

Executive Summary: On February 6th, 2019, the Office of the Vice President for Research hosted *Facilitating and Expanding Undergraduate Research: A Workshop for Faculty and Program Staff*. The 6-hour event brought together about 75 participants from across UNM to discuss and learn about the current landscape for undergraduate research (UGR) at UNM, as well as ways to expand their curricula and/or research programs to include UGR opportunities. The event included presentations, panels, and discussion regarding undergraduate research in the classroom, co-curricular programming and outreach, and engagement with faculty research. The main themes that emerged include:

- the need for a UGR office and/or clearinghouse for information on opportunities, best practices, and communication across practitioners
- broadening concepts in assessment and recruitment, and ensuring UGR involves disciplines both inside and outside of STEM
- recognizing the importance of financial support for UG students who wish to engage in research
- broadening the pool of mentors for UG students in research, and providing training to the mentors

Agenda, Facilitating and Expanding Undergraduate Research Workshop:

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| 8:30a | Registration |
| 9:00a | Welcome & Introduction <i>What Does Undergraduate Research Look Like at UNM?</i> |
| 9:30a | Undergraduate Research in the Classroom <i>9:30a: Undergraduate Research in The General Education Core, UNM Academic Affairs General Education Faculty Fellows Presentation, Jason Moore</i> <i>9:45a: Classroom-Based Undergraduate Research, Faculty Panel with Dawn Nordquist, Jennifer Rudgers, Diana Northup, Gary Weissmann, and Victor French</i> <i>10:15a: Classroom-Based Undergraduate Research, Group Discussion</i> |
| 10:45a | BREAK |
| 11:00a | Co-Curricular Undergraduate Research I: Undergraduate Research Programs & Outreach <i>11:00a: Faculty & Staff Panel with Laura Crossey, Cristina Takacs, Andrew Gonzalez, and Stefi Weisburd</i> <i>11:30a: Group Discussion</i> |
| 12:00p | Networking Lunch, with UNM Programs Poster Viewing |
| 1:00p | Co-Curricular Undergraduate Research II: Undergraduate Engagement with Faculty Research |

1:00p: Faculty Panel with Lonna Atkeson, Tom Turner, Mary Tsiongas, Jason Moore, and José Cerrato

1:30p: Group Discussion

2:00p Efficiencies, Impacts & Priorities

Group Discussion Questions:

- How can we better find efficiencies, share expertise and/or resources, and streamline processes?
- How can we best assess the impact of undergraduate research on student learning and college persistence?
- What should be our top priorities going forward?

2:50p Wrap-Up & Closing Remarks

Summary of Proceedings:

The workshop began with welcomes from UNM President Garnett Stokes and Interim Provost Richard Wood, who encouraged faculty and staff to welcome students into research early in their academic careers. They noted that these experiences, in combination with our unique and diverse student population, can be transformative, helping UNM to set itself apart from non-R1 universities and other peer R1 universities.

AVPR Patricia Henning then outlined plans for the day, including **workshop goals**:

- Create a shared understanding of UNM's undergraduate research efforts, including assets, strengths, weaknesses, barriers and gaps.
- Identify areas for improving efficiencies in order to foster collaborations that maximize UNM resources and expertise.
- Develop a set of shared priorities for where UNM should focus efforts and resources next.

She also explained that while UGR may be discussed and categorized in many different ways, the choice was made to divide the workshop into the following broad areas of UGR:

- Classroom-based UGR
- Co-Curricular: UGR Programs & Research Outreach
- Co-Curricular: Undergraduate Engagement with Faculty Research

Dr. Tim Schroeder then provided a brief summary of existing UNM undergraduate research engagements and programming. This presentation, *The Scope of Undergraduate Research at UNM*, is available online at <https://research.unm.edu/events/feuresearch/downloads>.

Dr. Jason Moore reported on the work of the Academic Affairs General Education Faculty Fellows focused on undergraduate research. This work differentiates UGR into three distinct categories: preparatory instruction, partial research engagement, and full research engagement. The fellows also provide a preliminary set of UGR dimensions that empower instructors to better tailor course-based undergraduate research to different disciplines, class

sizes and course levels. The General Education Fellows approach is based on the following underlying assumptions:

- UGR is not dichotomous. It is not all-or-nothing.
- UGR is scalable and adaptable. It can be scaled up or down to fit instructional needs and resources, and adapted to academic disciplines across the University.
- UGR looks different in different academic disciplines.
- In some discipline/class/instructor/class-size contexts, high levels of student immersion are appropriate. In others, low levels of student immersion are appropriate.
- All levels of student research immersion will provide important benefits to students.

Dr. Moore's presentation, *Undergraduate Research in the General Education Core*, is available at <https://research.unm.edu/events/feuresearch/downloads>.

The Academic Affairs General Education Faculty Fellows for undergraduate research described their approach in greater detail during two public Faculty Fellows presentations during the week of April 1, 2019.

