

Focus: 50 to 100
Research Implementation Plan
Progress Report

December 2012

Introduction

This report documents institutional progress on the Research Implementation portion of the Focus 50-100 Strategic Plan since its last formal update in November 2011. Research goals were originally established through the Focus 50-100 Strategic Planning effort in 2008; they have since been revised and grouped to align with UNLV's Core Themes (below) that were developed to address requirements in the new NWCCU Standard 1. A revised Research Implementation Plan, with refined goals, performance indicators, and benchmarks, is in development and will be issued in Spring 2013.

Core Theme 1: Promote Student Learning and Success

1. Strategically use Access Funds and increase funding for graduate student stipends, scholarships, and fellowships to attract highly qualified students, especially at the doctoral level.

The Graduate College has dedicated the use of the Access Funds in the following ways:

- Graduate Access Retention Awards for 2012-2013 to help retain excellent graduate students who may be experiencing temporary financial difficulties. Students may receive up to \$3,500 to assist them in remaining in their graduate programs.
- Graduate Access Recruitment Awards for 2012-2013 to provide additional funding for the recruitment of excellent graduate students. Each academic college was provided \$20,000 to assist with targeted recruitment of outstanding new graduate students in order to diversify the graduate student body or to invest in targeted graduate programs that would benefit from enrollment growth.
- For international students with very high GPAs.
- For childcare scholarships for students with young children.

The Graduate College has also expanded support for McNair student scholars by increasing the number and amount of awards.

2. Leverage state-funded GA lines to encourage graduate student teaching, increase doctoral graduation rates, and promote research in targeted areas.

The Graduate College generated a new financial allocation model to distribute state GA funds to the academic college deans; this formula rewards programs that have assigned their state GAs to teaching, and it rewards doctoral enrollment and graduation rates. A minimum of 80% of state GAs are now required to teach at least six credits, or the equivalent, per semester. Finally, the Graduate College allocated approximately \$500,000 of state GA funds on the basis of competitive faculty grants to support graduate students as

research assistants on research projects that are relevant to the region and supportive of UNLV's strategic goals and mission.

3. Use electronic measures to provide greater convenience to students through streamlined business processes and to improve graduate student tracking, especially in areas such as admissions, retention, and progress toward degree.

The Graduate College tracks the time it takes for complete application files to be evaluated by admissions staff and has brought processing times down from an average of 32 days in 2010 to an average of about 2.3 days in 2012. The Graduate College also tracks the time it takes for a final decision to be processed after a recommendation is recorded by departments. Processing times have decreased from an average of 12 days in 2010 to 2.7 days in 2012.

Additionally, the Graduate College now electronically tracks the students who have applied for graduation to ensure that staff process the degree checks in a timely manner, which facilitates student progression to graduation.

The Graduate College also utilizes various aspects of MyUNLV to accomplish the following:

- Track student GPAs and send lists of students and their cumulative graduate GPAs to departments in the fall and the spring for monitoring and strategic intervention to help increase retention;
- Build in degree audit functions, so that students can track their degree requirement progress;
- Allow students to see what forms are required, which have already been submitted and approved, and which are still outstanding.

4. Provide new professional development opportunities for graduate students that encourage research, grant writing, and professionalization.

In 2012 the Graduate College initiated the Graduate Research Certificate, a free, value-added professional development program that provides graduate (and select undergraduate) students with the skills and knowledge necessary to initiate, conduct, and successfully conclude research projects. Once accepted into the program, participants must complete a minimum of six approved campus workshops and then complete a culminating experience. The Graduate College is also currently working to develop a Teaching Certificate Program for 2013.

The Graduate College is collaborating with the Office of Sponsored Programs to offer a workshop on grant writing for graduate students; working with the Office of Research Integrity on Responsible Conduct of Research training to encourage graduate student participation and to teach a workshop on mentorship; coordinating with the Faculty Mentoring Program to create and offer the following

- A doctoral student workshop on preparing for the academic job market;

- A training session for undergraduates on preparing for graduate school;
- Professional development sessions and roundtables for graduate students (offered jointly with the GPSA in the new Graduate Commons).

