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Work Environment

The earthly paradise is where I am.
—Voltaire, *The Worldly One*, 1736

Substantial mythology exists about the nature of colleges and universities as workplaces. Regarding the work environment, many who work in higher education subscribe to the longstanding conviction that “higher education has a moral mission to fulfill.”¹ Others remind us that academic politics are especially mean because the stakes are so low. This chapter reports on ECAR’s survey data about working conditions and key aspects of respondents’ immediate work environment, including

- ◆ the higher education culture,
- ◆ workforce diversity,
- ◆ managerial climate,
- ◆ salaries and hours worked, and
- ◆ staff training, professional development, and mentoring.

The Higher Education Environment

Higher education is a unique environment, often described as having

- ◆ loosely coupled or unaligned organizations, or both;
- ◆ unclear, uncertain, problematic, and rapidly shifting priorities and objectives;
- ◆ unclear technology;
- ◆ fluid participation; and

Key Findings

- ◆ In general, staff respondents in central IT organizations in higher education rate their direct managers positively in key areas of managerial performance much higher than do IT staff members in industry.
- ◆ Overall, IT salaries in higher education compare favorably with those in other sectors. However, although 58 percent of responding senior-most IT leaders earn more than \$100,000 per year, higher education CIO salaries lag those in the private sector.
- ◆ Twenty-eight percent of survey respondents work in excess of 50 hours per week. Senior-most IT leader respondents report longer work weeks than others.
- ◆ Forty-four percent of central IT organizations described spend 1 percent or less of their budget on staff training. However, 63 percent of respondents report that they have the opportunity to learn new skills on the job.

- ◆ a “garbage can” decision-making methodology.²

George Keller described colleges and universities as “amiable, anarchic, self-correcting collectives of scholars with a small contingent of dignified caretakers at the unavoidable business edge.”³ Of course, the modern higher education enterprise, particularly the modern research-intensive

university, is far more than a collective of scholars. It is in many cases an enormous enterprise supporting the full range of services typically associated with a city (transport systems, groundskeeping, waste-water management, food services) as well as one organized to foster research on the shifting frontiers of human knowledge and experience. Leadership instability often adds to the complexity of managing the modern university. Higher education presidencies rarely last more than five years, and in many cases presidential transition triggers a rethinking of institutional direction and leadership style, often resulting in calls for change punctuated by periods of waiting or posturing by those responsible for long-term initiatives or ongoing services.

Higher education's unique and even compelling mission attracts educated and interesting people to its workforce. Although people are attracted for many reasons, it is fair to assume—and this study confirms—that many choose a higher education career because of the educational mission and the premiums attached to intellectual rigor, innovation, and discovery. "There is tremendous leeway to examine how the institution can adapt emerging technology in new and interesting ways," said Edmond Cooley, director of information technology (IT) at Dartmouth College's Thayer School of Engineering. "I'm in this living laboratory that is Dartmouth College finding out what these technologies can do for us. That is something my counterparts in large corporations do not have the opportunity to do."

Although higher education's intellectual climate attracts many, its ambiguity or multiplicity of purpose, political nature of leadership, and loose alignment of organizational subcomponents can cause others to leave. Georgia State University's Interim Associate Provost and CIO Mary Jane Casto conveyed this environment's dynamism: "There is

something to be said for the vitality of a university and the constant change—not so much the university itself, but our main customers change every four years. It is a constant refresh of needs and requirements driven by the students who are coming in and are more and more technically savvy."

This complex mission and governance also make unique opportunities available to people who can operate within the academy's somewhat ambiguous *modus operandi*. For Lasell College CIO Deborah Gelch, "Higher education is more challenging in many ways than the corporate environment. There are so many things that we are responsible for and areas that we can pursue, such as grant writing for cutting-edge education and research or developing projects that help students foster a deeper understanding of their world and prepare for their careers. It is a much more interesting job." Richard Reeder, CIO at Stony Brook University, agreed: "In industry you very quickly get specialized or pigeonholed to a relatively small segment of the overall company strategy and business. Higher education allows you to expand beyond that and be involved in many different aspects of the institution."

