

# Natural Resources and Environmental Science Program 2015-2016 Implementation Plan Report

## 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 trends in enrollment

**Table 1: NRES Enrollment and Graduation Numbers since 2007.**

	Enrolled	Graduated in previous 12 months
Oct 2016	110	17
Oct 2015	76	28
Oct 2014	83	15
Oct 2013	91	27
Oct 2012	98	20
Oct 2011	85	13
Oct 2010	80	16
Oct 2009	70	13
Oct 2008	68	15
Oct 2007	57	-----

Enrollment and graduation numbers were provided by Jamie Dunn on October 7, 2016.

**Results:** Enrollment increased dramatically from October 2015 to October 2016; we currently have the highest number of enrolled students in the history of the NRES/NRCM program. Higher by 12 students than the previous high of 98 (in 2012), the current number of enrolled NRES students is much higher than the average of the previous 9 years (78.7). The number of students who graduated in the previous 12 months dropped from the previous year, but was only slightly lower than the average of the previous 8 years (18.4).

**Analysis of Results:** While it is difficult to pinpoint the reasons for the current higher enrollment, and the sudden increase in enrollment over the past year, we suspect that there are several factors at play. We hired an Academic Coordinator (AC), Geri Philpott, in 2011. The AC has been very pro-active in identifying and implementing 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 2014 and 2015, and in response shifted the duties of the AC away from

some of her teaching commitments to allow more time to focus on recruitment. In addition, some changes in Academic Programs with the addition of Wayne Centers and Seth Riker last fall may have contributed to improved recruitment. Of course, enrollment is up in the College overall, and this may account for some of the increased enrollment in NRES. However, 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. Undergraduate Studies had been a key pathway by which students found the NRES program in the past; the loss of this program may have a negative impact on student enrollment.

**Ongoing Improvement Actions:** For now, we intend to continue as we have been, as the last year has seen a 44% increase in student enrollment, 40% higher than the average over the last nine years. This entails continued efforts to recruit first-year students during CAFE recruiting events, as well as on-campus recruiting particularly in Engineering and A&S, as well as seeking opportunities to interact with undecided students who previously would have come through Undergraduate Studies.

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

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

**Results:** New 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 much smaller and qualitatively inferior office space in the TP Cooper building formally occupied by the NRES AC. The Ag North location facilitates more informal meetings with other AC's and the Center for Student Success. To accommodate the students need to meet with the NRES AC readily between classes, we have also adapted a corner interior office shared with the Urban Forest Initiative in the TP Cooper building for the NRES AC to use on a periodic basis. This additional shared space in TP Cooper is a very helpful addition to our need for NRES program space as class schedules often limit where a student can meet. This space also allows for storage of items used for the various field courses and events. NRES students share a lounge with Forestry students in the basement of TP Cooper. The lounge provides a space on campus to do homework, socialize, and interact with Forestry students, who in many cases are in class with the NRES students.

The NRES program has not received any direct additional staff support for the NRES program since the periodic program review. Emily Morgan, in Academic Programs, continues to provide essential staff support in tracking budgets and purchases, and in helping with student management and course enrollment. The program also relies on two

undergraduate students who each work approximately 10 hours/week researching and writing the bi-annual NRES newsletter, which we believe is the only student-produced newsletter in CAFE. The students also help with other program needs, such as helping to staff events and student recruiting or advising.

**Analysis of Results:** The new NRES AC office space in the Equine suite is a significant improvement, and is working well for the Academic Coordinator, the program and our students.

In addition, though no new staff was added, support from Academic Programs via Emily Morgan's tracking of budgets and purchases is, for now at least, accomplishing our needs for additional staff support. We currently have sufficient budgetary capacity to pay for the two NRES Student Assistants, as well as two Part-Time Instructors, but these expenses stretch our fiscal capacity.

**Ongoing Improvement Actions:** Our space is working well. The additional shared space in TP Cooper is a necessary addition to our need for NRES program space, and very much appreciated, but also one that periodically appears to be under increasing risk of being reallocated as space needs within the Department of Forestry expand. The NRES Program is looking forward to working with other units (Landscape Architecture, Forestry, Entomology) to continue working towards envisioning the new building as indicated in the Capital Plan period we are in now. For now, our need for additional staff support seems to be fulfilled by Emily Morgan's (through Academic Programs) support of program needs.

- 3. There is a need for ongoing recruitment and retention of faculty whose primary academic homes are a CAFE department to the NRES program. This 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 recruitment and retention of faculty once they arrive on campus. The first process occurs at the level of the Dean, Associate Deans, and Department Chairs. The second process is at least partially the responsibility of the NRES Steering Committee (SC) Chair and SC members.**

**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 2:** Number of NRES Steering Committee members and advisors over the past two years.

