

White paper on advancing the
University of Iowa's status as a top-tier
public research university

FACULTY SENATE WORKING GROUP

WHITE PAPER ON ADVANCING THE UNIVERSITY OF IOWA’S STATUS
AS A TOP-TIER PUBLIC RESEARCH UNIVERSITY

Last December, Board of Regents President Bruce Rastetter urged the members of the Faculty Senate to consider what it would mean for the University of Iowa to become a Top 10 public university.

In response to that challenge, the Faculty Council created a working group to study this prospect and to propose recommendations for achieving that goal. This report summarizes the group’s discussions and recommendations.

EXECUTIVE SUMMARY

Rankings can influence universities’ ability to recruit and retain excellent students, staff, and faculty members; they also influence the economic impact of universities in their regions. Top-tier research universities serve as incubators for groundbreaking scientific, social, and artistic advances. High rankings bring substantial benefits to universities.

On a variety of metrics, the University of Iowa is a top-tier research institution. For many years, it was poised to move into the top 25 research universities in the nation. However, it dropped out of the top 30 for 2016, according to *U.S. News & World Report* rankings.

This report presents specific recommendations for how the University of Iowa could advance its status as a top public research university based on the criteria used to determine national rankings — always keeping in mind the University of Iowa’s mission to serve and educate citizens of the state of Iowa, especially rural populations and first-generation college students.

I. Where does the University of Iowa stand as a public research university?

The University of Iowa is one of the top ranked public research universities in the country. In 2015, the University of Iowa ranked 27th among public universities, according to the popular *U.S. News & World Report* rankings.¹ In 2016, it dropped to #34. A highly aspirational goal would be for the University of Iowa to move into the top 10 among all public universities.²

High national rankings are seen as an indicator of quality, and as a result they bring many clear and substantial benefits to universities. Rankings influence a university’s reputation, providing branding and advertising value. Rankings attract students, who use them to shortlist their college choices. A good ranking would help keep the best Iowa students in state while also attracting high quality students from other states and nations. Studies have also shown that rankings are one of the factors that employers, especially large employers, pay attention to when considering whom to hire. One university president noted that doing well in the rankings “will directly affect an increase in revenue” from tuition as well as donors.³ Top-tier research universities serve as incubators for groundbreaking scientific, social, and artistic advances, which in turn attract highly qualified faculty and staff. Finally, economic outputs are tied to rankings. The University of Iowa contributes \$6 billion to Iowa’s economy annually (an ROI of 1500% for each dollar invested by the state).

Ultimately, these factors can increase the productivity, academic quality, and resources of a university, with corresponding benefits to the state and its population as well as to the nation and the world.

While some rankings systems are focused on education, others are focused on research activity. (The two are related, but different criteria are used for the rankings.) The Center for Measuring University Performance uses the dollar figures of external research support as the basis for its ranking of research universities. The University of Iowa ranks at #24 among public universities on this list.

There are other schemes used to distinguish those research universities deemed to be of the highest productivity and quality in the U.S. Two of the most prevalent are the Carnegie Classification and the invitation-only Association of American Universities (AAU).

The former is a well-known system developed by the Carnegie Foundation to group similar colleges and universities for the purpose of helping policymakers and researchers make reasonable comparisons. This system was originally put in place in 1976 and has changed markedly over the past four decades. The current Carnegie classification places the

¹ Iowa State University is ranked 50th.

² According to the *U.S. News & World Report* rankings, the top 10 are: the University of California at Berkeley, the University of California at Los Angeles, the University of Virginia, the University of Michigan, the University of North Carolina-Chapel Hill, the College of William & Mary, the Georgia Institute of Technology, the University of California at San Diego, the University of California at Davis, and the University of California at Santa Barbara.

³ Morphew, Christopher C., and Christopher Swanson. “On the efficacy of raising your university’s rankings.” In *University Rankings, The Changing Academy, Vol. 3*, pp. 185-199. Springer Netherlands, 2011.

University of Iowa among the research universities described as having “very high research activity.” There are 108 of these, 73 of which are public universities. These universities have been identified by the Carnegie Foundation as having the highest activity in two areas: research expenditures and conferral of doctoral degrees.