Respondent Demographics

Our survey respondents are largely white (92.9 percent) and male (62.7 percent).⁴ More than 90 percent (92.4 percent) of the senior-most IT leader respondents are white, and more than three-quarters (78.6 percent) are male (see Figures 4-1 and 4-2). Although women make up 37.3 percent of total respondents, only 21.4 percent hold the senior-most positions.

Although the number of women in higher education's IT community is proportionally small, the past decade has seen a meaningful increase in their numbers. Many women, like Lasell College's Deborah Gelch,

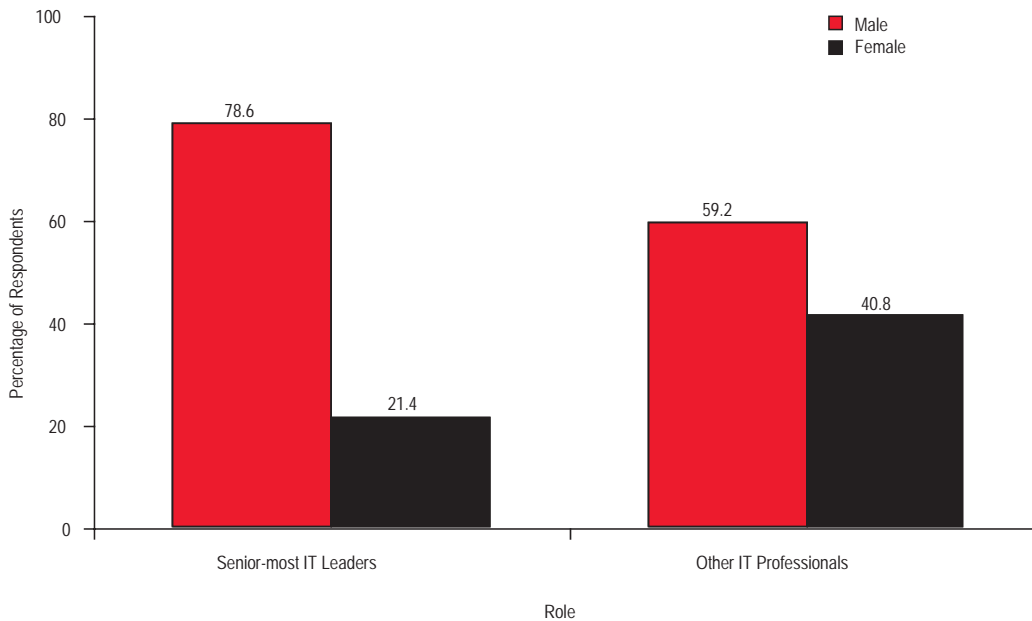


Figure 4-1.
Respondents'
Gender, by Role

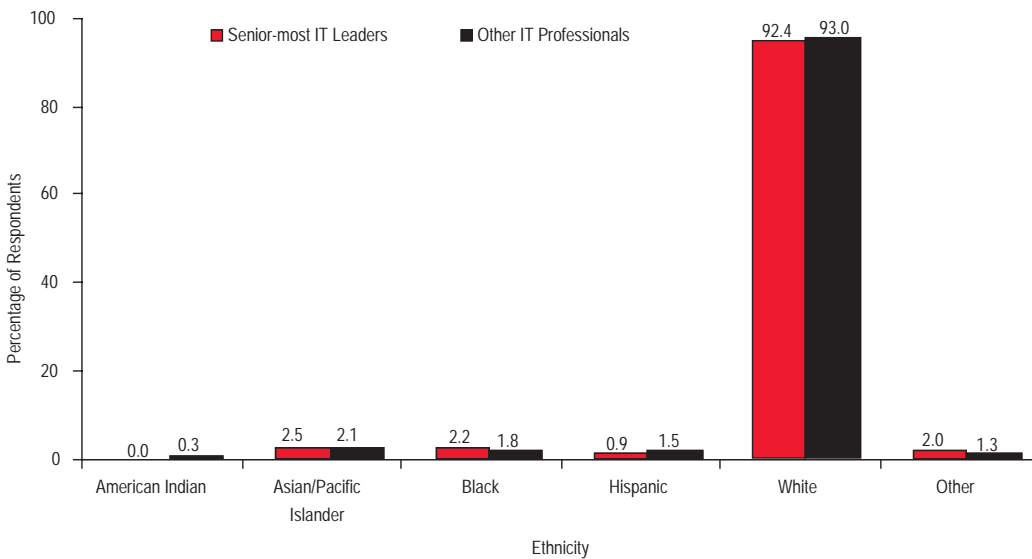


Figure 4-2.
Respondents'
Ethnicity, by Role

were pioneers: “When I started out, it was unusual for a woman to work in this field.” For many, the pioneering years were characterized by feelings of professional isolation. Mary Harsch, network and systems information manager at the University of Oregon, said, “For years when I went to meetings and training, I was the only female there. The thing that I found most irritating was that they would not even call on me when I had a question. If they finally did, sometimes

they would be a little shocked at the depth of my question.”

Like women in so many male-dominated fields, women in higher education’s IT community feel added pressure to prove themselves. “I think being extremely technical and knowledgeable and six steps ahead has been the only way I can combat this,” stated Gelch. Eva Swenson, director of student information systems at the University of Toronto, said, “It has given me a challenge

because I felt I had to prove myself and that I needed 'more points' before I got the same level of credibility."

"The presence of females has improved over time," stated Robyn Render, vice president for information resources at the University of North Carolina (UNC) System. "As you would expect, it narrows as you go up the ladder. But because I think the pool is so large, many of us have moved up that ladder and have found the way to be accepted by our peers." Women now account for 40.8 percent of those IT professional survey respondents who do not hold senior-most positions, holding promise for a higher proportion of women in future IT leadership positions. Aspiring leaders like Vidya Ananthanarayanan, instructional support manager at Trinity University, see their career aspirations in positive terms: "I am an international female professional of Indian origin," she explained. "Maybe I lead a charmed life, but these factors have not kept me down so far. I think in the next 10 years you will begin to see more women moving into these positions of leadership."

