

September 2019



**Painting: Sueño de una tarde dominical en la Alameda Central or Dream of a Sunday Afternoon in the Alameda Central by Diego Rivera.**

## On Humanities and Social Sciences

The latest Carnegie rankings clearly demonstrated that humanities and social sciences now carry greater import in the ranking algorithm. Institutions, for example the University of Texas El Paso, achieved R1 status owing to their investment and growth in non-STEM areas (doctoral programs, expenditures). NMSU will need to invest similarly in existing and new humanities and social sciences doctoral programs to reach R1 status. External resources will be critical and one of the first places to look for such funding is in the sphere of Convergence Research.

According to the National Science Foundation, Convergence Research has two primary characteristics:

- Research driven by a specific and compelling problem; and
- Deep integration across disciplines.

A key imperative of NSMU's LEADS 2025 Strategic Plan is to address grand challenges with local implications, such as pre-K through 20 education, water, energy production, health disparities, sustainable economic development, and IT security. These compelling problems call for Convergence Research.

Federal, state and private funding sources look to universities for solutions to global challenges. The expectation is that expertise of different disciplines is brought to bear on these problems. It is

no longer sufficient that biologists, engineers, computer scientists, and mathematicians work together. Economists, cultural anthropologists, historians, philosophers, educators, and artists also have to be in the room.

NMSU faculty, researchers, scholars, artists, students and staff must intentionally reach out to colleagues in other disciplines and engage in dialogues that often precede collaborative opportunities. With support of the Chancellor's Office of Strategic Initiatives, such dialogues are already taking place around the theme of Healthy Borders. The last Healthy Borders convening, a collaborative working session which took place on May 16th, yielded four opportunities:

1. The Columbus-Palomas Border Nexus
2. Collaboration and Connection with Latin America
3. Border Economic Development Institute/Global Information Systems Program
4. Cross-Disciplinary Oral History

The next Healthy Borders event is scheduled for September 10th from 3:30-5pm in Hardman Jacobs Hall room 125. The event will be a moderated discussion between two NMSU alumni and life-long transborder practitioners—Dr. Alejandro Lugo and Dr. Lucinda Vargas. Additional collaborative working sessions will take place regularly over the course of the academic year and are open to the campus community. I encourage all to participate, learn more about these opportunities and start down the path of Convergence Research.

## **NMSU Psychology Researchers Develop Assistive Hearing System**



**Engineering Psychology faculty members Justin MacDonald (left) and Michael Hout (right) working with Engineering Psychology PhD student Dan Henning (sitting) in their lab in Science Hall, NMSU campus. Photo by Hamid M. Rad, Research Administration Services**

NMSU Psychology Associate Professors Justin MacDonald and Michael Hout have been working on a project to develop, implement, and evaluate an assistive hearing system that isolates sound sources that are located in the direction of the user's eye gaze. The system is meant to be used in

conjunction with binaural hearing aid to improve speech perception for the hearing impaired population. "Poor speech perception is a frequent complaint of those suffering from hearing loss and is associated with an increased risk of dementia, depression, and feelings of isolation in older adults" says MacDonald an Engineering Psychologist whose research area is at the intersection of audio interface design, audio algorithms, and statistics.

Perceiving a speech stream in the presence of competing speech is often especially difficult for hearing impaired listeners, and traditional hearing aids do not do much to solve the problem. According to MacDonald, previous attempts to address this issue have often relied upon directional microphones that are oriented to pick up sounds coming from directly in front of the user. However, the focus of attention often deviates away from directly in front of the listener, especially in auditory environments with many sound sources.

Instead of a system focused on a fixed location, MacDonald and Hout have been developing a highly innovative directional listening system that uses a microphone array to isolate sounds coming from the focus of the user's attention. The major hypotheses of this work are that eye gaze direction is a strong indicator of the focus of auditory attention, and that a gaze-controlled directional listening system represents an effortless and effective way to isolate the speech signals that the listener cares about.