The AAU is another highly regarded marker of university excellence. This consortium of 62 U.S. and two Canadian research universities is recognized as the most elite group of research universities in the world. Created in 1900 to promote state and national policies that recognize the contributions of academic research and scholarship, AAU membership is by invitation only. Membership — which is reviewed annually — is based on criteria measuring external funding, faculty awards, membership in prestigious national societies, and scholarly citations. The group currently includes 34 public universities. AAU institutions generate \$23.4 billion in research expenditures yearly; they also produce approximately 3,000 patents and technology licenses every year. Recently, the AAU has added several new public and private members. But it has also discontinued the membership of the University of Nebraska - Lincoln and Syracuse University, noting that these institutions have failed to meet key performance indicators for membership. The University of Iowa has been a member in good standing since 1909.

AAU institutions contribute directly to economic development in their regions. AAU member universities:

- Educate 1.1 million undergraduate students and 560,000 graduate students each year;
- Employ more than 684,000 people, roughly the population of El Paso, Texas;
- Have combined annual operating budgets of about \$138 billion (2012), which if they were a separate nation, would rank them number 24th in the world;
- Have patented and licensed thousands of innovative discoveries and technologies that have fostered new products, companies, and entire industries in such fields as medicine, public safety, food and agriculture, new materials, semiconductor devices, education, and communications;
- Received 2,743 patents and executed 2,430 licensing agreements in 2011;
- Initiated 296 start-up companies in 2011, of which 72 percent operate in the same state as the licensing institution.

In terms of its AAU membership and its standing on other rankings criteria, the University of Iowa is an elite research university. But it is not among the top universities in the nation — that is, it is not in the top 10, or even the top 20.

Were the University of Iowa to pursue a path to become more or less elite with regard to the criteria discussed here, changes at the University would likely have significant related consequences — positive or negative — for its students, faculty, and constituents, including the citizens of the State of Iowa.

II. How are rankings determined?

There are myriad ways to determine whether a university is highly rated among its peers. Typical measures might include rankings, consortium membership, or more objective classification schemes that purport to classify universities based on outputs specific to research universities.

Over the last 20 years, the *U.S. News & World Report* rankings have become one of the primary determinants of college and university reputation in the U.S. Although there have been numerous critiques of the methodology used by this magazine, prospective students and their parents pay attention to the rankings, because they provide a simple and straightforward way to compare college options (it is easy to understand the difference between, say, #11 and #24), they are published by a disinterested party, and they are by far the most recognized and ubiquitous evaluator of college quality for the general public. Even U.S. colleges and universities frequently cite these rankings as evidence of their own excellence. For all practical purposes, the *U.S. News* rankings are the only rankings that matter for colleges and universities.

Most university administrators try to maximize their school’s rank because external constituents pay such close attention to them.

There are five criteria that *U.S. News* weighs the most heavily in calculating a university’s rank in this grouping.

- 22.5% is determined by national reputation
- 22.5% is determined by retention (graduation rate accounts for 4/5 of this score, first-year retention 1/5)
- 20% is determined by faculty resources (e.g., faculty salary, class size, percent of faculty with PhDs, student-faculty ratio)
- 12.5% is determined by student selectivity, and
- 10% is determined by financial resources (spending per student).

As these numbers indicate, excellence in both research and teaching is necessary for schools to score well on the *U.S. News* ranking of national universities. Reputation, traditionally the most important factor in determining a school’s rank, is a direct reflection of the national perception of the university’s contribution to science and knowledge as represented by scientific discoveries, patents, medical breakthroughs, and literary achievements. Other factors, such as faculty resources and financial resources, are also tied to research productivity. *U.S. News* also includes factors, however, that are driven by instructional quality. These factors include retention, student selectivity, and dollars spent per student.

One of the challenging aspects of attempting to improve a university’s ranking is that the criteria used by *US News* sometimes contradict the commitments of the schools, their governing boards, and constituents. For instance, Iowa’s universities could try to elevate their rankings by raising their entrance requirements and becoming more selective. Some of the public universities that have a higher ranking than Iowa’s universities are significantly more selective than Iowa or Iowa State.