Thirty percent of those who aspire to senior-most positions are women, and 9 percent of these aspirants are ethnic or racial minorities. Although an increase over the past decade, the numbers are still small. Fewer women (16.4 percent) aspire to a CIO position than do men (28.2 percent).

Creating a More Diverse IT Leadership

Numerous IT leaders recognize the value of a more diverse workforce and have taken steps to bring it about. As Rodney Harrigan, vice chancellor of information technology & telecommunications and CIO at North Carolina Agricultural and Technical State University, noted, "The world is changing slowly as technology and communications bring people closer together and magnify the diversity of the world. As a result, the way people

lead is changing because there are so many different kinds of people who are speaking up. You can't have a stereotyped leader anymore." UNC's Robyn Render added that workforce diversity will not occur overnight. "We need to empower minorities to pursue this career direction. There is this subset of about 120 historically black institutions and, in total, a few hundred historically minority institutions including tribal institutions. It is a world that you can live very happily in and never be concerned about this issue, but I don't think that is the answer. We need to do more cross-pollination here." Not surprisingly, the proportion of minority respondents varies by geographic location, with California, New York, and Texas showing higher response rates among self-reported minority group members.

Higher education organizations, colleges, and universities can create opportunities and venues to foster leaders, but individual performance plays the key role. "Make sure you do things well," advised Harrigan, who is African-American. "Make clear your accomplishments. The two things people respect are performance and expertise. Once someone demonstrates that his contribution can make a significant difference in where the wealth is, all of a sudden he is accepted."