5. Coordinate with graduate programs to encourage strategic recruitment of high quality applicants and diversity in admissions cohorts.

The aim of the Graduate Access Recruitment Awards is to meet the strategic goals of recruiting outstanding applicants and diversifying the graduate student body.

The Graduate College works with interested representatives of graduate programs to design and create fast-track programs for the best and brightest undergraduate majors to advance into their graduate program earlier and to finish sooner.

6. Strategically build graduate program staffing commensurate with the number of programs and students.

The Graduate College has not added any new staff positions, but it needs to do so in order to provide the full range of support necessary for graduate student success and to support graduate faculty and graduate programs.

7. Facilitate the creation of innovative, dual-degree graduate programs to encourage student research and scholarship across disciplinary boundaries.

The Graduate College has facilitated and supported the development of several dual graduate degree programs, including MBAs offered in conjunction with the following programs:

- Hotel/Law/Dental/MIS
- Social Work/Law
- Special Ed & Ed Psych/Law
- Math/Economics
- Math/Electrical Engineering

The Graduate College continues to work with other departments to explore additional dual-degree offerings. The Graduate College is also working to develop a series of broad-reaching changes to existing policy to support and encourage interdisciplinary graduate student research, scholarship, and creative activity.

8. Expand student learning experiences by increasing the opportunities for graduate and undergraduate involvement in research and scholarship.

In 2012 the Graduate College initiated the Graduate Research Certificate, a free, value-added professional development program that provides graduate (and select undergraduate) students with the skills and knowledge necessary to initiate, conduct, and

successfully conclude research projects. Undergraduate honors students and McNair scholars are also invited to participate in this program.

The 2012 Graduate and Professional Student Research Forum was the largest ever, with more than 160 poster and panel presentations. The annual forum provides an opportunity for graduate and professional students to showcase their research projects.

The GPSA began hosting a series of multidisciplinary Research Brown Bag sessions for graduate students in 2012. Recent programs featured a series of two graduate and/or professional students from designated academic colleges sharing their research. The Job Market Brown Bag series provides information from faculty members in a variety of disciplines on how the job market works and how students can prepare effectively for post-graduation success. Topics included the importance of networking, finding internships, effective interviewing, and strengthening the curriculum vitae.

Core Theme 2: Advance and Support Research, Scholarship, Creative Activity, and Sustainability

9. Provide seed-grant funding that will help new and established faculty members to increase the amount of innovative and transformative basic research funded through competitive solicitations.

The Division of Research and Graduate Studies, in collaboration with the Office of the President, established the Faculty Opportunity Awards in 2011, with the first 30 awards made in Spring 2012 totaling \$500,000 in support. Two categories of this award specifically require a competitive grant submission as a deliverable. The FOA program was expanded in 2012 (for awards in Spring 2013) to include an additional category to encourage technology development leading to new research disclosures. The 2013 award funding totals \$400,000.

10. Develop internal funding opportunities for faculty to complete scholarly activities in disciplines not traditionally able to secure competitive extramural awards.

The 2011-2012 Faculty Opportunity Award program established a category of awards for Scholarly and Creative Activities. This category provided support of up to \$10,000 per recipient to complete a scholarly project in disciplines that typically have few options for securing extramural awards. The 2013 program will provide awards ranging between \$5,000 and \$25,000 for proposals of this nature.

11. Work with external partners to increase applied and translational research by actively pursuing venture capital, seed investment, business incubation, planning and start-ups.

UNLV currently has two active licensing agreements for the use of Chimera, a software application; one is with the NSHE, and another with Western Washington University. The university has assigned the rights to five additional forms of intellectual property back to the faculty inventors with the stipulation that if any revenue is produced, the university would receive a portion of those royalties. Planning is under way on several faculty-led start-up companies, but no official developments have occurred as of December 2012.