Becoming more selective, however, would compromise the mission of Iowa’s public universities to serve a broad swathe of the state’s population, and would be inconsistent with the Board of Regents’ goals of reaching first-generation, working-class, rural, and ethnic minority students. Similarly, attempts to significantly raise the cost of tuition at Iowa’s public universities might result in improvements in the financial resources criterion, but might result in less access for Iowans from families with lower incomes. In fact, some of the private and public universities that do very well in the *U.S. News* rankings are regularly criticized for, among other things, enrolling a smaller share of poor and underrepresented students than is present in their state’s population. A prominent critique of the *U.S. News* rankings is that the magazine’s definition of quality is not always consistent with the missions of the schools it is assesses. This means that outside of large influxes of new public appropriations, tradeoffs between existing commitments and ranking success are necessary.

On other metrics such as extramural funding for research, the University of Iowa is poised to improve its performance and rise in the rankings. Securing federal grants, private support for research, patents, and licenses, would advance the university’s position in the rankings according to indicators used by the AAU, the Carnegie Foundation, and the Center for Measuring University Performance. Because one criterion for the *U.S. News & World Report* ranking is “reputation,” improving the University of Iowa’s status among these groups could impact its *U.S. News* rating.

Given the University of Iowa’s mission as a public university in a rural Midwestern state, the support of its research activities would also add value to the state in concrete ways. Such support might improve the UI’s rankings, but more importantly, it would significantly benefit the residents of Iowa.

III. Future perspectives: The benefits of advancing the UI’s ranking

Supporting and advancing the University of Iowa’s research and creative activities could have significant benefits, including:

- An increase in external research funding (in FY 2014, the University of Iowa brought in \$518.8 million from federal grants and industry sponsors).⁴ Fostering research activity will increase external funding for it, which will raise the UI’s rankings. This in turn will create jobs and result in statewide expenditures of more than \$2.6 billion.
- An increase in the number of patents and licenses developed at the University of Iowa, which are also revenue sources.

⁴ For the sake of comparison, the University of Michigan’s external funding in the same period was more than \$1.3 billion; its contribution to the state economy was \$16.8 billion. UC-Berkeley’s external funding was \$691.1 million in the same period, contributing more than \$300 billion to the state economy. Michigan is ranked #7 and Berkeley #9 by the Center for Measuring University Performance. One might extrapolate that Iowa would need to approach these numbers to be ranked in the top 10. See Appendix B for specific comparative data.

- An increase in the number of start-up businesses and economic ventures in the state, which will boost economic development and create jobs.
- An enrichment of the quality of life in Iowa communities through music, the performing and fine arts, literary events, film festivals, and other creative activities that contribute to vibrant and attractive places to live and work.⁵
- An increase in student enrollment, in-state as well as out-of-state and international. Students use rankings to determine their college choices. Higher rankings will attract more students. Yet it is important to consider the trade-offs so that the rankings criteria are not used to limit the applicant pool and deter rural, first-generation, and minority students from applying to the University of Iowa.
- An increase in graduation rates. Research shows that involvement in research courses and supervised projects increases the likelihood of earning an undergraduate degree.

⁵ A recent news story noted that students’ dissatisfaction with entertainment options in Iowa contributes to its “brain drain” (Lauren Mills, “2015 college grads to continue exodus trend from Iowa,” *Des Moines Register*, May 10, 2015).

IV. Recommendations

These positive potential outcomes of advancing the University of Iowa’s ranking as a public research university call for a plan of action to achieve that goal. The following recommendations identify steps the university and the Board of Regents can take to move forward in this area.

Action items for the University of Iowa

1. Identify and devote resources to strategic areas of research emphasis with the potential to enhance the University of Iowa’s reputation for excellence.
2. Support and incentivize student involvement in research at the undergraduate and graduate levels.
3. Create an advisory committee to promote and reward interdisciplinary research collaborations. For example, encouraging partnerships between the sciences and the arts has great potential. “Many of the ‘grand challenges’ facing the world that have been identified by a variety of distinguished organizations (e.g. the National Academy of Engineering, the National Endowment for the Humanities, the National Institutes of Health, the National Science Foundation, and the Gates Foundation) all require interdisciplinary research for viable solutions.”⁶ Fostering interdisciplinary research would increase the University of Iowa’s opportunities to secure significant extramural funding.
4. Provide adequate infrastructure to support vibrant environments for research and creative endeavors (IT facilities, other equipment, staff, workspaces).
5. Keep track of faculty achievements and nominate highly accomplished faculty members for positions with national academies and councils.
6. Ensure that engagement and outreach activities, especially to the state of Iowa, are rewarded in faculty and staff review and promotion processes.
7. Develop best practices for encouraging research that translates into economic development activities in the state
8. Assess graduate and professional programs in order to enhance the University of Iowa’s strongest research areas.