Ages of Respondents

Figure 4-3 shows that our survey respondents tend to be older. Fewer than 5 percent are under the age of 31, and 25.1 percent are under 41. Almost 40 percent are over 50, and the median age of all respondents is between 46 and 50. Private institutions have significantly more people under 41 (30.2 percent) and fewer over 50 (34.9 percent) than do public institutions (22.1 percent and 42.4 percent, respectively). We noted slight differences across Carnegie class, although, interestingly, only 19.3 percent of community college respondents were under the age of 41.⁵

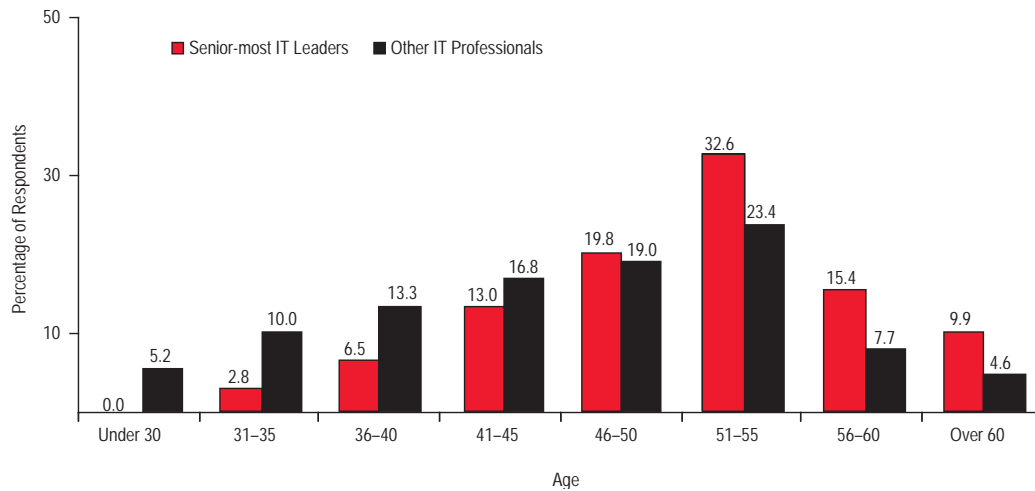


Figure 4-3. Ages of Respondents, by Role

Noteworthy, too, are the ages of the senior-most IT leaders: more than half (57.9 percent) are over 50. In addition, more than one-third (35.7 percent) of respondents not in senior-most roles are 51 or older. We discuss the relationship of aging and mobility at greater length in Chapter 5.

Managerial Climate

We asked respondents about their interactions with their direct managers, using a Likert scale (1 = strongly disagree to 5 = strongly agree). These questions also recently appeared in a 2003 *CIO Magazine* survey under the title “What Do You Think of Your CIO?”⁶ Overall, our higher education IT respondents in central IT organizations rated their direct managers positively in key areas

of managerial performance—much higher than did IT staff members in industry.

Managers Support Open Communications

We asked survey respondents to agree or disagree with the statement “My direct manager creates an atmosphere in which I feel free to speak openly.”

As Table 4-1 shows, they generally agree that communications with their direct manager occur in an atmosphere that fosters openness, and they agree with the statement more often than their industry counterparts do. Men and women responding to the survey agreed or disagreed with this observation with equal frequency. Several IT leaders we interviewed mentioned the need

Table 4-1. Response to “My Direct Manager Creates an Atmosphere in Which I Feel Free to Speak Openly”

	Senior-most IT Leaders, Percentage (N = 327)	Other IT Professionals, Percentage (N = 921)	Private-Sector IT Professionals, Percentage (N = 400)
Strongly disagree	2	6	23
Disagree	8	8	13
Neutral	10	10	16
Agree	34	37	22
Strongly agree	46	39	25

to balance an empowering managerial style with an open-door policy. Niels Jensen, director of information technology at Normandale Community College, described this balance: "People can talk with me at any time about their concerns and new ideas. I encourage people to come talk to me when they have new ideas. I tend not to micromanage them, but on the other hand, I hold them to deadlines and deliverables."

Managers Are Generally Well Regarded

Table 4-2 shows other elements of survey respondents' direct managerial environment. Most respondents agreed or strongly agreed that their managers actively deal with workplace conflicts that arise (64.3 percent), although one-fifth (20.4 percent) of respondents do not believe their managers respond to such conflicts. Respondents also, in general, believe their managers communicate about things that affect employees' jobs. Note that the senior-most IT leaders rate their own managers somewhat higher in these three areas.