Representatives of the Office of Economic Development have made numerous outreach efforts to various investment groups in the community and state, including the Vegas Valley Angels (an angel investor group), the Las Vegas Tech Fund, and venture capitalist companies.

As of January 2013, the Office of Economic Development will manage the former Small Business Development Center and re-focus its mission on technology companies and entrepreneurial start-ups. The newly named UNLV Business Startup Center will collaborate with the Governor's Office of Economic Development (GOED) on the economic impact of new business and start-up development and align efforts with the GOED sector specialists to focus on the areas with the most potential for economic impact and job creation. It will also identify the primary industry clusters that indicate increased opportunity for economic impact and shift the expertise of the business counselors into those economic ecosystems. Additionally, the center will assist the regional economic development agencies with programs that provide increased stimulus and recovery to the region.

The HRC currently works with several campus faculty members in the Colleges of Engineering and Sciences in developing the following external partnerships on various projects:

- Varian and NSTec for the planning of the Accelerator Center
- Oak Ridge National Laboratory, the University of Tennessee, Mississippi State University, and Louisiana State University in planning the Cyber Security Initiative.
- Korean Midland Power Company, Ltd. on the Boulder City Solar Project

12. Increase clustered research hires to build critical mass in specific research areas that are consistent with the university's strategic plan.

Seventy-eight faculty hires were made in 2012 in departments across campus in a variety of disciplines; modest success is noted in clustered research hires. Perhaps the most notable cluster targeted was biomedical research; some small clusters (with both new hires and existing faculty) are seen in security engineering, materials, and water.

13. Reinvigorate the UNLV Research Council and continue outreach efforts with faculty stakeholders to create a campus-wide culture of excellence in research and scholarship.

The Research Council was restructured with new members and a revised mission statement in spring 2012. The outreach of the council has been broadened by having

members serve as representatives on a variety of campus committees, including the IT Master Plan, Campus Physical Master Plan, Integrate2 Steering Committee, and strategic planning sub-committees.

The Division of Research and Graduate Studies held a forum titled “Got Research” for new faculty to offer guidance on services for researchers. Approximately 40 new faculty members heard presentations from the office of Sponsored Programs, Economic Development, and Research Integrity, as well as the Graduate College.

The offices of Sponsored Programs and Research Integrity continue to reach out to faculty with training and targeted guidance on preparation of proposals and protocols that support the conduct of excellent research and scholarship.

14. Continue educating the general public about the value of research and graduate education and publicize university research activities more broadly.

The research website was recently updated to reflect university web branding with a more sophisticated design template and several new features.

A website on economic development was launched over the summer of 2012 containing new material on research capabilities, expertise clusters, and industry-sponsored research.

UNLV Innovation, the university’s research magazine, carried stories on recent National Science Foundation CAREER Award recipients as well as recent winners of the Harry Reid Silver State Research Award.

The Graduate College produced a pocket guide on campus services and other tips; it also produced instructional online videos on various Graduate College and institutional processes for graduate students.

The Graduate College has created Facebook and Twitter pages, as well as a YouTube channel, to build social media relationships and enhance communications.

15. Establish a university-wide mentorship program to foster the professional development of junior faculty members, and encourage smaller mentorship initiatives at the unit level.

The institutional Faculty Mentoring Program was designed in 2011 and staffed in 2012 to provide a comprehensive program for new faculty hires and junior faculty to ensure their successful transition to university life at UNLV.

The College of Sciences has started a Grants Club, in which more experienced faculty offer guidance to junior faculty on how to obtain external funding. Life Sciences professor Marty Schiller is leading this group.

The College of Engineering has hired a grant writer to assist faculty in proposal development, and faculty members in Civil Engineering also actively mentor junior faculty on external funding proposal development.

The Consortium for Faculty Professional Opportunities (CFPO) includes representatives from university units that have faculty support and professional development as part of their mission. CFPO members work together to facilitate conversations, leverage resources, share expertise, seek opportunities, develop programming, and, in general, foster a faculty climate of innovation and support, collaborating on faculty professional development efforts in the enhancement of research, teaching, and learning.