	<b>NRES SC</b>	<b>Advisers</b>
<b>2015-2016</b>	9 <sup>1</sup>	9 <sup>3</sup>
<b>2014-2015</b>	8 <sup>2</sup>	9 <sup>4</sup>

1. SC membership 2015-2016: Forestry, 2 faculty, 1 staff; LA, 2 faculty; PSS, 2 faculty; AgEcon, 1 faculty; Earth and Environmental Science, 1 faculty
2. SC membership 2014-2015: Forestry, 2 faculty, 1 staff; LA, 1 faculty; BAE, 1 faculty; PSS, 2 faculty; AgEcon, 1; EES, 1 faculty.
3. Advisors 2015-2016: Forestry 3; LA 2; PSS 3; AgEcon, 1
4. Advisors 2014-2015: Forestry 3; LA 1; PSS 3; AgEcon, 1; BAE, 1

**Results:** The membership of the NRES SC is made up of the NRES SC Chair (currently Mary Arthur, Forestry), the DUS for the NRES program (currently David McNear, Plant and Soil Science), and a group of 6 additional faculty and 1 staff member. Most of these faculty/staff 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, Forestry; Mark Coyne, PSS). The number of faculty has generally been in a relative steady-state: as members leave for one reason or another, we have been able to find new members. Last year, we lost three NRES SC members, two permanently (Agouridis, BAE; Stainback, Forestry), and the other hopefully temporarily (Barton, Forestry). In response, we were able to add two new SC members, Steven Price (Forestry) and Chris Sass (LA).

**Analysis of Results:** We are facing two challenges with regard to the NRES program faculty involvement: maintaining full membership on the NRES SC and bringing new faculty on board, and developing leadership among the NRES SC faculty to take over the positions of NRES SC Chair and DUS through time. 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 advisees who also advise for their home departments.

**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, Plant and Soil Science, and Agricultural Economics, and Forestry). Similarly, it can be difficult to identify a faculty member to serve as DUS (past DUS have consistently been from the Department of Plant and Soil Science). 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, Agricultural Economics, 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 (Barton, Forestry, has done this for the past 10 years or so, with support from the AC since she was hired 5 years ago; previously this role was served by David Ditsch), as well as the NRES Costa Rica summer camp option (taught by Paratley (4 yrs) and Price (3 yrs), both in Forestry). 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 nurture and support those interests and commitments from faculty.

- 4. Studying abroad can provide an important opportunity for growth for individual students, and can greatly enhance their understanding of the differences in the ways that other cultures manage natural resources. We encourage our students to study abroad, either as a semester abroad, or with the NRES summer camp experience to Costa Rica or other shorter-term opportunities. The study abroad option also provides for a necessary alleviation of a bottleneck for students in 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 4 years, which also coincides with the initial offering of a 2-week NRES summer camp in Costa Rica that fulfills the requirement for summer camp (the other option is a 3-week experience at the Robinson Forest).

	Semester Abroad	Summer Abroad	NRES Costa Rica
2015-2016	4	0	12
2014-2015	3	1	1 (+ 4 from other majors)
2013-2014	2	1	12
2012-2013	1	2	17

**Analysis of Results:** Although we don't have concrete numbers for the number of students who studied abroad prior to the 2012-2013 academic year, the data illustrate that an increasing proportion of NRES students are studying abroad. Part of this is due to the creation of the Costa Rica summer program which allows many more students to study abroad by linking it to the NRES summer camp requirement and providing an accessible study abroad opportunity. In addition, the development of a brochure linking UK Education Abroad (EA) opportunities with the NRES program, developed by the NRES AC in collaboration with the EA office, undoubtedly helped to make the idea of studying abroad more accessible and encouraged more students to do it.

**Ongoing Improvement Actions:** There are several strategies we can use to continue to nurture NRES students going abroad. First, we need to do a better job of advertising the Costa Rica summer camp option earlier in the year, and also do a better job of extending awareness of this opportunity to students not in NRES so that there will be sufficient numbers traveling for the trip to be financially feasible. Secondly, NRES was the first program to have an EA major advising page (MAP), and this is updated annually to provide students with information about relevant EA opportunities connected to their NRES program. Previous CAFE support for study abroad in the amount of \$4,000 was very helpful in the past. We are now challenged with helping students with meeting the financial challenge of both the Costa Rica summer camp and the local summer camp at Robinson Forest.

**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.

**Results:** Since 2015 the NRES program has created an NRES Enrichment Fund and have raised \$980.

**Analysis of Results:** This is a good start on fund-raising. With the Enrichment Fund in place, NRES and NRCM alumni will be able to give to the program.

**Ongoing Improvement Actions:** To successfully raise sufficient funds to use for student support, potential donors need to be know about this opportunity to donate directly to the NRES program. We are working to establish improved communication with potential donors to facilitate donations to the NRES fund, and plan to work closely with the College to

increase awareness of this fund. We are researching the potential to receive non-monetary donations to the program, such as equipment to support students who don't have outdoor gear for summer camp.