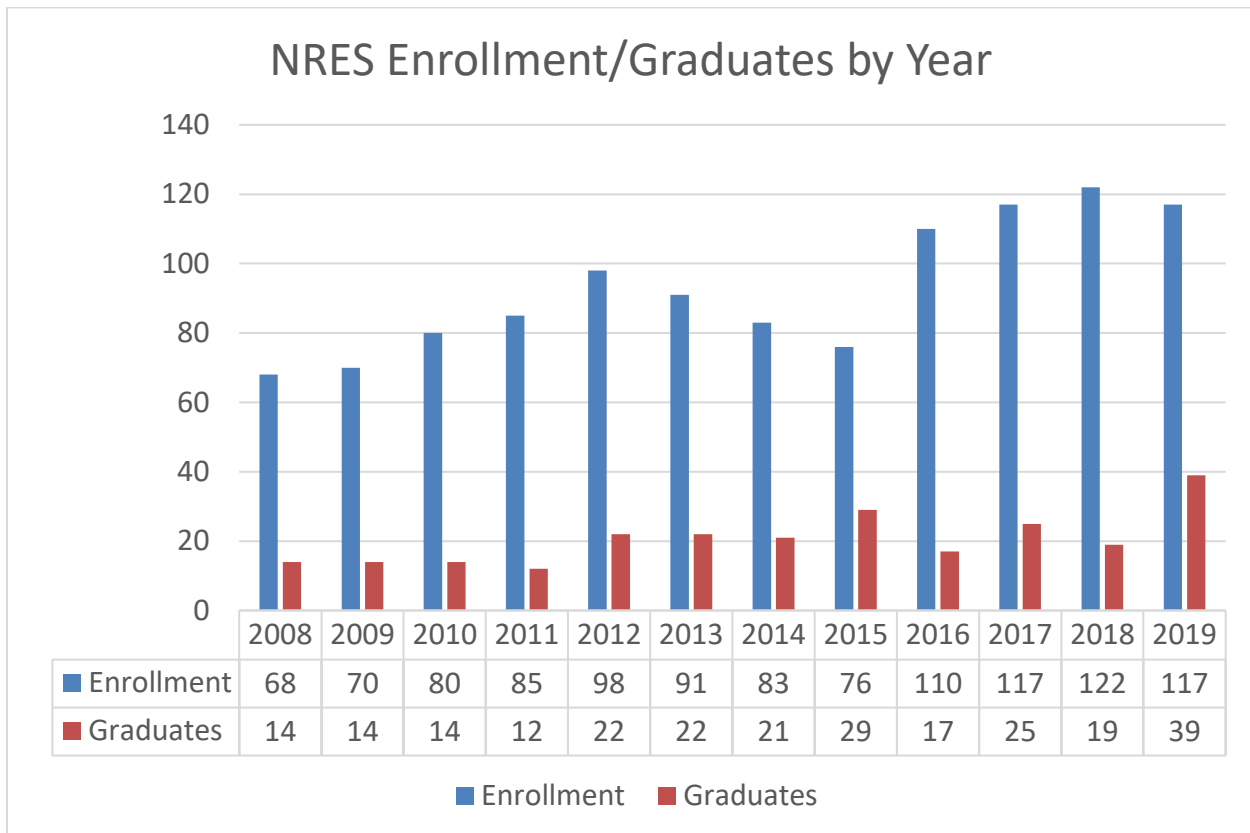


Figure 1: NRES Enrollment and Graduation since 2008. *Data provided by Jackie McCuddy on September 25, 2019.

Results: The program had the highest number of enrolled students in the past decade last year, with generally increasing numbers over the past four years. Current enrollment is slightly lower than this time last year, following the largest graduating class (38) in program history. The number of students graduating is somewhat more dynamic, averaging 21 students per year over the past 12 years, and 26 students per year for the past five years, the latter suggesting an upward trend that mirrors trends in enrollment.

