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# Methodology and Overview of Respondents

*Not that the story need be long, but it will take  
a long while to make it short.*

—Henry David Thoreau

**T**he ECAR study of IT engagement in research used a multifaceted research methodology to gather both quantitative and qualitative data from 328 higher education institutions (315 U.S. and 13 Canadian institutions). The data provide a view of one self-selected segment of higher education's collective experience with the research enterprise as well as in-depth institution-specific perspectives.

## Research Approach

We undertook three data collection and analytical initiatives: a quantitative Web-based survey, qualitative telephone and e-mail interviews, and three case studies.

The quantitative Web-based survey was designed by ECAR fellows and was sent to 1,477 EDUCAUSE member institutions in Canada and the United States in July 2005. Senior IT leaders, most of them chief information officers (CIOs), from 328 institutions responded to the survey. The survey questions appear on the EDUCAUSE Web site at <[http://www.educause.edu/ir/library/pdf/ECAR\\_so/ers/si/ESI05F.pdf](http://www.educause.edu/ir/library/pdf/ECAR_so/ers/si/ESI05F.pdf)>. Appendix A lists the institutions that participated in the survey. All information collected is confidential.

We conducted qualitative telephone or in-person interviews with 26 IT executives, professionals, and scholars at 23 institutions.

To obtain depth and breadth of practice, we chose to interview respondents from institutions of varying size and mission, as well as thought leaders in nonprofits and government agencies. The interviews were invaluable in helping us understand anticipated research issues and directions over the next five to 10 years. Appendix B lists all institutional representatives whom we interviewed via phone, personal conversation, or e-mail.

Five in-depth case studies were also undertaken. Designed to complement the core study, each case focuses on diverse issues related to IT's role in research: the importance of senior-level leadership for supporting research IT initiatives (Purdue University); academic and organizational issues associated with an innovative program for the digital humanities (University of Virginia); the dissemination of leading-edge research technologies (Calit2 at the University of California, San Diego); a mature partnership between central IT staff and researchers (Georgetown University); and how fostering trust and collaboration between research and central IT providers can leverage investments in high-performance computing (Princeton University).

The research team for this study was composed of eight core members. Harvey Blustain, president of Act IV Consulting, Inc., served as

the principal investigator, analyst, and writer. Sandra Braman, professor of communications at the University of Wisconsin–Milwaukee, provided the primary source of information and inspiration on researcher needs and on the history of the research enterprise. Donald Spicer, CIO and associate vice chancellor of the University System of Maryland, was involved in the research and writing of all the case studies. Bruce Metz, CIO at Thomas Jefferson University, researched and cowrote the Purdue and Calit2 case studies. Judy Pirani researched and coauthored the Princeton and Georgetown cases. Gail Salaway contributed her considerable expertise in SPSS and statistics. Richard Katz guided the project, opened doors, and contributed original thought on the future of IT's engagement in research. Toby Sitko provided her usual professional competence to the editing and production process.

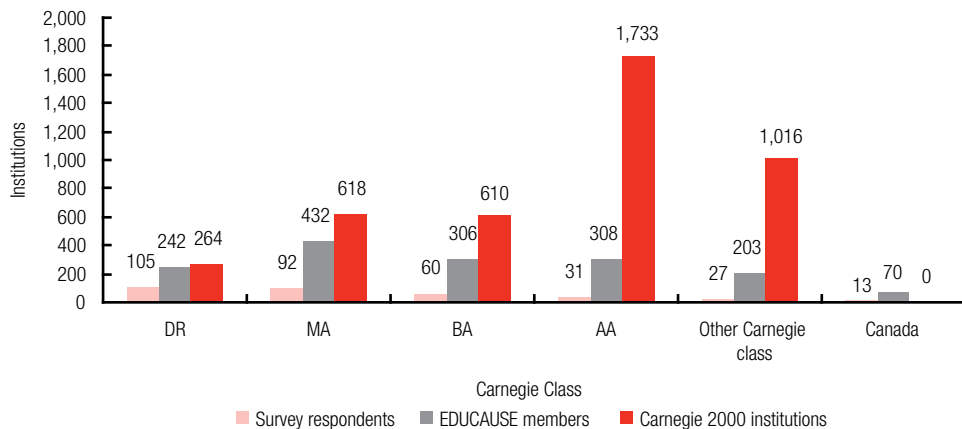
### **Carnegie Class as a Distinguishing Factor**

