

Pathway Goal:

Action Item #
1-4

Report:
 Mid-Year: December 2016
 Year-End: April 2017

Action Item Description:

Develop plans and strategies for increasing competitive grant applications and entrepreneurial funding opportunities.

Submitted By:

Name	Department
Kwang Kim	Mechanical Engineering/Engineering

Working Group Members:

Name	Department
Eche Ezeanolue	School of Community Health Sciences
Chris Stream	School of Public Policy and Leadership, Greenspun College of Urban Affairs
John Farley	Department of Physics and Astronomy, College of Science
David Paul (as a consultant)	Office of Sponsored Project
UNLV Dean's council (advisors)	

Provide a written overview of the year-long process for your working group. (You may use the "Process and Timeline" information from your action plan, if still applicable.)

We (Kim, Ezeanolue, Stream, and Farley) were recommended to serve on this sub-committee on 07/22/2016 and assigned to identify one item to work on regarding the overarching subject of "strategies for increasing grant proposal activities, etc." Thus we picked an idea "how to help Tenure-Track faculty to establish long-term research grant activities." As of today (11/22/2016) we have looked at some data on the status of research grants/contracts activities of UNLV and made a short document. Also, we asked the Deans' Council regarding support structures for grants/contracts activities within each college. The next step is to put together a few questioners to the TT assistant professors to find out what are the needs for them to be successful in grants writing, external contracts, etc.

What will your final product be at the end of the year? Such as, what metrics which will be used to assess your progress/achievement, will a report be generated, etc?

We will produce a reporting document contains findings and recommendations to the chair of this committee (Rama Venkat and Kate Korgan). Also see attached.

Describe what has been accomplished so far this year.

See section "process and timeline."

Next steps

See section "process and timeline."

You may have additional reference material. Please review the list below and click on the appropriate box to select.

No additional reference material

OR

Potential resources required (if identified)

Any reports generated by this working group (if completed at this time)

Metrics to be used

Any additional information you wish to share.

Assuming that our report will be reviewed by the central administration, it will be nice of the UNLV's central administration (or other interesting parties) to provide us with some feedback before we put together the final report in Spring 2017.

Research, Scholarship, and Creative Activity (RSCA)

(FY 2017: Top Tier Subcommittee #2-3 Assignment)

“Develop plans & strategies for increasing competitive grant applications & entrepreneurial funding opportunities”

A short report prepared by:

Kwang Kim, Faculty of Mechanical Engineering, Howard R. Hugh College of Engineering
Eche Ezeanolue, Faculty of School of Community Health Sciences
Chris Stream, Faculty of School of Public Policy and Leadership, Greenspun College of Urban Affairs
John Farley, Faculty of Department of Physics and Astronomy, College of Science

In consultation with:

David Paul, Director of Office of Sponsored Project & UNLV Deans' Council
Ronald Brown, Dean of Allied Health Sciences
Shawn Gerstenberger, Dean of School of Community Health Science
Brent Hathaway, Dean of Business
Nancy Juscher, Dean of College of Fine Arts
Kate Korgan, Dean of Graduate School
Marta Meana, Dean of Honors College
Kim Metcalf, Dean of College of Education
Stowe Shoemaker, Dean of William F. Harrah College of Hotel Administration
Robert Ulmer, Dean of Greenspun College of Urban Affairs
Rama Venkat, Dean of Howard R. Hughes College of Engineering
Carolyn Yucha, Acting Vice President for Research and Economic Development; Professor and Dean, School of Nursing
Karen P. West, Dean of School of Dental Medicine

Submitted to:

Rama Venkat and Kate Korgan, Chairs of RSCA

(November 22, 2016)

UNLV



RSCA Top Tier Subcommittee #2-3 Assignment

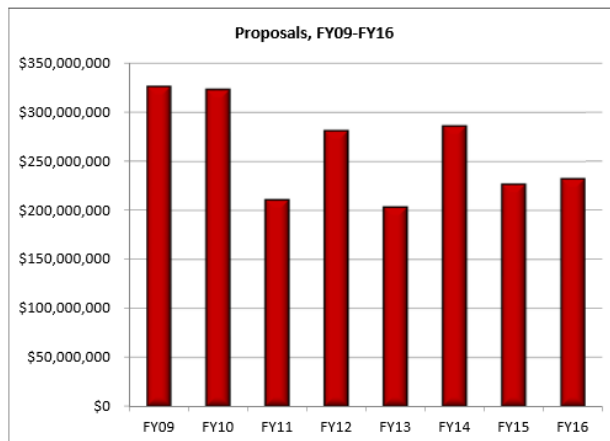
DEVELOP PLANS & STRATEGIES FOR INCREASING COMPETITIVE GRANT APPLICATIONS & ENTREPRENEURIAL FUNDING OPPORTUNITIES!!