Survey respondents generally did not, however, view their direct managers as actively involved in fostering their professional growth and development. Female respondents agree or strongly agree more often (42.8 percent) that their manager is actively involved in their growth and development of skills than do their male counterparts (34.9 percent). Respondents aspiring to CIO positions did not differ from nonaspirants in their perception about this issue. Younger survey respondents perceive their managers as being more involved in their growth and in developing their skills than do older respondents, as Figure 4-4 shows.

On the other side of the coin, we asked respondents whether they believe they personally help others to develop themselves professionally. Ironically, respondents across all levels of responsibility and aspiration overwhelmingly (73.5 percent) believe that they do so "frequently" or "fairly often." Senior-most IT leaders seem most prone to this belief (83.5 percent).

IT leaders offer various approaches for developing staff members and often get

Table 4-2. Perceptions of Direct Manager Attributes, by Role

	Senior-most IT Leaders		Other IT Professionals	
	Mean*	Standard Deviation	Mean*	Standard Deviation
My direct manager deals with conflict when it arises	3.71	1.030	3.51	1.131
My direct manager keeps me informed about things that affect my job	3.82	1.023	3.64	1.122
My direct manager provides feedback on a regular basis regarding my job performance	3.25	1.175	3.18	1.250
My direct manager is actively involved in my growth and development skills	2.79	1.133	3.06	1.228

*Scale = 1 (Strongly Disagree) to 5 (Strongly Agree)

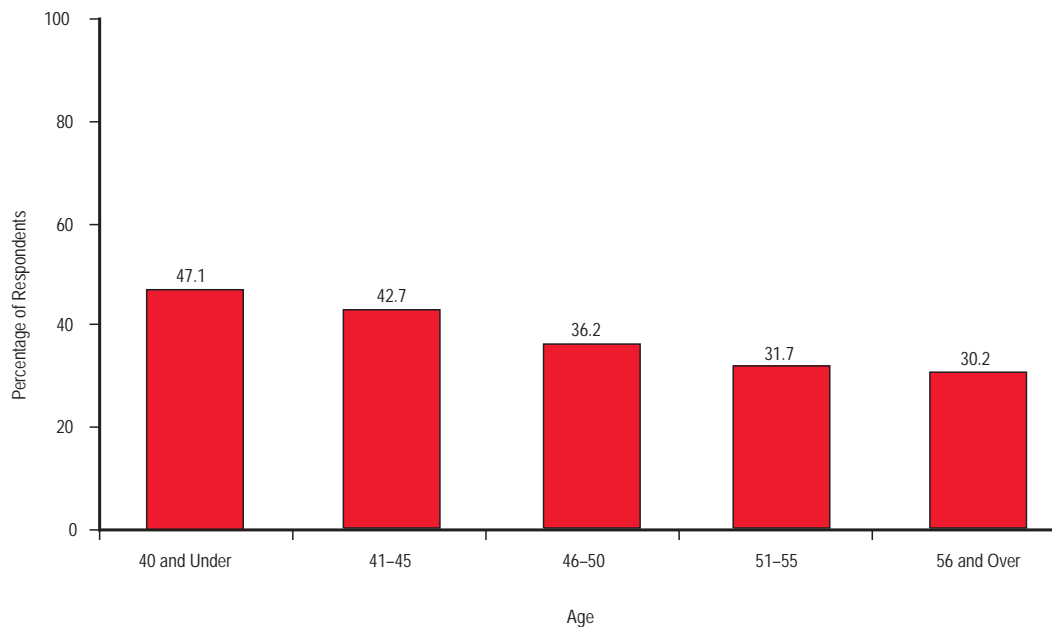


Figure 4-4.
Percentage of Respondents Who Agree or Strongly Agree That “My Direct Manager Is Actively Involved in My Growth and Development Skills,” by Age

more involved one-on-one with employees who have leadership potential. Susan Metros, deputy CIO of The Ohio State University, makes it a point to work closely with her staff on development issues. “I asked my staff how they wanted to grow professionally. It might not relate exactly to what we are doing, but I try to provide them with the professional development avenues that they need. I have one person who would like to program, so I find a way to support her. Another of my staff members plans to study for a Ph.D. in instructional technology, so I include her in meetings and projects that are directed at her interests.” Joyce Williams-Green, associate provost for information resources and CIO, Winston-Salem State University, and Lasell College’s Gelch feel it is important to identify staff members with potential and ambition and offer additional training, conferences, or other appropriate professional opportunities.