Analysis: While it is difficult to pinpoint the specific reasons for the current historically high enrollment and graduation rates, there are likely several factors at play. We hired an Academic Coordinator (AC) in 2011 who identified and implemented several new approaches to recruitment and retention. For example, we now have a plan for students to transfer from the Environmental Science and Technology (EST) program at Bluegrass Community and Technical College (BCTC) to UK, and a commensurate increase in the number of students we recruit from BCTC. Changes in the Center for Student Success, with the addition of Wayne Centers and Seth Riker in the fall 2015, is likely also helping with

recruitment. The trends we are noting, especially in transfers to the program, suggest that many of our students are coming to NRES from majors in the Colleges of Engineering and Arts and Sciences, as well as from other majors within CAFE, mostly from the Department of Animal and Food Sciences. There is also some evidence that the relatively new B.A. in Environmental and Sustainability Studies (ENS) in the College of Arts and Sciences has increased awareness of “environmental” programs at UK that in a few instances has attracted students to UK who, after arriving on campus, switched to NRES. Last year we predicted a higher number of graduates starting in 2018-2019, reflecting the increase in enrollment, and that prediction was borne out. Indeed, we had so many graduates in 2018 that we offered a second section of NRE 471, Senior Problem in Natural Resources, the capstone course.

Ongoing Improvement Actions: For now, we intend to continue as we have been, as current enrollment is nearing capacity for the NRES program with its emphasis on experiential learning and commitment to faculty advising. Maintaining student numbers entails continued efforts to recruit first-year students during CAFE recruiting events coupled with on-campus recruiting to provide a “soft landing” for students considering different majors.

2. The external program review (April 2014) recommended improvements to office space used by the NRES Academic Coordinator (AC), as well as additional staff support for the NRES program.

Assessment Method: Evaluation of the adequacy of office space and support staff.

Results: The NRES Academic Coordinator left the program in January 2019 for a new position. The position was open for a few months, and we hired a new AC who started on August 1, 2019. Office space for the NRES AC was provided in the Equine Suite on the second floor of the Agriculture Science North building in early summer of 2015. The Department of Forestry and Natural Resources (FNR) continues to provide storage space in the TP Cooper building for NRES program use, and NRES students share a student lounge with Forestry students in the basement of TP Cooper, including access to printing. The NRES program has not received any direct additional staff support since the periodic program review. However, support through the Center for Student Success, including budget support from Deb Ramey and help with student management and course enrollment, have been essential and adequate. The program also relies on 2-3 undergraduate students working 5-10 hours/week writing the bi-annual NRES newsletter and supporting other program needs, such as helping staff events, student recruiting, and attending NRES Steering Committee meetings to provide insights from a student perspective.

Analysis: The new NRES AC office space is working. Staff support from the Center for Student Success in tracking of budgets and purchases plus paid student assistants are together accomplishing our needs for staff support. We have sufficient budgetary capacity to pay for the 2-3 NRES Student Assistants, as well as 2-3 Part-Time Instructors, though much of this capacity is funded through student tuition monies for the Robinson Forest field experience course and, more recently, summer tuition for student internship/research credits.

Ongoing Improvement Actions: Our space is working. The additional storage space in TP Cooper is a necessary addition to NRES program needs, and very much appreciated. For now, our need for staff support is effectively fulfilled through staff in the Center for Student Success.

3. There is an ongoing need for recruitment and retention of faculty to the NRES program. This currently

occurs in two ways: when new faculty are hired with potential to contribute to the NRES program, making that connection explicit in the hiring process; and the recruitment and retention of faculty once they arrive on campus.

Assessment Method: Measured by the number of faculty who are dedicated to the NRES program by serving on the NRES Steering Committee (NRES SC) and/or advising of NRES students.

Table 1: The number of NRES Steering Committee members and advisors for the past four years.

	NRES Steering Committee	Advisers
2018-2019	13 ¹	11 ⁴
2017-2018	13 ¹	9 ⁵
2016-2017	9 ²	9 ⁶
2015-2016	9 ²	9 ⁷
2014-2015	8 ³	9 ⁸

