

NMSU Undergraduate Research (and Scholarship and Creative Work)

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As a research university with a deep commitment to undergraduate education, New Mexico State University has a long and rich tradition of its faculty engaging undergraduate students with their original research, scholarship, and creative work. Consistent with the literature on undergraduate research more generally, the faculty understand that mentoring original student work in their labs, in the field, or in the studio, is a high impact learning practice with significant impacts on academic achievement and student development (Kuh, 2008).

An Environmental Scan - Method

To better understand the NMSU culture surrounding undergraduate research experiences (including work with faculty on original scholarship and creative work), during the Fall 2020 semester, I completed an environmental scan using both an online review of campus resources and a series of informal interviews with “informants.” Expert informants were first recommended by each College Deans starting a snowball of referrals to others in the campus community with significant experience working to promote undergraduate research either in their individual work or as administrators of programs and grants. The findings from this work provide a partial snapshot of the NMSU undergraduate research community and reveals a strong foundation from which to build NMSU’s excellence in this area of work.

The Current State of Campus Efforts

In recent history, NMSU faculty have had exceptional success in securing and running externally funded projects designed to promote research experiences to undergraduate students. Although many of these projects are funded by agencies with priorities on under-represented populations and STEM fields (e.g., URS, MARC, BRAiN, HHMI), the NMSU faculty have also successfully secured funding to support undergraduate research programs in the social sciences (REU-Immigration/Border Studies).

In addition to these externally funded programs, multiple academic units have developed structures to encourage undergraduate research and original scholarly work. For example, the College of Arts and Sciences has developed a Discovery Scholars Program to encourage students from across the university to work with faculty on research, scholarship, and creative projects; the Honors College promotes an undergraduate Thesis sequence for completion of the University Honors Protocol and sponsors the annual URCAS exhibition to feature original undergraduate research and creative work; and multiple academic programs have created curricular pathways with original research or similar capstone work supervised by a faculty advisor. Even outside these structures, however, a scan across campus quickly reveals that there are many faculty members across all academic colleges that are actively supervising undergraduate students in their professional work outside the classroom because of their own experiences as undergraduates, the value of the assistance (e.g., no graduate program to draw students from), or the sheer joy of working with bright motivated students early in their careers.

Certainly, each of these programmatic efforts (and others not listed) are successful and can document positive outcomes in the students that participate. The challenge, however, remains that externally funded programs are constrained in the number of students they can serve and are limited by the availability of funds. Similarly, internally funded programs can be successful but relatively few students are aware of these opportunities, do not see the value of these experiences, or do not understand how these can be built into their current academic programs.

Finally, although there are multiple independent efforts to promote undergraduate research scattered across campus, there is not one centrally identified campus office or unit with explicit leadership responsibility. NMSU is, in fact, the only one of its identified peer institutions not to have some form of a permanent Office of Undergraduate Research to promote and coordinate these efforts!

Some Themes/Lessons from Interviews

Drawing from the comments of interview informants, a consistent picture emerges of a campus with a strong potential to enhance practices that promote undergraduate research experiences.

- NMSU has strong history of securing externally funded programs to support student engagement with research but has not always been able to transition efforts into sustainable programs after funding is complete.
 - The faculty leading these efforts are a great resource with significant experience from recruitment to post graduate tracking of student outcomes
 - How important it is to pay students for longer term work or summer appointments remains a healthy debate
- There is consensus that NMSU is already well positioned to support undergraduate research if this becomes a priority.
- There is a strong core of faculty members who already believe in the value of this experience as a transformative, high impact, learning method but...
 - Do not see adequate recognition or encouragement beyond the push to secure externally funded grants that support this work
 - Report that once peers begin to include undergraduates in their work, the positive experience leads to continued commitment because they can see the student impact
 - Students are willing and eager if they have been introduced to opportunity but it is not always easy to make students aware of the value or possibilities
- Promotion and tenure procedures can already account for this work but this has not typically been acknowledged or explicitly encouraged.
- Undergraduate research blends NMSU LEADS 2025 priorities for student success and growth of NMSU's profile as a national research university raising the value of this initiative:
 - Move toward R1 is not abandoning NMSU focus on undergraduate teaching and learning; Undergraduate engagement in research, scholarship, and creative work can reinforce that value.
- Most majors have capacity for built-in research experience and several programs have successfully structured explicit sequences that introduce, reinforce, and engage students as part of the curriculum.
- There is a perception that academic advising does not adequately promote this kind of work to students in scheduling and program planning.

Some Recommendations to Explore

Consistent with these themes, faculty and administrators agree that, even in the face of competing demands and priorities that demand attention, NMSU can take immediate, low cost, moves to raise the profile of undergraduate research for both faculty and students.

- Clear messaging from senior leadership that undergraduate research is valued and will be rewarded can lead to changes that will encourage both faculty and students to increase participation.

- Designating a central coordinating office for advocacy, coordination, and resources will help all but would be especially useful to faculty with less previous experience in this area.
- Identifying a Community of Scholars or a task force of seasoned professionals would help establish a cadre of faculty leaders, guide additional implementation, and help document and disseminate best practices on the NMSU campus.
- Sharing models of course sequence that already promote undergraduate research within the standard curriculum will encourage others to examine how their curricular structures can:
 - Introduce the value and opportunities in first year coursework
 - Create exposure and hands-on exploration with methods and mid-level courses
 - Provide guided opportunity for capstone research experiences
- Build off of existing programs and structures that cross departmental and disciplinary boundaries (e.g., Discovery Scholars in A&E; Thesis/Capstone sequence in Honors College)
- Provide guidance on how to propose and document allocation of effort for promotion and tenure processes with explicit encouragement for Department Heads to encourage these efforts
- Build Digital Measures procedures to better reward activities and document campus trends
 - # of student coauthors on presentations/exhibitions/publications
 - Supervision of original senior capstones and Honors Thesis
- Initiate a NMSU undergraduate journal or periodical to feature original undergraduate research, scholarship, and creative work
 - In addition to reinforcing the value of shared original work, this could also be used for outreach, marketing, and recruitment
- Promote undergraduate participation in RCW and URCAS while raising the profile of these activities as highly valued on campus
 - Encourage introductory courses to have students attend and review work to introduce students early and expose them to successful models of other students (e.g., FYI, methods courses)
- Add preferred criteria for new faculty recruitment so that a “program of work that engages undergraduate students” alerts all to the value of this work
- Develop a posting structure for faculty to more easily recruit students and raise student awareness of opportunities (including collaboration with programs and offices to ensure equity and inclusion)
- Develop campus funding opportunities to support students for summer work and/or structure Crimson Scholar funding so that undergraduate research opportunities are prioritized.

With the formation of a designated office and the establishment of a community of scholars or task force of committed faculty, the specific strategies, order of activities, and measurable targets and outcomes could be more thoughtfully refined. Even with competing demands on time and financial resources, this review confirms that promoting undergraduate research is a worthwhile initiative for NMSU and a manageable task with meaningful outcomes for the university as a whole!

References:

Kuh, G. 2008. High-impact educational practices: What they are, who has access to them, and why they matter. Washington, DC: Association of American Colleges and Universities.

For an easy to read, comprehensive review of undergraduate research as a high impact learning practice, see Lopato 2010 at <https://www.aacu.org/publications-research/periodicals/undergraduate-research-high-impact-student-experience>.