Interestingly, respondents in the central IT units, other central campus units, and schools, departments, and academic units responded similarly to one another. And we

found little variation across Carnegie class or institution type (public versus private). This suggests either a common level of managerial competency or a common level of employee expectations of managerial performance, or both.

Perhaps most interestingly, Table 4-3 shows again that higher education IT staff members rate their managers significantly more positively than do their industry counterparts, along nearly every managerial activity queried.⁷ We must note, however, that both higher education and private industry respondents show wide variation in responses.⁸

Salaries

While behavioral theorists and empiricists since Abraham Maslow have de-emphasized the importance of salary as “the” defining element of a work environment, it is easy both to measure accurately and to compare across economic sectors. And although salary may not be the most influential factor defining the work environment, it is unarguably important.⁹

Table 4-3. Perceptions of Direct Manager Attributes by Higher Education Central IT Staff and Private-Sector IT Professionals

	Higher Education Central IT Professionals (N = 921)*	Private-Sector IT Professionals (N = 400)*
My direct manager creates an atmosphere in which I feel free to speak openly	3.95	3.10
My direct manager provides me with a formal written review on a regular basis	3.21	2.94
My direct manager deals with conflict when it arises	3.51	2.97
My direct manager keeps me informed about things that affect my job	3.65	2.91
My direct manager provides feedback on a regular basis regarding my job performance	3.21	2.61
My direct manager is actively involved in my growth and development skills	3.09	2.49
My direct manager meets with me at least once a year to discuss my compensation	3.24	3.27

*Scale = 1 (Strongly Disagree) to 5 (Strongly Agree)

Figure 4-5 shows that three-quarters (75.8 percent) of survey respondents reported an annual salary of less than \$100,000, and nearly one-half (46.3 percent) earn less than \$75,000 per year. The median annual salary of respondents falls between \$75,000 and \$100,000. This compares favorably with the 2003 figures reported by Gartner Inc., which estimates median base annual IT salaries of \$68,800, median cash compensation including spot bonuses and other nonsalary cash items at \$73,200, and median bonuses of \$7,000.¹⁰

Higher education IT salaries ran up significantly during the dot-com heyday of the late 1990s. Several people interviewed mentioned that the dot.com bust brought higher education salaries more in line with industry salaries. Lev Gonick, vice president for information resources, Case Western University, benchmarks staff salaries. "I think that there is an assumption that there

are greater monetary rewards elsewhere. That was certainly a true statement three or four years ago, but I think it is less so now. I acknowledge our salaries will be, at some point, below the market. The combination of reasonable remuneration and better job security adds up to a pretty solid package. Security is an important factor. We also show that in our benchmarking."

Salary naturally depends on an individual's leadership role in the institution: nearly 60 percent (58.3 percent) of those with overall responsibility for IT earn more than \$100,000 per year. Despite the senior-most IT leaders' higher salaries, higher education's top IT leaders are probably paid less than their industry counterparts. In 2002, CIOs in private industry reportedly commanded an average total compensation of \$186,000 per year. Of course, company size strongly influences these salaries (see Table 4-4).



