

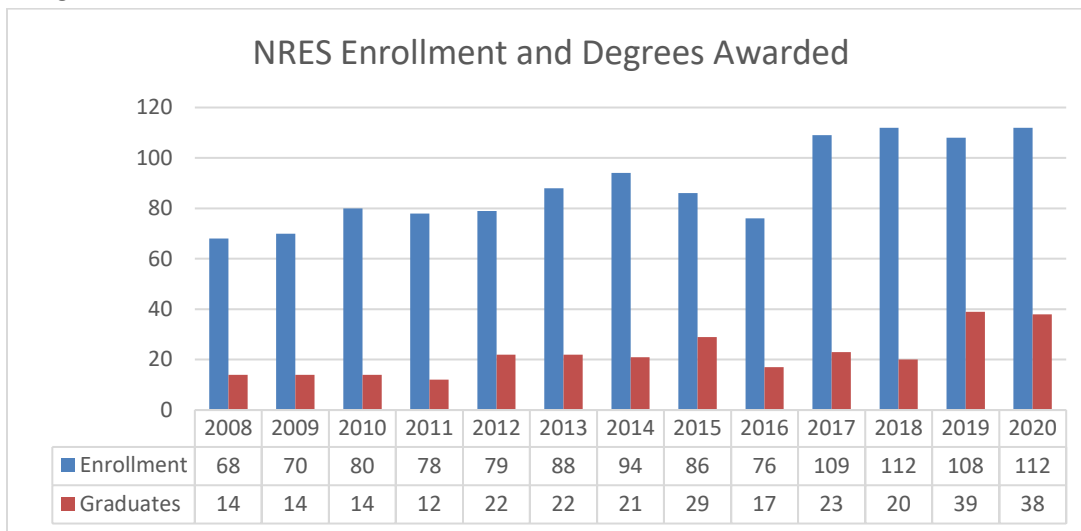
# Program Review Implementation Plan Report 2019-2020

## Natural Resources and Environmental Science (NRES) 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 thirteen years to determine trends in enrollment. The number of enrolled students and degrees awarded are plotted in Figure 1.



**Figure 1. NRES enrollment and graduates since 2008. \*Data provided by Tricia Coakley.**

**Results:** There has been a general upward trend in enrollment in the NRES program since 2008. NRES enrollment in 2014 (the time of the last program review) was 94 students. Current enrollment (Fall 2020) is now 112 students, representing an increase of 19% over the 6-year period. The program has averaged ~110 students over the last four years, the highest number over a four-year stretch in the history of the NRES/NRCM program. The number of students graduating is dynamic, but in general mirrored trends in enrollment, with a general increase over time, hitting the maximum in 2019 with 39 graduates.

**Analysis of Results:** While it is difficult to pinpoint the specific reasons for the historically high enrollment and graduation rates, we suspect that there are 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 concrete plan in place for students to transfer from the Environmental Science Technology (EST) program at BCTC to UK, and a commensurate increase in the number of students we recruit from BCTC. We saw a decline in our enrollment in 2015 and 2016, and then a rebound in 2017 which has been sustained. The latter increase, which went up as a proportion of the College enrollment, might stem from the hiring of Wayne Centers and Seth Riker in the Center for Student Success in fall 2015 which may be 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 as well as Arts and Sciences, in addition to coming from other majors in CAFE, including a steady stream of

students from Animal Sciences. There is also some evidence that the relatively new B.A. in Environmental and Sustainability Studies in the College of Arts & Sciences is raising awareness among students of “environmental” programs generally, and driving some students to the B.S. in NRES.

**Ongoing Improvement Actions:** We intend to move forward as we have been, as current enrollment is nearing capacity for the NRES program in light of the emphasis on experiential learning and commitment to faculty advising. In order to maintain student numbers requires continued efforts to recruit first-year students during CAFE recruiting events combined with on-campus recruiting. To deal with the logistics of possible growing enrollment, we have assigned our AC to handle transition advising.