Some Background Information and Thoughts

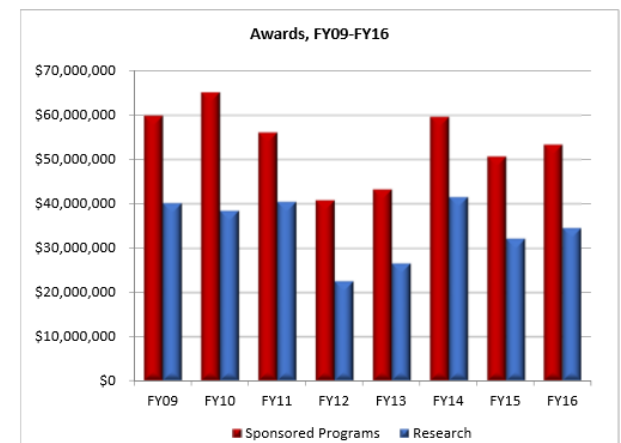
- Probably the most important goal of the Top Tier initiative is for UNLV to achieve AT LEAST \$120 M/YEAR of “SPONSORED” research expenditure by 2025⁽ⁱ⁾.
- Where UNLV is NOW?
 - FY16 sponsored research expenditure of \$30.5M.
 - FY16 sponsored research awards of \$34.5M.
 - FY16 sponsored proposals of \$232.3M.
 - Note: **Approximately 12-13% (in terms of \$ volume)** of the submitted sponsored proposals are materialized (the actual rate for sponsored research is probably less than this number?).
- In reality, having the current success rate at around 12-13% (**may be slightly different?**), UNLV needs either to improve its funding rate or to submit more proposals?
 - **For example, \$1B/year proposal submission will produce about \$100-130M research awards (10-13%)?**

FY09-16 Average Research Awards = \$34.5M
FY09-16 Average Research Expenditure = \$31.6M
FY09-16 Average Proposal for all sponsored programs \$ Amount = \$261.3M

PROPOSALS	
FY09	\$326,594,089
FY10	\$323,327,776
FY11	\$210,857,602
FY12	\$281,270,704
FY13	\$203,337,011
FY14	\$286,087,223
FY15	\$226,756,850
FY16	\$232,302,785
AVG	\$261,316,755



AWARDS		
	Sponsored Programs	Research
FY09	\$59,874,418	\$40,097,479
FY10	\$65,222,872	\$38,381,001
FY11	\$56,090,962	\$40,398,054
FY12	\$40,772,216	\$22,565,629
FY13	\$43,204,579	\$26,585,099
FY14	\$59,636,152	\$41,477,222
FY15	\$50,658,340	\$32,082,224
FY16	\$53,357,694	\$34,493,983
AVG	\$53,602,154	\$34,510,086