16. Create and adequately fund core facilities (e.g., buildings and laboratories) to enable collaborative research.

More than a dozen core facilities are up and running in the Science and Engineering Building (SEB), including the newly established Graphics and Visualization Laboratory. A “clean room” where nanotechnology construction occurs was also recently completed, and planning is under way for development of an SEB aquatic facility to support new faculty research on aquatic species.

The National Supercomputing Center is currently designing and building an advanced Research Visualization Facility (RVF). This initiative will provide the university with unique hardware, robust software, and essential infrastructure resources in support of the University research community. The RVF, to be located in the new Science and Engineering building, offers the UNLV research community and visiting researchers the ability to visually analyze and compare results of advanced computer simulations

The National Supercomputing Center in partnership with Switch Communications is currently designing and building a Research Cloud Computing environment. Compelling reasons for porting over to a cloud environment include a better test environment for software developers, smoother deployment for the research community, substantial reduction in costs, and an increase in service levels.

The Varian Corp. has donated equipment for a new Accelerator Center, located in the northwest area of campus that will facilitate new sophisticated collaborative research projects. The President’s Office and the HRC have invested in the development of the center.

17. Reward collaborative research in promotion and tenure and/or annual review and merit.

No formal guidelines or recommendations have been advanced on this goal; merit has not been available for several years. The Executive Vice President and Provost’s Office is undertaking discussions with campus constituents about collaborative research, how it can be rewarded, and barriers to its success. Collaboration is also part of the discussion in the development of the CORE initiative (discussed under Core Theme 3).

18. Use the Digital Measures project to create a research expertise database and develop necessary electronic applications to facilitate faculty efforts to identify prospective collaborators.

Digital Measures, which is housed in the Executive Vice President and Provost's Office, is making modest implementation progress and will soon move into three more colleges; the Division of Research and Graduate Studies has worked with university's technical lead to ensure that information on research activities, including intellectual property development, sponsored projects, and research expertise are appropriately represented on Digital Measures screens so that relevant information is collected from faculty.

As a stop-gap measure until Digital Measure produces comprehensive data on faculty research expertise, the Division of Research and Graduate Studies has created a master list of faculty expertise, located at

<http://www.unlv.edu/sites/default/files/24/ResearchExpertiseClusters-MasterListOfFacultyExpertise-Oct2012.xlsx>.

The Division of Research and Graduate Studies has also mapped active sponsored projects to economic development sectors identified by the Nevada Governor's Office on Economic Development; it can be found at <http://www.unlv.edu/research/active-sponsored-projects>.

19. Increase quality and productivity of research, scholarship, and creative activity at the college/unit level by establishing clear goals and metrics.

The Office of Sponsored Programs created a quarterly metric report for distribution to all deans, VPs, and major center directors to document trends for proposals, awards, and expenditures so administrators can evaluate performance in their areas of responsibility. Broad distribution began April 2012.

20. Maintain moderate teaching loads for research-productive faculty that align with accountability measures of each campus unit and provide other incentives for faculty to write quality, competitive proposals to external funding agencies.

Recent budget cuts have prevented movement on this goal. Faculty workload data indicate faculty teaching loads (in terms of number of students taught) increased as the number of full-time faculty decreased.

The Faculty Opportunity Awards, created last year and continued this year, are designed to provide incentives for faculty to write quality, competitive proposals to external funding agencies.

21. Provide funding for lab start-up, summer salary, first-year grant development, travel, and other resources and staffing (such as post-docs) to increase research and scholarship.

The Division of Research and Graduate Studies provided \$900,000 for laboratory start-ups, and the aforementioned Faculty Opportunity Awards have provided support for first-year grant development and will do so in the future. However, no specific new funding was dedicated to summer salaries, travel, or post-doc hiring, although the Faculty Opportunity Awards program tangentially provides some funding for travel and post-doc employment.

