

University Senate Annual Committee Report Academic Year 2016-2017

Section I

Name of Committee: Research and Creative Activities

Submitted by: Greg Stone, Associate Professor, Department of Psychology, Chair

Date Submitted: April 24, 2017

Roster:

- Chair: [Greg Stone](#), Psychology

Members:

- [Christy Lespron](#), Nutrition and Health Promotion, 2017 (Senate Member)
- [Hugh Mason](#), Biodesign, 2017
- [Konstantinos Tsakalis](#), Electrical, Computer and Energy Engineering, 2017 (Senate Member)
- [Tom Schildgen](#), Polytechnic School, 2018
- [Mary Burleson](#), Social and Behavioral Sciences, 2018 (Senate Member)
- [Marco Mangone](#), Life Sciences, 2019
- [James Lyons](#), Earth and Space Exploration 2019
- [Arnold Maltz](#), Supply Chain Management, 2019
- [Joseph Comfort](#), Physics/Emeritus College, 2018

Members from the Office of Knowledge and Enterprise Development:

- [David Coon](#), AY16-17, Nursing and Health Innovation for [Jon Harrison](#), Life Sciences, 2018
- [Terry Alford](#), Engineering of Matter, Transport and Energy, 2019

Ex officio membership:

- [Sethuraman Panchanathan](#), Senior VP Knowledge and Enterprise Development

Overview Narrative:

The Research and Creative Activities Committee (RCA) is charged with providing input and advice from the faculty to the Office of Knowledge and Enterprise Development (OKED) at Arizona State

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University, as well as advise the Senate on research related topics. Membership in the RCA includes representatives of both the Faculty Senate and OKED. OKED administrators and Faculty Senate leadership are also ex-officio members of the RCA. The Research and Creative Activities committee met three times during the 2016-2017 Academic Year. The committee's primary task was to complete the transition from Senate University Committee to Senate Standing Committee as mandated in [Senate Motion 2016-29](#). Provost Searle approved the motion in April 2016. The motion specified changes to the ACD manual. Our task was to make changes to the RSP manual in order to complete the transition. In addition, the committee expressed a desire to continue monitoring the University's progress in improving ASU's High Performance Computing capacity and in making it accessible to a wider range of users.

Section II

Request for Consultations and/or topics reviewed by the committee and outcomes:

1. RFC #122. Request to separate proprietary and classified research policies- RSP 404 and 405 (proposed). OKED asked the RCA to review proposed changes to RSP 404 and reintroduction of RSP 405. RSP 404 would now cover only classified research and all language regarding proprietary research would be covered in RSP 405.
 - a. Outcome: In February, the committee met with Debra Murphy, Director of OKED operations, and Cheryl Conrad, Vice-president of Research Development. Through a fruitful exchange of ideas, committee members were able to separate the two policies and, where appropriate, craft needed policy language. The majority of policy language revolved around the conversion of the former Classified Research Subcommittee to a University committee entitled Classified Research Committee. In particular, the new language made improvements in committee membership and maintained a satisfactory level of Senate oversight regarding classified research. The Senate reviewed resulting policy changes to RSP 404 and 405 via [Senate Motion 2017-39](#) and [Senate Motion 2017-40](#) and provided final approval on March 27, 2017. The Senate President transmitted the approved motions to the University Provost and is currently awaiting an administrative response.
2. OKED CY 2016 reporting of Misconduct in Research cases and Classified Research reporting.
 - a. Outcome: There were no classified research projects to report from January 1, through December 31, 2016. Per OKED, the last facility visit by the US Department of Defense Industrial Security Field Office was performed successfully on October 13, 2015, with no findings reported. Additionally, during CY2016 OKED reports there have been no formal investigations into misconduct in research at ASU.

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Section III

Request for Consultations and/or topics not started or remain unfinished and need to be carried over to the next academic year.

1. RFC #111. Request to continue the investigation into High Performance Computing (HPC) needs at ASU. With the growing importance of “big data” in research, it is becoming critically important for universities to provide access to state of the art High Performance Computing resources. This is especially important as new techniques, like data mining, find their way into disciplines that were not previously computationally intensive.
 - a. Outcome: Senate Motion [2015-44](#) recommended the establishment of a University Senate task force to study the state of, and make recommendations concerning, high performance computing at ASU. The task force filed [a report](#) in May 2015. The RCA agreed in September 2016 to continue its investigation into high performance computing at ASU. As the development of HPC capacity at ASU is an ongoing process, we plan to continue this project next academic year. As an RCA representative, Arnie Maltz was a member of a university-wide task force looking at HPC at ASU. As a member of this university task force, Dr. Maltz, led an RCA subcommittee investigating the status of high performance computing at ASU. The HPC sub-committee year-end report is as follows:

High Performance (Research) Computing at ASU; An Update

On Tuesday, April 18, 2017, I Dr. Maltz met with Jay Etchings and Brandon Mikkelsen who lead the Research Computing/High Performance Computing Initiative for ASU. Both current state and anticipated improvements should be of interest to faculty who do significant amounts of data analysis.

Current HPC State:

- 1) ASU installed base for High Performance Computing (HPC) is rated nominally at 78 teraflops, most of which is concentrated in the Saguaro cluster of machines. However, since the Saguaro cluster is made up of multiple types of CPUs, ASU’s usable HPC is somewhat less than the nominal rating. In terms of core hours, the ASU environment can provide approximately 2.3 million core hours per month. Large-scale storage is also available.
- 2) The HPC group is currently using Penguin as the primary cloud provider, but Amazon Web Services is also strong on campus. The eventual plan is to set up the ASU environment as “cloud agnostic” since each of the major providers such

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as Amazon, Penguin, Azure, etc. has different strengths and weaknesses. In addition, ASU researchers have varying experience and research agendas may fit better on site or with one of the specific cloud providers, or both.

- 3) HPC has roughly 100 pre-built applications that are available to researchers addressing compute-intensive problems.
- 4) Some 240 researchers across ASU have accessed HPC resources in 2017 through March. Not surprisingly, usage is concentrated in Engineering, Arts and Sciences, and CASI (Complex Adaptive Systems Initiative).

Future HPC Plans:

- 1) One of the goals of the Research Computing/HPC group is to make HPC both available and affordable to any researcher at ASU (ubiquitous computing).
- 2) There is a tentative agreement with OKED that any researcher having an identified need could be provided up to 15,000 core hours per month.
- 3) There are plans to provide application support for researchers, so that research faculty could rely on research computing/ high performance computing personnel to guide their selection of resources, whether internal, external, or both.
- 4) Research computing hopes to attain an 18-month refresh cycle, as well as facilitating the best usage of outside cloud providers.
- 5) Related to the goal of ubiquitous computing, it is hoped that usage of the high performance computing resources will be extended well beyond the current user community. There are already very significant efforts on interdisciplinary research including the social sciences. One of the objectives is to make access and affordability such that any researcher at ASU who (as seems increasingly likely) needs to do compute-intensive and/or storage intensive work will have what they need.

Section IV

Recommendations to the Senate or Final Comments

Conversion of the Research and Creative Activities committee to a Senate Standing committee is now complete. We encourage any member of the academic assembly with an interest in High Performance Computing to contact the RCA, via its chairperson.

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