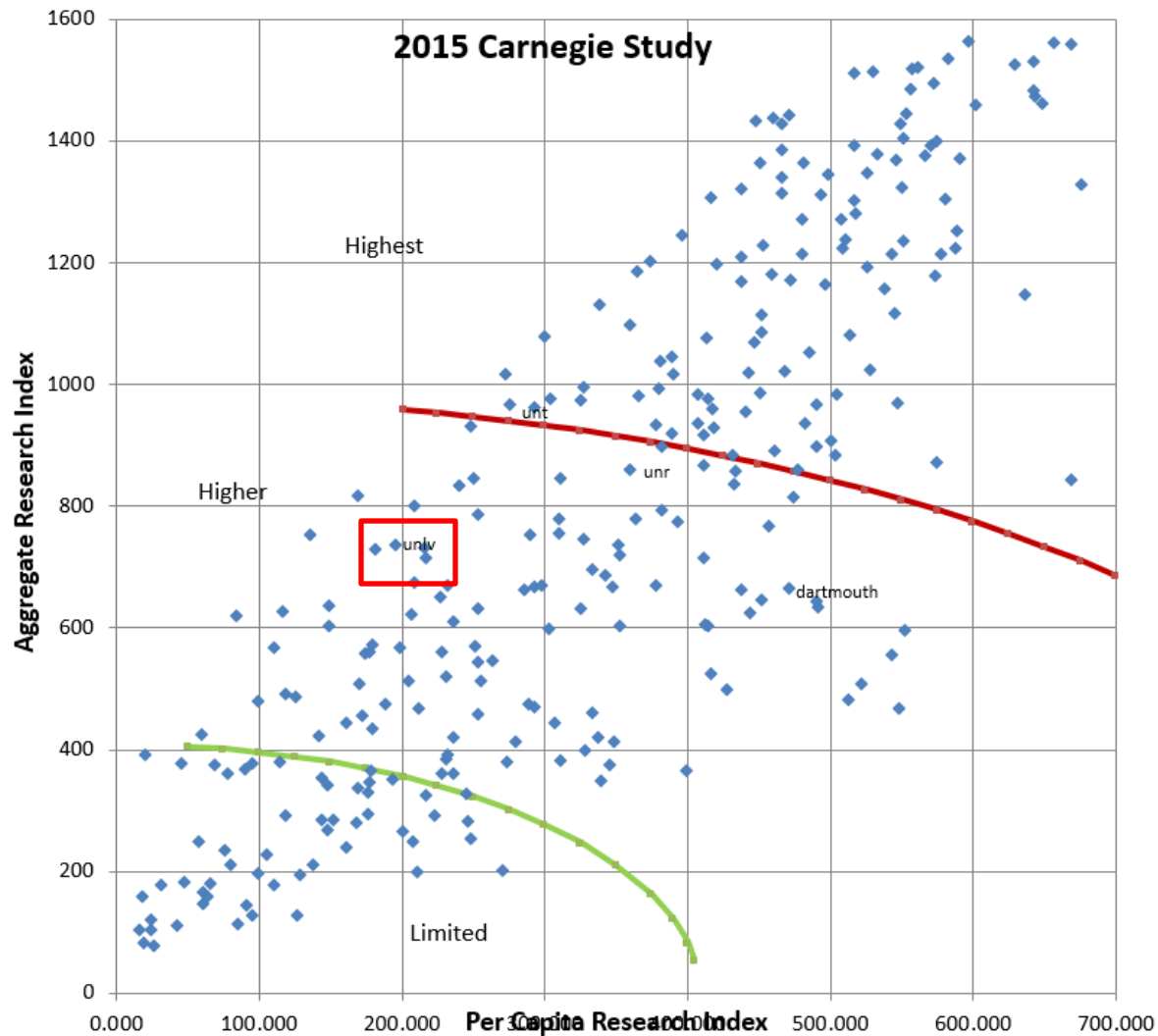


⁽ⁱ⁾ In FY 2016, the targeted \$ amount was changed from \$150M to \$120M.

2015 Carnegie Study

(credit to Dr. Jim Thompson to reproduce the data)

(UNLV was not able to improve in both ARI and CRI compared to the previous study?)



Some Naive Comparison (peer institutions?)

- **UNLV**

- FY16 Research proposals of \$232.3M.
- FY16 Research awards of \$34.5M (~15% conversion).