22. Increase the number of endowed chairs and raise private funds directed toward nationally competitive graduate assistantships, fellowships, and scholarships.

The Graduate College has added approximately \$140,000 in UNLV Foundation-funded scholarships and fellowships. More than \$700,000 has been added for doctoral-level graduate assistantships (though the funding has emanated from the state rather than private sources).

Endowed chairs have been established in the Business and Hotel Administration Colleges with private funding.

23. Re-establish a Technology Transfer Office to oversee and ensure faster development of technology commercialization.

This office has been re-established. It is now housed within the Office of Economic Development and is staffed half-time by Mark Litman, a patent attorney with 40 years of corporate and private practice experience in intellectual property law. Since Mr. Litman was appointed in May 2012, four disclosures and six provisional applications have been filed, with another three provisional applications in progress. The Office of the President also appointed a Special Advisor to the President for Regional Development, who devotes much of his time to fostering technology development. The university's Intellectual Property Committee was also restructured in 2011 and now meets monthly to review research disclosures from faculty.

24. Strategically build research staffing in key areas, commensurate with sponsored program and technology transfer activity.

No new staffing has been provided in the Office of Sponsored Programs or the Office of Research Integrity, but three new staff members have been hired in the Office of Economic Development, and one is specifically dedicated to technology transfer and development.

25. Continue providing funds for competitive grant-writing to improve the overall quality of proposals being submitted by faculty members.

The Howard R. Hughes College of Engineering has hired a grant writer to assist with grant proposal development. The Division of Research and Graduate Studies provides funding on an as-needed basis to members of the campus community; however, no requests were made last year.

The Office of Sponsored Programs continues to provide guidance to faculty on proposal development, and it recently redesigned its website with special emphasis on providing tools and resources for faculty to increase the number of proposals and improve their quality. The office provides two training workshops per semester for faculty.

26. Elicit campus cooperation to provide the data needed for the university to submit a strong federal F&A application.

Full campus cooperation was instrumental as OSP recently completed the full F&A proposal. UNLV is currently in negotiations with the federal government to finalize its new rate, an increase is anticipated, which will allow UNLV to recover more F&A to support ongoing research endeavors.

27. Improve compliance communication and education.

OSP has continued to offer tailored training and workshops to promote compliance as well as share resources available to faculty to locate funding opportunities and tools to improve the quality of their proposals. Workshops that have been offered include:

- Locating Funding Opportunities
- Developing Proposal Budgets
- Grant Writing Tips Offered by Successful PIs
- How to Monitor your Sponsored Program Account

OSP developed a comprehensive Pre- and Post-Award Training Manual to train new administrators/accountants and provide a resource to experienced team members. The manual promotes consistency, documents policies and procedures, and encourages compliance in all areas of sponsored programs.

More than 1,500 UNLV faculty, staff and students participated in online training on research compliance offered through the Collaborative Institutional Training Institute (CITI) from Nov. 2011 to December 2012.

The Office of Research Integrity -- Human Subjects staff provided a weekly open-house at which researchers can meet in person to discuss protocol-specific issues, and ORI staff also provided face-to-face instruction in research methods classes on submitting protocols to the IRB.

The Office of Research Integrity prepared a briefing on export control compliance and education issues for the division administration.

28. Implement research-related electronic initiatives, especially protocol service for IRBs and grant routing for sponsored programs.

The Office of Sponsored Programs recently redesigned its website to improve navigation. In addition to reorganizing content so necessary information is easily accessible, a new

“how to” section was added to provide resources for faculty members to assist in each step of the sponsored program process, from locating funding to award closeout. All resources and tools are geared to promoting an environment of compliance at the university/

In 2012, 275 new human subjects research protocols were submitted electronically and processed by the Office of Research Integrity – Human Subjects; the average IRB turnaround for 95 percent of them (through expedited processes) was 13 business days. Total turnaround time for all categories of review is comparable to the national average calculated by the Association for the Accreditation of Human Research Protection Programs.