The study grouped the sample by a modified 2000 Carnegie Classification of Institutions of Higher Education.<sup>1</sup> The Carnegie taxonomy describes the institutional diversity in U.S. higher education. Most higher education projects rely on this classification to ensure a representative selection of participating individuals and institutions. The study collapsed the categories as follows to obtain larger numbers for statistical and descriptive purposes:

- ◆ *Doctoral/research universities (DR)*. The study grouped the doctoral-extensive and doctoral-intensive universities together. These institutions typically offer a wide range of baccalaureate programs and graduate education through the doctorate degree. Doctoral-extensive institutions award 50 or more doctoral degrees per year in at least 15 disciplines. Doctoral-intensive institutions award at least 10 doctoral degrees per year overall.
- ◆ *Master's colleges and universities (MA)*. The study grouped master's colleges and universities I and II together. These institutions typically offer a wide range of baccalaureate programs and graduate education through the master's degree. Master's I and master's II institutions differ in the number of degrees offered.
- ◆ *Baccalaureate colleges (BA)*. The study combined the three baccalaureate college groups (baccalaureate colleges, liberal arts; baccalaureate colleges, general; and baccalaureate/associate's colleges) into a single group. Baccalaureate colleges are primarily undergraduate colleges with major emphasis on baccalaureate programs.
- ◆ *Associate's colleges (AA)*. These institutions offer associate's degree and certificate programs but, with few exceptions, award no baccalaureate degrees.

The survey population also included 16 specialized institutions, eight U.S. higher education systems offices, 13 Canadian institutions, and three institutions categorized as "other." In November 2005, after the survey had been completed, Carnegie introduced a new classificatory scheme. We have not provided a crosswalk to the new scheme, in large part because we suspect that our readers, at least in the near term, will be more familiar with the older 2000 taxonomy.

Figure 3-1 compares the responding institutions' distribution by their 2000 Carnegie class, EDUCAUSE membership, and the universe of higher education institutions in the United States at the time of the survey. Most noteworthy is the fact that the sample overrepresents doctoral institutions, which constitute 7 percent of the Carnegie universe but one-third of the survey population. Similarly, the AA institutions that constitute 42 percent of the Carnegie sample represent only 10 percent of the survey respondents. This skewing of representation is due to two factors. First, it is very often the case that the



**Figure 3-1. Survey Respondents by EDUCAUSE Membership and Carnegie Class**

responding schools mirror much more closely the EDUCAUSE membership than the national population of institutions by Carnegie class. In addition, with regard to this particular study, there was considerable self-selection by those institutions that are interested in research; many nonresearch institutions, although remaining committed to the ECAR mission, chose to sit this one out.

### Institutional Mission as a Distinguishing Factor

When we ran the statistical tests, Carnegie classification served as a credible independent explanatory variable for much of our analysis. A more powerful variable emerged, however: institutional mission. In our survey, we asked which of the following four statements best describes the respondent's institution. Each descriptor is preceded by the shorthand name we later assigned to each category and is followed by the number of institutions assigning themselves to it.