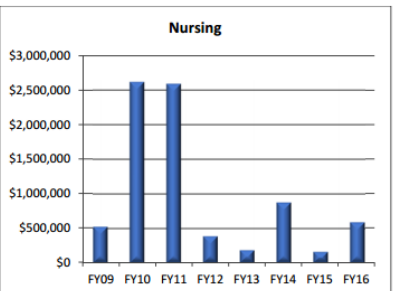
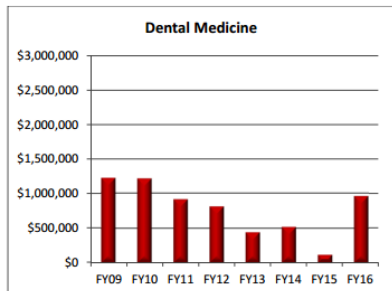
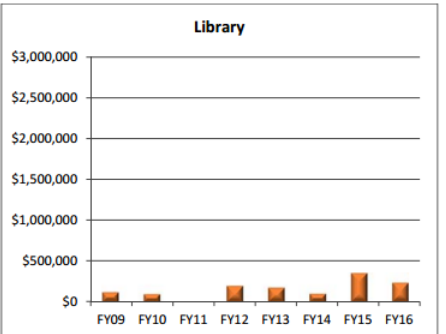
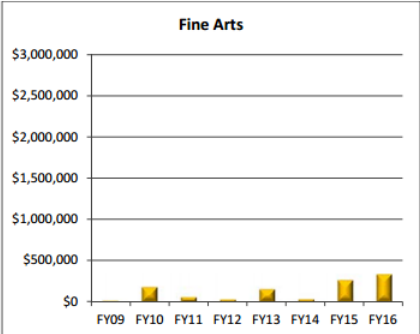
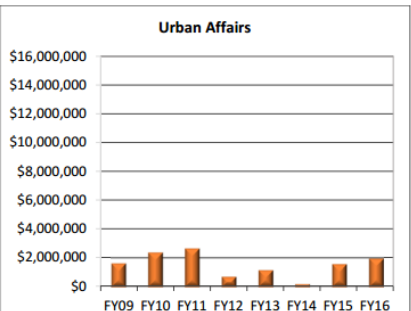
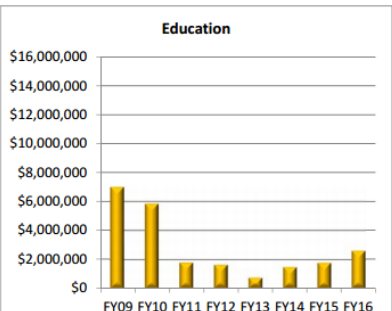
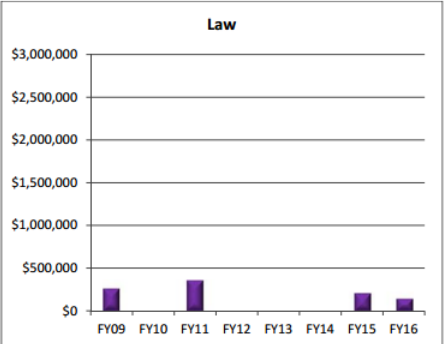
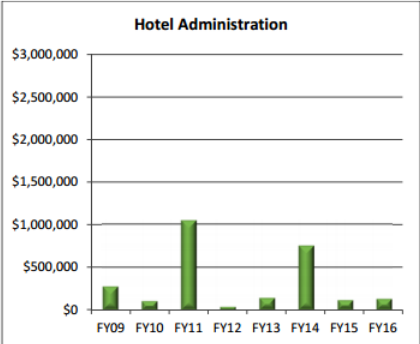
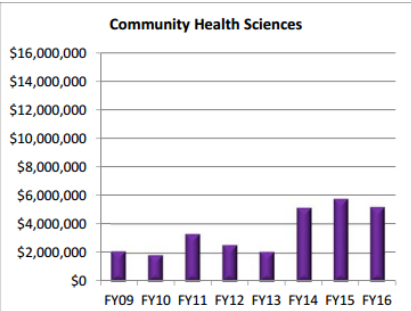
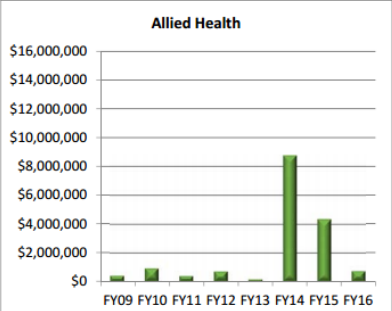
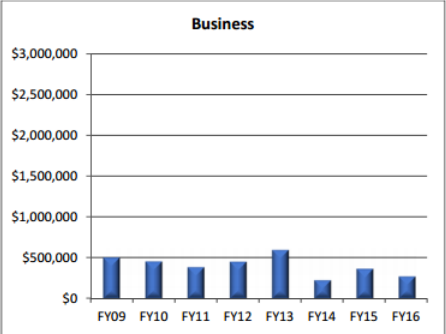
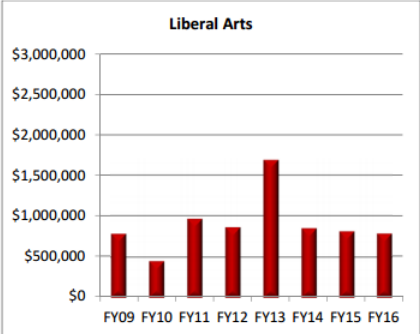
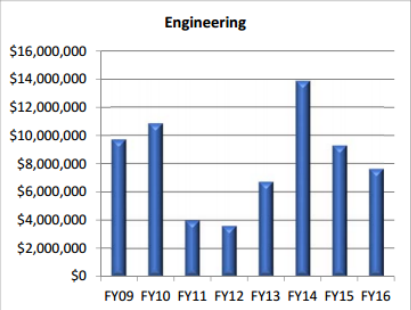
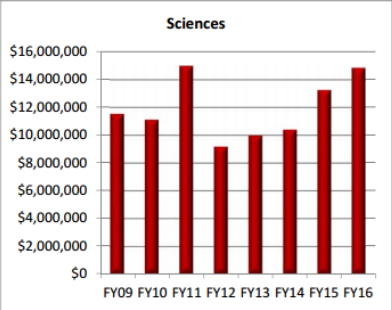
UNLV is annually producing
of Proposals 500-600
F&A generated ~ \$7M