In the last year the Office of Research Integrity has introduced a satisfaction survey for those who have submitted human subjects research protocols. Initial results indicate 67% of the respondents are using the CyberIRB online submission system, and approximately 70% of respondents are satisfied/very satisfied with ease of use. Eighty-three percent were satisfied/very satisfied with convenience. The greatest degree of dissatisfaction was expressed in regard to protocol processing time, with a 10.9% response indicating dissatisfaction; however, more than 77% expressed satisfaction on this variable.

29. Improve research protocols and encourage faculty and graduate student participation in Responsible Conduct of Research training.

The Office of Research Integrity-Human Subjects is discussing several possible actions related to this goal, such as training department liaisons to the IRB, providing targeted outreach to departments and colleges that submit a high volume of research protocols, and revising the user satisfaction survey to more specifically address investigators' issues.

Since 2010, 93 faculty and graduate students have completed Responsible Conduct of Research training.

Core Theme 3: Foster Inclusion and Community Engagement

30. Develop interdisciplinary research teams and graduate programs that address the needs of the community, state, and region.

Plans are under way to establish Collaborative Research and Education (CORE), an initiative designed to advance excellence in collaborative scholarship and address societal challenges. It will make use of existing interdisciplinary centers/institutes and is designed to promote a shift in campus culture and its reward structure.

The National Supercomputing Center is currently collaborating with the Cleveland Clinic on an NIH COBRE proposal entitled “Center for Neurodegeneration and Translational Neuroscience.” The proposal will support two UNLV faculty investigators from UNLV's School of Community Health Sciences and the Department of Psychology.

National Supercomputing Center is currently collaborating with DOE's "Advanced Simulation Capability for Environmental Management" (ASCEM). ASCEM is a state-of-the-art scientific tool and approach for understanding and predicting contaminant fate and transport in natural and engineered systems. Multiple internal funding opportunities for faculty in the areas of science and engineering are anticipated.

The Graduate College has facilitated and supported the development of several dual graduate degree programs (discussed in goal #7) and continues to work with other departments to do so. The Graduate College is also working on developing a series of broad-reaching changes to existing policy to support and encourage interdisciplinary graduate student research, scholarship, and creative activity.

Strategic alignment of research and education initiatives has been developed in response to anticipated resources in the state Knowledge Fund. Areas of emphasis that align with state and regional economic development needs include biomedical, cybersecurity, unmanned aerial systems, security engineering and technology, logistics and hospitality, entrepreneurship, and information technology.

The HRC also seeks to develop interdisciplinary research teams. Current research projects at HRC include collaborations with 18 faculty members in five colleges across UNLV.

31. Facilitate collaboration with outside research partners to promote community partnerships and economic diversification.

The university has established collaborative relationships with a variety of private and public-sector partners, including NSTec, the Varian Medical Systems, the Lou Ruvo Center for Brain Health, and Switch Communication. The university is also investigating a partnership with Lohocla Research Corporation of Aurora, Colorado, to house its scientists and grants at UNLV.

Additionally, the Office of Economic Development has been established and is actively engaged with the business community to open communication pathways to assess industry research needs and align these needs within the universities research hubs.

The former Small Business Development Center has been renamed the UNLV Business Startup Center and will now report to the Office of Economic Development. Its revised mission will more specifically address the technology/entrepreneurship market in the greater Las Vegas area.

The HRC is partnering with the following organizations, including Rocky Research; Southwest Gas; TerraPower; Integration Innovation, Inc.; Ceramtec, Inc.; and the Stanford Linear Accelerator Center.

32. Establish an Office of Economic Development to ensure the university becomes a recognized partner in state and regional economic development, and a leader in entrepreneurial activity.

The Office of Economic Development was established in 2012 and has initiated an aggressive outreach program to partner with both state and local economic development agencies, including the Nevada Governor's Office on Economic Development and the Nevada Development Authority. Additionally, the Office of Economic Development has assumed management of the UNLV Business Startup Center to assist and promote entrepreneurship both on campus and within the community.