Action items for the Board of Regents

1. Consider funding models that place greater priority and emphasis on research and creative activity, which in turn would benefit programs like the Iowa Center for Research by Undergraduates and the Summer Research Opportunities Program for minority students, contributing to their graduation rates and future success in the workforce.⁷
2. Meet regularly with the Office of the Vice President for Research and Economic Development to discuss how best to attract outside funding as well as how to motivate and support research and creative work with local, regional, national and global impact.

⁶ Final report of the Task Force on Research and Creative Excellence, University of Iowa, January 5, 2010, p. 3

⁷ John Van Buren and Sam Van Horne, “The impact of undergraduate research at Iowa.” Presentation, University of Iowa, May 14, 2015.

APPENDIX A

University of Iowa academic programs ranked in the top 25 in the nation

#1 writing programs in fiction and poetry (Iowa Writers’ Workshop) and nonfiction (Nonfiction Writing Program) (*Poets & Writers*)

25 graduate programs ranked among the **top 25** in the nation (*U.S. News and World Report*, 2016):

- #1 **Speech-Language Pathology**—Master’s (College of Liberal Arts and Sciences)
- #2 **Audiology**—Doctorate (College of Liberal Arts and Sciences)
- #2 **Nursing Administration** (College of Nursing)
- #2 **Physician Assistant**—Master’s (Carver College of Medicine)
- #3 **Rehabilitation Counseling**—Master’s/Doctorate (College of Education)
- #3 **Social Psychology** (College of Liberal Arts and Sciences)
- #4 **Printmaking** (College of Liberal Arts and Sciences)
- #5 **Physical Therapy**—Master’s/Doctorate (Carver College of Medicine)
- #9 **Anesthesia Nursing** (College of Nursing)
- #10 **Health Care Management** (College of Public Health)
- #10 **Rural Medicine** (Carver College of Medicine)
- #11 **Nurse Practitioner—Gerontology/Geriatrics** (College of Nursing)
- #12 **Family Medicine** (Carver College of Medicine)
- #14 **Higher Education Administration** (College of Education)
- #14 **Nurse Practitioner—Pediatrics** (College of Nursing)
- #14 **Student Counseling and Personnel Services** (College of Education)
- #15 **Environmental/Environmental Health Engineering** (College of Engineering)
- #16 **Painting and Drawing**—Master’s (College of Liberal Arts and Sciences)
- #16 **Primary Care** (Carver College of Medicine)
- #17 **Pharmacy**—Pharm.D. (College of Pharmacy)
- #17 **Public Health**—Master’s (College of Public Health)
- #18 **Clinical Psychology**—Doctorate (College of Liberal Arts and Sciences)

Clinical programs (UIHC)

- #8 **Ophthalmology and Visual Sciences**
- #9 **Otolaryngology**
- #15 **Gynecology**
- #18 **Orthopaedics and Rehabilitation**

APPENDIX B

Rank⁸	Institution	External funding	Aggregate contribution to state economy	
1 (7)	University of Michigan	\$1.2 billion	\$16.8 billion	
2 (9)	UC-Berkeley	\$671 million	> \$3 billion	
3 (10)	UCLA	\$942.5 million	>\$9.89 billion	
4 (11)	University of Washington	\$1.1 billion	\$12.5 billion	
5 (12)	University of Wisconsin - Madison	\$1 billion	\$15 billion	
6 (16)	University of Minnesota – Twin Cities	\$824 million	>\$8 billion	
7 (17)	UC – San Diego	\$1 billion	>\$7.2 billion	
8 (18)	UC – San Francisco	\$995 million	>\$6.2 billion	
9 (21)	University of North Carolina – Chapel Hill	\$762 million	\$5.1 billion	
10 (23)	University of Texas at Austin	\$558 million	\$7.4 billion	

⁸ Ranking by the Center for Measuring University Performance from its 2013 Annual Report. The first number refers to the rank among public U.S. universities, the parenthetical number to overall rank among all universities.

APPENDIX C — Working group members

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