- **Univ. of Houston** (www.uh.edu/research)
 - FY14 Research proposals of \$737.0M.
 - FY14 Research awards of \$119.0M (~16% conversion).
- **Univ. of Central Florida** (www.ucf.edu/research)
 - FY13 Research proposals of \$622.8M.
 - FY13 Research awards of \$113.2M (~18% conversion).
- **Univ. of New Mexico** (www.unm.edu/research-reports)
 - FY15 Research proposals of \$402.6M.
 - FY15 Research awards of \$124.2M (~30% conversion).

Our peer institutions
are annually producing
of Proposals > 1,000
F&A generated > \$20M

- **Q: By 2021, short-term goals (?)** – it could be very stiff goal(s)
 - UNLV probably needs to write proposals ~\$500M annually by 2021.
 - UNLV probably needs to improve the success rate to ~15% by 2021.
 - **This will help UNLV produce about \$75M sponsored research annually.**
 - **Q: Not 100% sure these goals area realistic or not?**

Funding by UNLV College/Unit



“Sponsored” Funding by UNLV College/Unit/Faculty Head Count (FY15) (Includes Research + Other Sponsored Projects)

EXAMPLE CASE

FY15 Top 5 colleges/units

Eng.: \$134K/faculty (#69)
 Sciences: \$102K/faculty (#130)
 DHS: \$ 77K/faculty (#145 [4+20+36+55])
 Edu.: \$ 24k/faculty (#73)
 UA.: \$ 21k/faculty (#71)

FY16 sponsored projects award of TT Assistant Professors as the PI

Eng.: \$0.52M out of \$7.6M (6.8% by 6 TTAP)
 Sciences: \$1.67M out of \$12.84M (11.2% by 6 TTAP)
 DHS: \$0.73M out of \$7.4M (10% by 8 TTAP)
Edu.: \$1.79M out of 2.61M (67% by 7 TTAP)
 UA.: \$0.18M out of \$1.94M (9% by 1 TTAP)

FY16 Top 10 Faculty Awardees (sponsored work):

TOTAL~\$15M (~30% of the total UNLV awards)

\$3.133M (Sciences); \$2.511M (DHS); \$1.745M (VPR);
 \$1.735M (Eng.); \$1.440M (Sciences); \$1.318M (Eng.);
 \$1.136M (Sciences); \$0.858M (DHS); \$0.751M (Eng.); and
 \$0.739M (Sciences)

FY16 TTAP awardees greater than \$100K (rank II)

6 from Edu
 6 from Sciences (\$580K by a rank II faculty is the largest)
 2 from DHS
 1 from Eng.
 1 from UA

UNLV AWARD DATA | FY15

Funding by College/Unit	Awards	Amount
Sciences	109	13,253,233
Student Life	20	11,163,804
Div Health Sciences	59	10,350,011
Engineering	103	9,266,658
Education	22	1,776,332
Urban Affairs	10	1,558,050
Liberal Arts	8	815,220
Provost	6	427,205
VPRED	2	419,500
Business	10	362,335
Library	2	343,770
President's Office	2	337,605
Fine Arts	6	253,837
Law School	4	202,780
Hotel Administration	2	116,000
VPEO	2	12,000
Total	367	\$50,658,340