The project's first goal has been to refine an existing and highly promising directional listening algorithm to maximize its ability to isolate a target speech signal. The PIs have been employing human subject testing to evaluate many different revisions of the algorithm according to the speech fidelity provided and listening effort required.

Concurrent with this effort, the project's other goal has been to determine how gaze information can be best used to control the directional listening system. More generally, the goal has been to determine how the focus of visual attention corresponds to the focus of auditory attention in normal and hearing impaired subjects. "We have been doing a series of basic research studies in which eye movements were monitored while subjects viewed complex audiovisual speech stimuli" states Michael Hout the Director of Vision Sciences and Memory Laboratory. "These data will suggest the best way to translate eye tracking data into an estimate of the focus of auditory attention, while also providing results relevant to the multisensory attention literature."

This work has been funded by a \$825,000 National Institute of Health award. For more information please contact Dr. MacDonald at [jmacd@nmsu.edu](mailto:jmacd@nmsu.edu), or Dr. Michael Hout at [mhout@nmsu.edu](mailto:mhout@nmsu.edu).

## Sandia National Laboratories' New Space at NMSU

NMSU and Sandia National Laboratories are expanding their collaboration by establishing a Sandia Extended National Security Externship (SENSE) site in Anderson Hall on the NMSU campus. The SENSE will create more opportunities for NMSU students as Sandia employs a considerable number of scientists. In addition, it will increase the interactions of Sandia scientists with NMSU faculty. "Our hope is that as our relations grow with Sandia, so will the number of graduates





they hire from NMSU," states President Floros.

Building strategic public private partnerships with opportunities to integrate student research is part of LEADS 2025 Goal 2 – Elevate Research and Creativity. Physical Science Laboratory director, Jim Chavez, is working to create more SENSE-like collaborations with national labs and industry partners. Vice President of Research and Dean of the Graduate School, Cifuentes, “envisions dozens of students and post-doctoral fellows contributing to and benefiting from these interactions.”

**Left to right, NMSU Chancellor Arvizu, Sandia National Laboratories Labs Director Stephen Younger, Las Cruces Mayor Ken Miyagishima, and NMSU President John Floros. Photo by Hamid M. Rad, Research Administration Services**

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## 2019-2020 NMSU PI Academy

The 2019-2020 NMSU PI Academy kicked off this August with the annual welcoming dinner hosted by VPR Cifuentes. The dinner hosted the incoming 2019-2020 PI Academy members along with members of the 2019 Spring Academy, Academy session speakers, and new Provost Carol Parker.

The 12 members, represented from each campus college, will embark on a year long journey which will include 2 hour monthly sessions and include a visit to Washington D.C. The PI Academy will continue to follow the goals of NMSU’s LEADS 2025 to “Elevate Research and Creativity” by engaging the participants in the culture of sponsored research via interactions with experienced faculty, proposal development specialists and meetings with grant program officers.

The PI Academy is sponsored by the Office of the Vice President and supported by the Office of Research Administration. For more information you can contact Cindy Ramirez at [cindyram@nmsu.edu](mailto:cindyram@nmsu.edu).



**NMSU Provost Carol Parker (left) Assistant Professor of Psychology Marlena Fraune, and VP for Research and Dean of Graduate School Luis Cifuentes**

## NMSU Research and Creativity Week: Call for Abstracts

To celebrate ALL scholarly and creative activities here at NMSU, the University Research Council is organizing a 4-day series of activities at a variety of campus locations on **November 12-15, 2019**. Faculty, staff, and students (undergrad and graduate) are invited to participate! This will not be the usual series of lectures and posters that you might expect at a "conference". We are looking for all manner of presentations: short performances, multi-media installations, and, yes, talks and posters too. Whatever you do in the way of scholarly and creative activity, we want to highlight it!

In addition to your participation, we also are planning a range of other events:

- plenary talks by featured outside speakers
- Physical Sciences Laboratory Open House
- National Endowment for the Humanities will host a workshop
- evening mixer at Pete's Patio with open bar and live jazz
- presentations by recent Regents Professor awardees
- presentations by recent URC Awards recipients
- career development discussion for students
- and more...