Figure 4-5.
Respondents'
Salary Ranges

Table 4-4. Private-Sector CIO Salaries, by Firm Revenue

Firm's Annual Revenues	Mean Private-Sector CIO Salary
Less than \$100 million	\$141,500
\$500 million-\$1 billion	\$226,600
More than \$5 billion	\$303,000

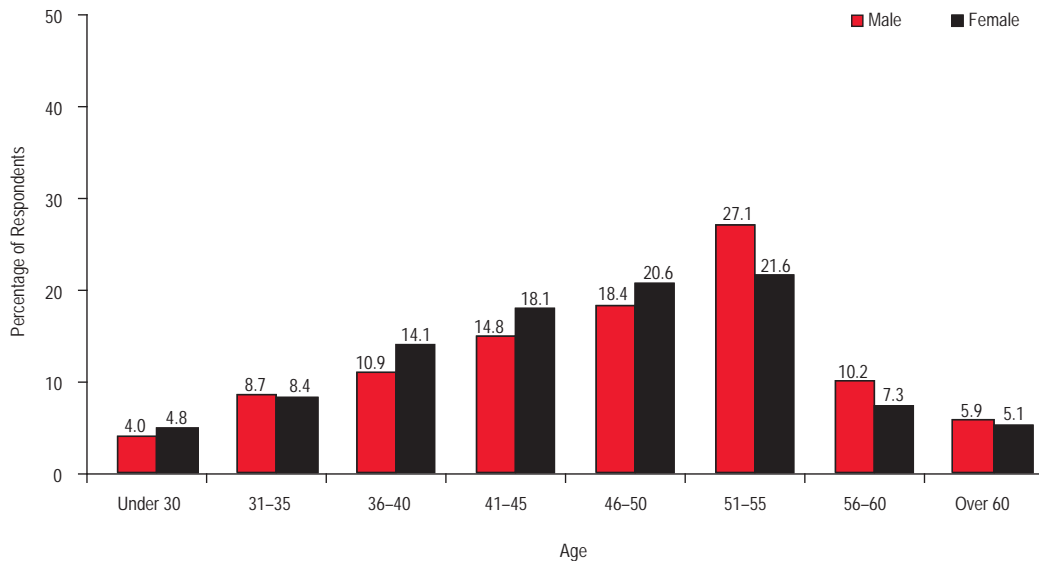
As might be expected, higher education aspirants to top IT positions report salaries somewhat higher than those of others without such aspirations. Placement within the institution (for example, central administration versus academic department, school, or college) and occupational role also matter. More than 46 percent (46.5 percent) of survey respondents working within central IT units earn more than \$75,000 per year, while fewer than one-third (30.5 percent) of those in local academic units report such salaries. Fewer than 10 percent (9.3 percent) of IT professional respondents in local academic units reported earnings above \$100,000 per year.

Nationally, as of February 2002, female IT professionals earned on average 12 percent less than male IT professionals.¹¹ Our female survey respondents also generally earn less

than male respondents: while only 40 percent (39.6 percent) of male respondents reported salary levels under \$75,000 per year, nearly 60 percent (57.1 percent) of women reported such earnings. Gender disparities also exist at the high end of salary levels: 27.4 percent of male respondents reported salaries above \$100,000 per year, compared with only 17.8 percent of female respondents. We can attribute some of this discrepancy to reported age differences, but not too differences in experience: 43.2 percent of men versus 34.0 percent of women responding to the survey were age 51 or older (see Figure 4-6), whereas male and female respondents reported similar years of experience in higher education central IT roles.

Role explains the larger portion of the gender-based salary discrepancies. Higher

Figure 4-6. Age of Respondents, by Gender



education’s IT profession, as reflected in this sample, is led largely by men, who hold nearly 80 percent (78.6 percent) of the senior-most IT positions reported in the ECAR survey.