**2. The external program review (completed in 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:** A new NRES AC (Dr. Adia Sovie) was hired 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. This space is a marked improvement over the previous space allocated to the NRES AC. The Ag North location facilitates more informal meetings with other AC’s and the Center for Student Success. The Department of Forestry and Natural Resources (FNR) continues to provide storage space for NRES program in the TP Cooper building for NRES program use. NRES students also share a lounge with FNR students in the basement of TP Cooper. The NRES program has not received any direct additional staff support since the periodic program review. Deb Ramey, in the Center for Student Success, continues to provide essential staff support in tracking budgets and purchases, and in helping with student management and course enrollment. This is an established role for Deb within her overall MJRs. The program also relies on 2-3 undergraduate students working 5-10 hours/week researching and writing the bi-annual NRES newsletter, which we believe to be the only student-produced newsletter in CAFE. Our AC works closely with these students to produce the newsletter. The students also help with other program needs, such as helping to staff events, student recruiting, and attending NRES SC meetings to provide insights from a student perspective.

**Analysis of Results:** The new NRES AC office space is working well. Staff support from the Center for Student Success in tracking of budgets and purchases coupled with paid student assistants are accomplishing our needs for staff support. We have sufficient budgetary capacity to pay for 2-3 student assistants and 2-3 part-time instructors, although much of this capacity is funded through student tuition derived from the Robinson Forest field experience and more recently, summer tuition for student internship/research credits. These income streams are essential to this thriving program and it would be great to leverage them with other sources in light of possible enrollment growth.

**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 NRES students.

**Table 1:** Number of NRES Steering Committee members and advisors over the past six years.

	NRES Steering Committee	Advisors
2019-2020	14a	14
2018-2019	13b	11
2017-2018	13b	9
2016-2017	9c	9
2015-2016	9c	9
2014-2015	9d	9

- a. SC membership: FNR, 3 faculty, 1 staff; LA, 2 faculty; PSS, 4 faculty; AgEcon, 1 faculty; Earth and Environmental Science, 1 faculty; Geography, 1 faculty; alum, 1.
- b. SC membership: FNR, 3 faculty, 1 staff; LA, 2 faculty; PSS, 3 faculty; AgEcon, 1 faculty; Earth and Environmental Science, 1 faculty; Geography, 1 faculty; alum, 1.
- c. SC membership: FNR, 2 faculty, 1 staff; LA, 2 faculty; PSS 2 faculty; AgEcon, 1; Earth and Environmental Science, 1 faculty
- d. SC membership: FNR, 2 faculty, 1 staff; LA, 1 faculty; BAE, 1 faculty; PSS, 2 faculty, AgEcon, 1 faculty; Earth and Environmental Science, 1 faculty

**Results:** The membership of the NRES SC is currently made up of the NRES SC Chair (currently Chris Matocha, Plant and Soil Science(PSS)), the DUS (currently Larry Grabau, PSS), and 12 additional members including an alum. Mary Arthur served as SC chair for over 10 years and stepped down Dec 31, 2019. Brian Lee stepped down as DUS as of Sept 30, 2019, being promoted to Assoc. Dean of Faculty in CAFE. Larry Grabau stepped in as DUS on June 1, 2020. Most of these faculty/staff on the SC also teach one or more of the major course requirements and advise students. Additional faculty teach key courses for the NRES program, but do not serve as SC members or academic advisors for NRES students; there are also faculty who neither teach NRES courses nor serve on the NRES SC, but advise students (Mike Lacki, FNR; Mark Coyne, PSS). The number of faculty has generally been in a relative steady-state. It is the task of the SC chair, with input from the SC and with support of the Associate Dean of Instruction, to identify new SC members and to cultivate future leaders. However, it would be very helpful to have a stronger framework for identifying potential NRES program faculty participants, with stronger linkages to the initial hiring process and better record-keeping of those faculty that were hired with College-level expectations for contribution to the NRES program.