Please be a part of this celebration! Submit an abstract for your presentation, whatever it may be, using the form available at <https://forms.gle/q4oDXrrSHST7yDxg7>. The deadline for abstract submission is **October 1, 2019**. Stay tuned for more updates as we finalize the program!



Submit your abstract [here](https://forms.gle/q4oDXrrSHST7yDxg7).

## Fall Graduate Student Orientation

The Graduate School held its first annual Fall Graduate Student Orientation on August 20th at in Corbett Center ballroom. Over 375 students, faculty, staff, and friends of NMSU attended. The Mayor of Las Cruces, Ken Miyagishima, President John Floros, Provost Carol Parker and Vice President for Student Success Renay Scott provided welcoming remarks.

Twenty-six university and local entities – such as the six colleges, Military and Veterans programs, LGBT+ Program, Memorial Medical Center, and Wells Fargo Bank, La Casa, La Pinon and Visit Las Cruces – hosted tables and provided information to the students. A panel of 11 campus services, including Aggie Health and Wellness, the Teaching Academy and the Police department, offered advice on assistance available to graduate students.

A scholarship drawing was held and four lucky students went home with five hundred dollars donated by the NMSU Foundation and the Office of the Vice President for Research and the Graduate School. The evening ended at Pete's Patio where graduate dean Luis Cifuentes and associate vice president for research and graduate studies, Luis Vazquez, shared fellowship with students in Counseling Psychology, Alternative Licensure, and Geography.

All in all, a great occasion organized by the wonderful staff in the Office of the Vice President for Research and Graduate School.

**Pictures: VPR Cifuentes (top) speaking at the Fall Graduate Student Orientation, middle: new graduate students attending the orientation, bottom: Teaching Academy's Dr. Morgan Iommi (sitting) answering a graduate student's question.**



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## Graduate School Update

The Graduate School has been progressing in several areas creating strides in developing opportunities for change. It has taken inventory of current resources and partnerships, restructuring, leveraging and maximizing the use of current resources. Such areas can be summed up as follows:

- A: communicating, negotiating, networking, creating strong partnerships (administration, staff, faculty, students, committees, boards, academies, analytics, community, legislators-national/state)
- B: developing an integrative collaborative marketing of services through (newsletter, university communications, brochures, Websites, Deans, Academic Associate Deans, Graduate Faculty Council, Graduate Program Directors, Central Administration)
- C: Creating an innovative developmental strategic plan of success as a cohesive, collaborative, partnership through the use of analytics, and other evidenced base information to make the best decisions possible contributing to the success of graduate students that have chosen NMSU as the University of Choice for Graduate Education.

Here are a list of a few of Graduate School Initiatives within the last 9 months that we have been creating, accomplishing and progressing with for the Graduate School:

- SLATE: Admissions to Graduation, Certification of Degrees, Retention
- Graduate Orientation and Enrollment for New Graduate Students
- Facebook, Instagram and gradinfo listserv
- Collaborating with the Teaching Academy for Workshops for Teaching Assistants
- Financial Literacy Modules



**AVPR Luis Vazquez**

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- Developing Graduate Faculty Coordinator Training
  - Policy Development related to assuring a Plan of Study from each discipline for Graduate Students.
  - Developing Quality Customer Services and Communication
  - Graduate Faculty and Student Council Collaborations
  - Redesign of Graduate School Website & Communication Plan with Students

The Graduate School has adopted the philosophy and belief that through a COLLECTIVE SENSE OF RESPONSIBILITY AND A COLLECTIVE SENSE OF ACCOUNTABILITY we will be successful in making a positive impact on Graduate Education for NMSU.

I would like to end with the Graduate School Motto:  
NEW MEXICO STATE UNIVERSITY  
BE BOLD. Shape the Future  
“THE UNIVERSITY OF CHOICE FOR GRADUATE EDUCATION”