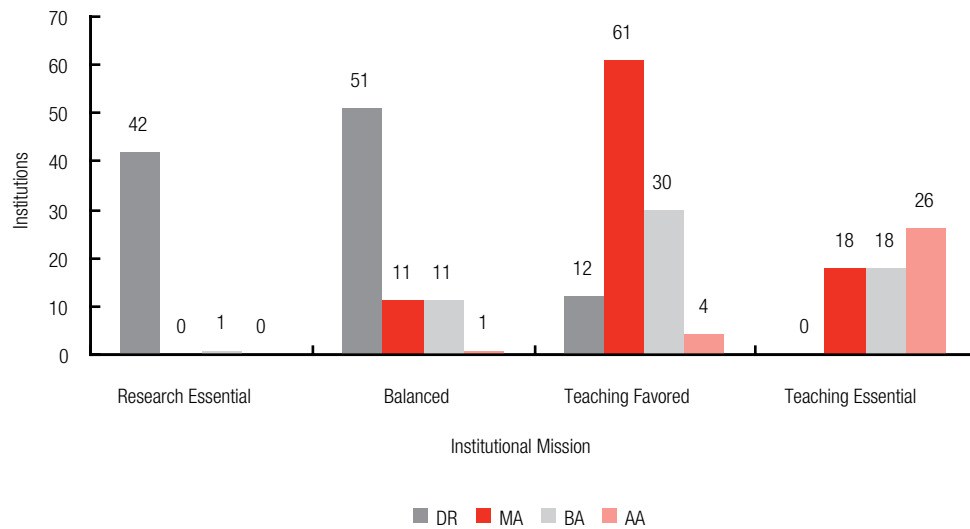
- ◆ *Research Essential*: Research and teaching are the primary missions, but research is what really drives faculty and institutional success.
- ◆ *Balanced*: Research and teaching are both primary missions, and they are equally important for faculty and institutional success.

- ◆ *Teaching Favored*: Teaching is the primary mission, but faculty research is rewarded.
- ◆ *Teaching Essential*: Teaching is the primary mission, and faculty research does not factor heavily in faculty and institutional success.

Throughout this report, we use institutional mission rather than Carnegie classification as a primary explanatory variable for three reasons. First and most important, as we ran the numbers and looked for patterns, mission revealed a stronger statistical relationship than Carnegie class. Second, it allowed us to peel back the Carnegie labels and really understand what each institution was trying to achieve within the research sphere. Finally, it allowed us to include on an equal footing the systems, specialized institutions, and Canadian institutions that do not rest comfortably (or at all) within the Carnegie framework.

Figure 3-2 shows the relationship between Carnegie classification and the self-reported institutional mission. With one exception (a branch campus of a large Midwestern research university), all of the Research Essential institutions are Carnegie doctoral institutions. Most of the Balanced institutions are also doctoral, and it is interesting to note that more doctoral universities placed themselves in this category than in Research Essential. Part of this can be explained by some respondents' presumed reticence to devalue teaching, but

**Figure 3-2.**  
Distribution of  
Carnegie Classes,  
by Institutional  
Mission



much of it reflects the fact that teaching is a core activity at all but the most fervently research-focused universities. As one moves into the Teaching Favored and the Teaching Essential categories, there is, as one would expect, a greater showing of the MA, BA, and AA institutions.

To demonstrate the mission framework’s effectiveness as a lens for understanding the institutions’ emphasis on research, we posed a series of statements that began “My institution places high priority on ...” and continued with such items as research, the recruitment of faculty who do research, interdisciplinary research, and multi-institutional research. Respondents were given five choices: strongly disagree, disagree, neutral, agree, and strongly agree.

As shown in Figure 3-3, there is a clear statistical association between institutional mission and both research and recruiting faculty who do research. (Many of the other variables related to institutional priority are explored later in this study.) The Research Essential and Balanced respondents expressed solid to strong acceptance of these as priorities, with Teaching Favored showing less and Teaching Essential showing the least agreement with research and the recruitment of research faculty as priorities.

Through the lens of our definition of institutional mission, we can differentiate institutions specifically by the emphasis respondents place on research, not on their assignment within a multi-variate taxonomy. This enables us to fine-tune our analysis of the practices within research-focused universities. Of course, where other variables afforded a more compelling explanatory power, we identify them within the text.

### Profile of Responding Institutions

For those familiar with other ECAR reports, we should note a few other characteristics of the survey population.