During the panel "Undergraduate Research in the Classroom," each panelist described their involvement with course-based undergraduate research. Their work represents a remarkable diversity of content, student engagement, skills development, and research activities. Presentations were followed by lively discussion amongst participants and panelists after the presentations.

The primary takeaway articulated through panel and group discussions was that even though participants in the Workshop were self-selected as interested and involved in UGR, the impressive *range of UGR experiential learning taking place on campus* is not well-known or publicized.

Questions that arose include:

- How can we best fund UGR opportunities and activities?
- How can we best keep each other informed about these activities?
- How could we best facilitate communication across practitioners?
- How do we best teach skills needed in research, in stand-alone prep classes, in class, and/or in the research experience itself?
- How can we best help students find researchers with whom to work? Note that that while we do have the Research Match database in place, it could be more effectively populated and utilized.
- Should there be a UGR clearinghouse that points to information held in departments?
- How do we track students?
- How to we facilitate more non-STEM researchers to get involved in UGR?

During the panel “Co-Curricular Undergraduate Research 1, Undergraduate Research Programs and Outreach,” panelists discussed **their work with co-curricular programming and outreach**. The panelists described a variety of programs, with different goals, participation requirements, and funding sources. They described how students are positively impacted, but also noted important challenges in offering these UGR engagements. These challenges included difficulties in recruiting students, faculty members and mentors, as well as challenges associated with including high school students (minors) in on-campus research experiences. The idea of a UGR clearinghouse arose again, as well as the need to “train the trainers,” empowering professors and grad students to be more effective advisers and mentors to undergraduate students.

The primary takeaway from this panel and discussion was the importance of getting students into research early, and not waiting until junior and senior years.

Questions that arose include:

- How do we get more non-STEM faculty to get involved in creating UGR opportunities outside of STEM?
- How do students find faculty mentors? How can we improve this process? Again, Research Match exists, but is it sufficiently supported and staffed to perform optimally?
- How do we encourage students who may not have top GPAs to identify themselves as potential researchers, and get engaged in UGR early?
- How can we leverage UGR experiences to help recruit new students to UNM?

During the panel “Co-Curricular Undergraduate Research II: Undergraduate Engagement with Faculty Research,” panelists described a wide range of UGR approaches, in many cases driven by disciplinary considerations. They also articulated some of the skills that students gain through these research experiences, including the ability to critically assess issues such as bias in data sharing and presentation. Panelists noted that while the various disciplines approach research engagement differently, there are common threads between them, including the need to keep students engaged for enough time to become active in research, and pay off time invested in training. The idea of “training the trainer” arose again, with some focus on support for graduate students who can then train undergrads.

Observations that arose during the panel and discussion also include:

- It is possible to use upper level undergraduates as peer mentors, and this has some important advantages for both sets of students.
- There is need for coordinated website and database support to bring students and mentors together, and this could be part of the function of an UGR office.
- If created, an UGR office could serve as information repository for programs and opportunities, and provide faculty a venue for sharing best practices in UGR and recruitment.

- Financial support for undergraduates to get involved in research is important, as many of our students need to consider closely how they can spend their time outside of class best, and meet their financial needs.
- There is a need to work collaboratively across silos to engage more students, with an eye toward increased student financial support (in addition to other student incentives) and shared research facilities.
- There is a need to create more opportunities for mentoring graduate students, and to increase the number of graduate assistantships.

Following the final panel, participants broke into small groups to tackle the following discussion questions: How can we better find efficiencies, share expertise and/or resources, and streamline processes? How can we best assess the impact of undergraduate research on student learning and college persistence? What should be our top priorities going forward? Participants were encouraged to first write their responses to these questions individually, and then to discuss their responses at their tables. In addition to the ideas that were expressed earlier through panel discussions, this general discussion process resulted in the following ideas, observations and suggestions:

Improve UGR assessment:

- Utilize Banner attributes to track student participation in UGR.
- Explore the use of electronic badging and student portfolios.
- Take advantage of education faculty and Provost office staff to better assess the impact of UGR engagement.
- Work with UCAM and other partners to better tell the story of UGR student engagement and success.

Other priorities identified in group discussion:

- Find funding to increase financial support to students engaging in UGR. Increase funding to Freshman Learning Communities, where many first-year students first encounter UGR.
- Develop new ways to mentor the mentors.
- Develop a central UGR office and/or UGR clearinghouse of student opportunities.
- Provide better and more strategic coordination between UGR initiatives, allowing for a stronger progression for students who start with no research knowledge or experience.
- Reward faculty who teach and mentor undergraduate researchers, especially those who work with freshmen and sophomores.
- Develop mechanisms for supporting younger faculty to engage student researchers, especially in academic departments where UGR is not highly utilized and/or valued.
- Work with UNM academic advisors to discuss and promote research with the students.

- Keep in mind that UGR is not a STEM-only activity, ensure non-STEM faculty are included in discussions and activities. Doing so will significantly broaden information literacy.

Dr. Henning then provided closing remarks, thanked participants, panelists and presenters, and then adjourned the workshop.