**Analysis of Results:** Despite our success in recruiting new faculty to the NRES SC, the need to develop new leadership remains an ongoing task. In addition, as our student numbers are currently at a record high and with a program and College desire to see enrollment increase, we will need to either attract new advisors to help take on the advising load, or each advisor will need to take on more advisees. The latter option, taking on more advisees, is not a realistic option for many of our advisors who also advise for their home departments and have research appointments. The AC

provides significant support for transition advising, whereby initial course scheduling and a point of human connection is made for all incoming students by the AC. The DUS, with input from the AC, then identifies and assigns students to faculty advisors for the latter portion of their academic careers.

**Ongoing Improvement Actions:** The program relies heavily on the chairs of the affiliated departments and the Dean of CAFE to identify new faculty hires with the potential to cross over to NRES, and whose positions are then explicitly connected to the NRES program for teaching, NRES SC service, and academic advising. From the program perspective, we need to maintain strong communication with chairs of the affiliated departments and the Dean and Associate Dean of Instruction when departmental hiring decisions are being made. Developing faculty leadership within the program has in some ways been challenging, resulting in long terms for each of our 4-5 NRES SC Chairs over the past 24 years (past chairs have come from Rural Sociology, PSS, Agricultural Economics(AEC), and FNR). For example, the past NRES Steering Committee Chair (Mary Arthur) 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 DUS. Fortunately, Larry Grabau eagerly stepped in as DUS after stepping down as Associate Dean of Instruction for the College. In addition to these two leadership positions, faculty on the NRES SC also volunteer for other roles, such as providing oversight of the Internship Program and Annual Internship Forum (Jack Schieffer, AEC, has served this role for the past few years), leading the assessment charge (David McNear serves in this role with significant support from the AC), 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 AC), as well as the NRES Costa Rica summer camp option (taught by Rob Paratley (7 yrs) and Steve Price (6 yrs), 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 the chairs of the affiliated departments, as well as a commitment from the Dean of CAFE to hire new faculty with expectations for contributions via teaching, advising and/or service on the NRES Steering Committee. 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 constant 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.

- 4. We encourage NRES students to study abroad, as a semester abroad, with the NRES summer camp experience 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 the 15-day NRES summer camp in Costa Rica that fulfills the requirement for summer camp (NRE 320) while the other option is a three-week experience at Robinson Forest. All study abroad experiences, including Costa Rica summer experience, were cancelled in 2020 due to the COVID-19 pandemic.

**Table 2. Numbers of students who have studied abroad since 2012.**

Year	Semester Abroad	Summer Abroad (internship or academic)	Alternate summer camp abroad	NRES Costa Rica
2019-2020	0	0	0	0
2018-2019	2	2	0	9(+1 from LA)
2017-2018	3	4	0	11(+1 from BAE)
2016-2017	1	1	2	21
2015-2016	4	0	0	12
2014-2015	3	1	0	1(+4 other majors)
2013-2014	2	1	0	12
2012-2013	1	2	0	17

**Analysis of Results:** A subset of NRES students are studying abroad due in large part to the Costa Rica field course (Table 2). The development of a brochure linking UK Education Abroad opportunities with the NRES program was important for advertising, helping make the idea of studying abroad accessible. We plan to update this brochure to encourage more students to capitalize on this opportunity.

**Ongoing Improvement Actions:** There are several strategies used to nurture NRES students going abroad. First, the Costa Rica field course is advertised early in the year in order for sufficient numbers to be attained so that it is 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.

**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 was shared with the NRES SC.

**Analysis of Results:** With the enrichment fund in place, NRES and NRCM alumni will be 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 21<sup>st</sup> Century Campaign, new and enhanced opportunities will allow us to work with CAFE development to grow the NRES enrichment fund. In addition, it might be good to explore new income streams by offering summer online courses and develop existing streams such as summer tuition.