1. SC membership 2017-2018: FNR, 3 faculty, 1 staff; LA, 2 faculty; PSS, 3 faculty, Ag Econ, 1 faculty, Earth and Environmental Science, 1 faculty; Geography, 1 faculty; Alum, 1.
2. SC membership 2015-2017: FNR, 2 faculty, 1 staff; LA, 2 faculty; PSS, 2 faculty; AgEcon, 1 faculty; Earth and Environmental Science, 1 faculty
3. SC membership 2014-2015: FNR, 2 faculty, 1 staff; LA, 1 faculty; BAE, 1 faculty; PSS, 2 faculty; AgEcon, 1; EES, 1 faculty.
4. Advisors 2018-2019: Forestry 5; LA 2, PSS 4, AgEcon, 1; Earth and Environmental Science, 1.
5. Advisors 2017-2018: Forestry 4; LA 2; PSS 3; AgEcon, 1; Earth and Environmental Science, 1. Will add one additional FNR advisor and one additional PSS advisor in January 2019.
6. Advisors 2016-2017: Forestry 4; LA 2; PSS 3; AgEcon, 1
7. Advisors 2015-2016: Forestry 3; LA 2; PSS 3; AgEcon, 1
8. Advisors 2014-2015: Forestry 3; LA 1; PSS 3; AgEcon, 1; BAE, 1

Results: Membership of the NRES SC is made up of the Chair (Mary Arthur, FNR), the DUS (Brian Lee, LA; his move to the ADF role will vacate this important leadership position), and 11 additional members including an alum. Most of these faculty teach one or more of the major required and/or guided elective courses and advise students. Additional faculty teach key courses for the NRES program; there are also faculty who neither teach NRES courses nor serve on the NRES SC, but advise students (Mike Lacki, FNR; Mark Coyne, Plant and Soil Sciences). The number of SC faculty has generally been in a relative steady state. It is the task of the NRES SC Chair, with support from the Associate Dean of Instruction, to identify new SC members and to cultivate future leaders. The current NRES SC Chair, Mary Arthur, has served in this role for more than 10 years; starting in January 2020 Chris Matocha, in PSS, will step into this role. With Brian Lee stepping down we will be short both a DUS and advisor.

Analysis: In last year's implementation plan, we stated that Mary Arthur would be stepping down from the role of NRES SC Chair no later than June 30, 2019; though later than intended, the Chair role will pass to Chris Matocha on January 1, 2020. Brian Lee accepted role of DUS with the agreement to reduce his teaching DOE for two years; however, his recent acceptance of the ADF role means he will be stepping away from DUS, advising and important NRES teaching roles with no clear pathway to replace these efforts. Despite our success in recruiting new faculty to the NRES SC, the need to develop new leadership remains a challenge. In addition, as our student numbers are currently high, we need to either attract new advisors to help carry the advising load, and/or each advisor will need to take on more advisees. The latter option, taking on more advisees, is not realistic for many of our advisors who also advise for their home departments or are otherwise stretched for time. The NRES AC provides support for advising by maintaining program information, supporting students in finding appropriate

internship/research and education abroad opportunities, and providing initial advising for students entering the program. The NRES program has always been and is committed to a faculty advising model because we believe it gives students essential contact with at least one faculty member who knows them well outside of a classroom setting.

Ongoing Improvement Actions: The NRES program relies heavily on the Chairs of the affiliated departments and the Dean of CAFE to identify new faculty hires with an expectation of contributing to NRES, and whose positions are then explicitly connected to the NRES program for teaching, NRES SC service and leadership, and/or academic advising. From the program perspective, we need to maintain strong communication with Chairs of the affiliated departments, the Dean, and Associate Dean of Instruction when departmental hiring discussions occur and candidate decisions are being made. The challenge of developing faculty leadership within the NRES has resulted in long terms for each of our 4-5 NRES SC Chairs over the past 24 years (past chairs have come from the Departments of Rural Sociology, Plant and Soil Sciences, Agricultural Economics, and most recently, FNR). For example, the current NRES SC Chair has served in that role since 2009. Such long tenures in the role can make it less attractive to faculty who might otherwise consider stepping in. Similarly, it can be difficult to identify a faculty member to serve as NRES DUS. The Department of Plant and Soil Sciences has traditionally been the home department of the NRES DUS until Brian Lee, in Landscape Architecture, stepped into the role on July 1, 2018. In addition to these two leadership positions, faculty on the NRES SC also serve in other roles, including providing oversight of the Internship Program and Annual Internship Forum (Jack Schieffer, Department of Agricultural Economics), leading assessment efforts (Dave McNear has been leading this effort), and oversight of the NRES Summer Camp at Robinson Forest (Chris Barton, FNR, has done this for the past 11 years or so, with support from the NRES AC for the past 7 years), as well as the NRES Costa Rica field course (taught by Rob Paratley (6 yr.) and Steven Price (5 yr.), both in FNR). Recruitment into each of these roles has been organic, with faculty stepping up to various roles as they see a need they can fill. This has been workable throughout the history of the program, but has also depended upon strong support from Chairs of affiliated departments, as well as a commitment from the Dean of CAFE to hire new faculty with expectations for contributions to the NRES program. Since faculty serving NRES are doing so largely out of self-identified and self-driven interest in and commitment to the program, there is a continual need to find ways to further incentivize, nurture, and support those interests and commitments from faculty. The recent development of an MOU between the NRES program and the affiliated departments (FNR, PSS, LA, and AEC) may help to provide a clear vehicle for maintaining institutional memory regarding departmental commitments to supporting this important inter-disciplinary program. However, it appears that CAFÉ administration intend to continue to rely on the good will of faculty willing to do the work of keeping this important and successful program afloat.