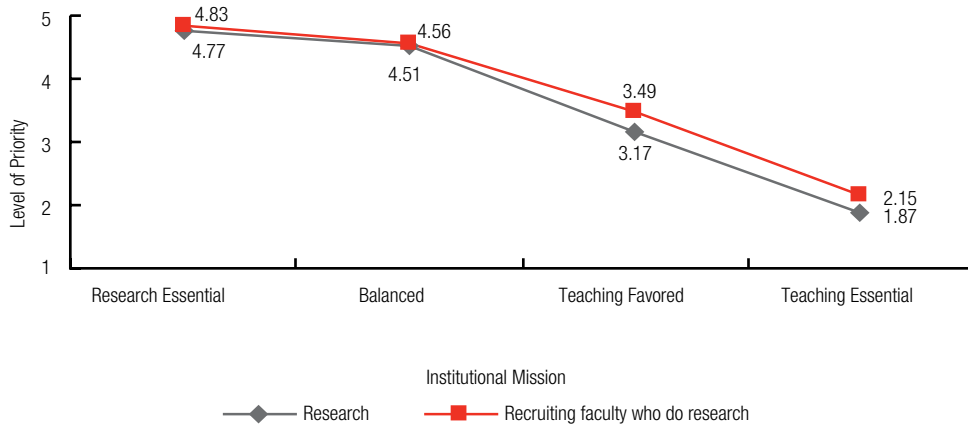
Over half (58.9 percent) of responding institutions were public, with the remaining 41.1 percent being private. This closely approximates the overall ratio of public to private institutions in the United States. This was rarely a statistically significant explanatory variable. Note also that percentages in some tables and figures do not add up to 100 percent because of rounding.

There was an equal split across institutions in terms of the size of their student FTE population: 1 to 2,000 students (20.0 percent), 2,001 to 4,000 students (19.1 percent), 4,001 to 8,000 students (19.1 percent), 8,001 to 15,000 students (19.4 percent), and more

than 15,000 students (22.5 percent). This, too, was not a strong explanatory variable, except to the extent that size itself is often correlated with large research universities.

The overwhelming majority (78.1 percent) of the survey respondents were CIOs. As shown in Figure 3-4, the other distantly placed titles include director of research computing

(8.8 percent), director of administrative computing (4.9 percent), another vice president or vice provost (3.4 percent), and director of academic computing (3.0 percent). Because of the preponderance of CIO respondents, and for purposes of stylistic variety, we sometimes in the text use the term "CIO" as a placement synonym for "respondent."

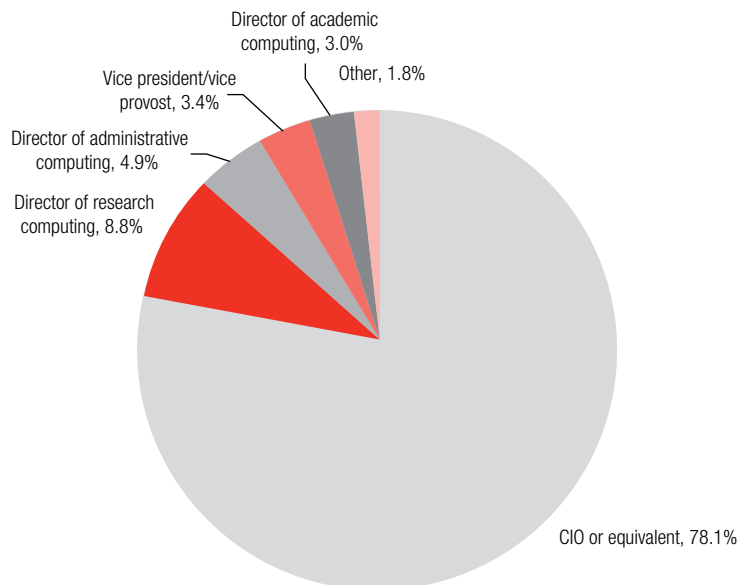


**Figure 3-3.**  
Priority on Research, by Institutional Mission

**Q:** My institution places high priority on research.

**Q:** My institution places high priority on recruiting faculty who do research.

(1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree)



**Figure 3-4.**  
Survey Respondents, by Job Title

## Endnote

1. See <<http://www.carnegiefoundation.org/Classification/CIHE2000/defNotes/Definitions.htm>>. The study notes that the Carnegie Classification of Institutions of Higher Education recognizes 1,669 associate's institutions, whereas the American Association of Community Colleges (AACC) membership includes 1,171. The AACC numbers are based on

the definition of colleges eligible for membership in the AACC constitution: colleges that award the associate's degree and are regionally accredited. The Carnegie count includes career colleges and colleges accredited by the Accrediting Council for Independent Colleges and Schools.