Fall 2014 UNLV Faculty Data

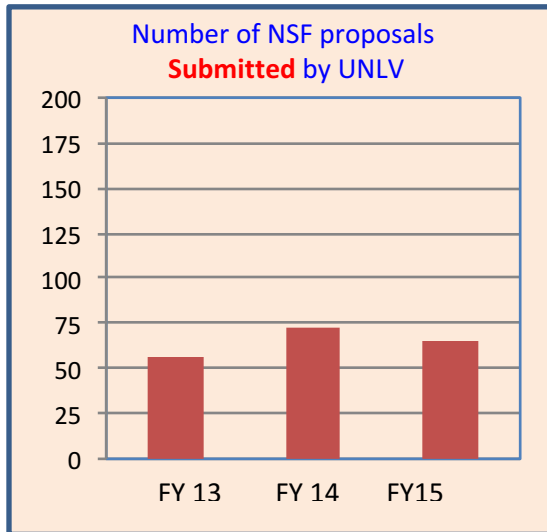
College	Total ²	Male			Female		
		Tenured/ Tenure-Track	Tenured	Tenured as % of T/TT	Tenured/ Tenure-Track	Tenured	Tenured as % of T/TT
Academic Success Center	3	0	0	NA	0	0	NA
Allied Health Sciences	34	15	10	66.7	8	4	50.0
Business	76	56	44	78.6	11	8	72.7
Community Health Sciences	20	8	3	37.5	7	4	57.1
Dental Medicine	55	6	6	100.0	4	3	75.0
Education	73	30	22	73.3	30	19	63.3
Engineering	69	56	49	87.5	7	5	71.4
Fine Arts	91	53	40	75.5	23	15	65.2
Honors College	5	0	0	NA	0	0	NA
Hotel Administration	46	20	18	90.0	12	7	58.3
Law	40	11	7	63.6	23	16	69.6
Liberal Arts	163	85	70	82.4	48	35	72.9
Nursing	36	2	0	0.0	15	7	46.7
Sciences	130	80	74	92.5	21	14	66.7
Urban Affairs	71	23	21	91.3	26	16	61.5
Other	6	3	3	100.0	1	1	100.0
University Totals	918	448	367	81.9	236	154	65.3

RSCA Top Tier Subcommittee #2-3 Assignment

Develop plans & strategies for increasing competitive grant applications & entrepreneurial funding opportunities

AN EXAMPLE UNLV DATA for FY13-FY15: National Science Foundation

1. Number of NSF grant proposals “directly” submitted by UNLV annually is low.
2. Large volume (>\$1M)/flagship grants “directly” submitted/received by UNLV is low.
 - 14 submissions
 - Since 1976 (Fastlane data): 4 grants > \$1M
3. **Number of NSF CAREER awards “directly” received by UNLV**
 - Total 11 awards (5 left UNLV): Luke (1998, the first?), Bae*, Ahmad, Fu*, Rennels, Sapochak*, Lee, van Breukelen, Piechota*, Hedlund, and Snook* (*left UNLV) – **None after 2009**.
 - The NSF/CAREER program is designed for TT faculty to build their academic career via research/education (5 yr. program)



Zip Code	Institution	# of Active NSF Grants	# of Active CAREER Awards
84112	U of Utah	303	29
77204	University of Houston	167	23
97403	University of Oregon (no Engineering)	154	9
32816	University of Central Florida	131	14
89557	UNR	94	4
92182	San Diego State University	82	2
89154	UNLV	40	0

(NSF data as of November 19, 2016)



RSCA Top Tier Subcommittee #2-3 Assignment

Develop plans & strategies for increasing competitive grant applications & entrepreneurial funding opportunities