- 4. We encourage NRES students to study abroad, as a semester abroad, with the NRES summer camp in Costa Rica, or through other opportunities. The Costa Rica summer camp option provides a necessary alleviation of a bottleneck for students for program completion, since the Robinson Forest course structure in some years cannot support the full number of students needing to complete NRE 320.**

Assessment Method: Numbers of students studying abroad.

Results: We have data on students studying abroad only for the past 7 years, which coincides with the initial offering of a 15-day NRES summer camp in Costa Rica that fulfills the requirement for summer camp (the other option is a 3-week experience – also 15 days - at Robinson Forest).

Table 3: Numbers of students who have studied abroad since 2012.

Year	Semester Abroad	Summer Abroad (internship or academic)	Alternate summer camp abroad	NRES Costa Rica
2018-2019	2	2		9 (+1 from LA)
2017-2018	3	4		11 (+ 1 from BAE)
2016-2017	1	1	2	21
2015-2016	4	0		12
2014-2015	3	1		1 (+ 4 other majors)
2013-2014	2	1		12
2012-2013	1	2		17

Analysis: The data above illustrate that a subset of NRES students are studying abroad, in no small measure due to the Costa Rica field course. The development of a brochure linking UK Education Abroad (EA) opportunities with the NRES program has helped to make the idea of studying abroad more accessible and encouraged more students to do it. However, some time has passed since we updated this, a task we will ask the new NRES AC to accomplish in the coming year.

Ongoing Improvement Actions: There are several strategies we use to nurture NRES students going abroad. First, we advertise the Costa Rica field course early in the year, so that there will be sufficient numbers for the course to be financially feasible. Secondly, we use tuition return funds from summer camp to provide scholarships to students, and many of our students benefit from this model.

Additional related concern: Last year we were concerned about the required changes to charge tuition for summer term internship/research experience credits that were implemented in 2018, requiring that all students enrolled in their internship/research experience in the summer to pay resident or non-resident tuition. To address concerns regarding the costs to our students, coupled with the realization and acknowledgement that most of the pedagogic component unfolded during the fall semester, we submitted and had approved a set of replacement courses. NRE 395/399 fulfills the internship requirement for one credit; NRE 400 fulfills the 2-credit GCCR component and must be completed *after* NRE 399/395 has been completed. UK’s sudden decision to charge students in-residence for online courses has created another financial obstacle for many of our students.

5. The NRES program could benefit from developing a fund-raising stream, which could be used to support student development, such as travel to a professional meeting.

Assessment Method: Creation of an NRES Enrichment Fund and funds raised; the Chase Parker Powell Memorial Scholarship Fund creation and funds raised.

Results: Since 2015 the NRES program has created an NRES Enrichment Fund and has raised \$500. This amount has not changed in the past year. The Chase Parker Powell Memorial Scholarship Fund has active fund-raising, and currently holds \$25,849; this fund has specific criteria for its allocation, and the NRES leadership has no role in the decision. However, it is meant to be awarded to an NRES student from Kentucky, and it would be helpful if this information were shared with the NRES SC.

Analysis: With the Enrichment Fund in place, NRES and NRCM alumni are able to give to the program, but we have not worked closely with the University and CAFE development offices to further this goal.

Ongoing Improvement Actions: Perhaps with the Kentucky Can: The 21st Century Campaign, new and enhanced opportunities will allow us to work with CAFE Development to grow the NRES Enrichment Fund.