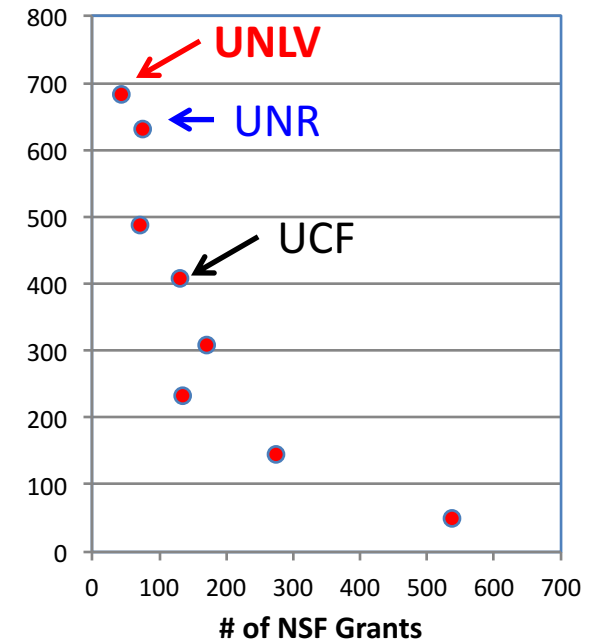
Best Global Universities (BGU) Ranking*



UNLV Referenced/Peer Institutions (?)	# of Active NSF Grants	Best Global Universities Ranking
UC Boulder	543	#46
U of Utah	278	#140
University of Houston	174	#303
University of Oregon (no Engineering)	141	#227
University of Central Florida	134	#402
UNR	81	#626
San Diego State University	76	#480
UNLV	47	#678

(NSF Fastlane data as of August 7, 2015)

BGU Ranking



Q: There might be a possibility to move the BGU ranking of UNLV within the top 500 if UNLV can have about 100 active NSF grants?

- **Fact: The active NSF grants for UNLV went down from 47 to 40, from Aug 2015 to November 2016.**
- **No improvement in this market space!**

*GU ranking is based upon global/regional research reputation, volume and quality of publications, citations, PhD awarded, etc, of each institution

**University of Nevada, Las Vegas
Instructional Faculty
By Rank, Fall 2009 - Fall 2014**

Rank	Fall 2009		Fall 2010		Fall 2011		Fall 2012 ²		Fall 2013		Fall 2014	
	#	%	#	%	#	%	#	%	#	%	#	%
Professor	265	29.7	272	32.4	257	32.9	277	33.4	285	32.7	296	32.2
Associate Professor	303	34.0	301	35.8	275	35.3	288	34.7	284	32.6	286	31.2
Assistant Professor	241	27.0	191	22.7	171	21.9	176	21.2	225	25.8	253	27.6
Instructor/Lecturer	83	9.3	76	9.0	77	9.9	89	10.7	77	8.8	83	9.0
Total¹	892	100	840	100	780	100	830	100	871	100	918	100

RSCA Top Tier Subcommittee #2-3 Assignment

Develop plans & strategies for increasing competitive grant applications & entrepreneurial funding opportunities

SWOT ANALYSIS FOR UNLV RESEARCH

- **Strengths** in:
 1. A few noticeable areas of faculty research that can potentially become nationally and internationally recognized,
 2. Not enough but some support for faculty grant applications and management, and
 3. Good intension for faculty grant applications and management from the central administration
- **Weaknesses** in:
 1. Number of grant proposals from UNLV is relatively low compared to peer institutions?
 2. Number of large volume/flagship grants/contracts is very low compared to peer institutions.
 - No research center of excellence⁽ⁱⁱ⁾ at the moment?
 3. **The capabilities of assistant professors were not fully materialized.**
 - Small portion of sponsored research is from TT assistant professors (~10% of the total grants/contracts).
 - Campus-wide retention program(s) for top-performing TT assistant professors are not established.
 - **Nearly no success in wining “young investigator” award**
 - Seemingly, infrastructure to help TT assistant professors may not be adequately set up?
 - More aggressive recruitment of TT assistant professors may be needed?
- **Opportunities** in:
 1. UNLV Uniqueness: EPSCoR, MSI, KF, others...
 2. Growing interest in the UNLV medical school and health care research
 3. Slowly but growing faculty-participation in campus-wide research initiatives
- **Threats** in:
 1. Federal budget for university research is not well established for FY 2018—
 2. State budget for FY 2018 and 2019 is not looking good?
 - Might affect the recent investment? (Knowledge funds? Medical school?)
 3. **Severely** Increasing competition in grant applications as more institutions are pursuing research funding
 4. Limited research infrastructure/resources (space, CORE facilities, research leadership, students, staff support, etc.)
 5. **UNLV campus culture on research**
 - Low priority business
 - Expectations for research is low compared to peer institutions?

⁽ⁱⁱ⁾ Federally supported