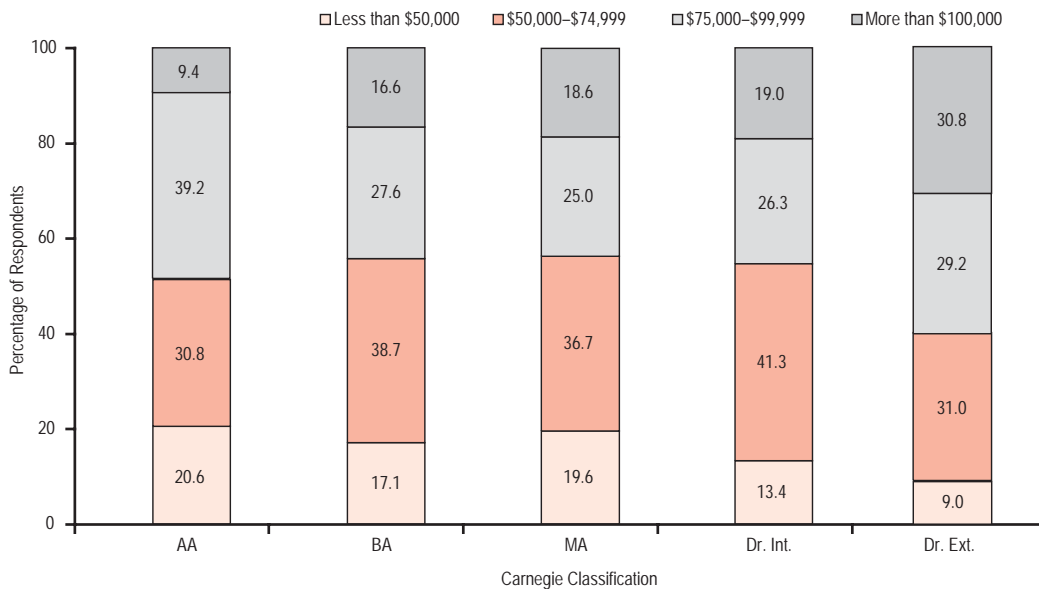
Not surprisingly, the IT professional labor markets also show some regional effects. Respondent salaries are distributed similarly across regional boundaries, with some notable exceptions: as expected, we found higher reported salary levels in states noted for high living costs, such as California,

Connecticut, Maryland, and the District of Columbia.

Reported salaries vary little by institutional mission, as Figure 4-7 shows, but there are two exceptions:

- ◆ Fewer respondents at AA institutions (9.4 percent) earn salaries above \$100,000 per year.
- ◆ Reported IT salaries at doctoral-extensive institutions vary from those in other Carnegie segments at both the high and low

Figure 4-7. Respondents’ Salary Ranges, by Carnegie Class



ends of the scale. Fewer respondents at these institutions earn less than \$50,000 per year (9 percent) and more earn above \$125,000 per year (15.6 percent).

The Academic Lifestyle

Our respondent population is highly educated (see Figure 4-8), with 13.4 percent having a doctorate degree and 60.7 percent a post-baccalaureate degree. We saw little difference among institutions by Carnegie class (with the minor exception of AA school respondents' having a somewhat lower percentage of doctoral degrees and a higher percentage of master's degrees) or at public versus private institutions. We did note a small gender difference: 15.3 percent of male respondents had a doctorate, versus 10.7 percent of female respondents; and 40.8 percent of men held an MA degree, versus 45.5 percent of women.

The senior IT leadership is the subgroup most likely to have an earned doctorate, at nearly one-quarter (22.4 percent) of respondents, and is also most likely to have a post-baccalaureate degree (78.2 percent). Noteworthy, too, is an apparent generation

difference in the earning of the doctorate and other terminal degrees: respondents over 55 are significantly more likely to have earned a doctoral degree. For many, educational attainment is a cohesive aspect of higher education's IT community. As John Isehour, director of information technology, Kennesaw State University, said, "I feel more at home in academics. I like the teaching and I have my Ph.D. Academics offers a certain type of lifestyle and flavor that I like and enjoy."

The high level of respondents' educational attainment also reflects the academic environment's strong influence. As Figure 4-9 shows, slightly more than 25 percent of respondents hold some faculty appointment, and 5.7 percent are tenured. Of the senior-most IT leaders, 34.9 percent hold an academic appointment, and 13.7 percent have tenure. Academic experience can be a real asset for a technologist in higher education. John Bruno, vice provost at the University of California, Davis, stated, "I have taught for many years at the University of California, and I have used technology in the classroom. That makes a big difference when I talk to faculty—I'm a faculty member

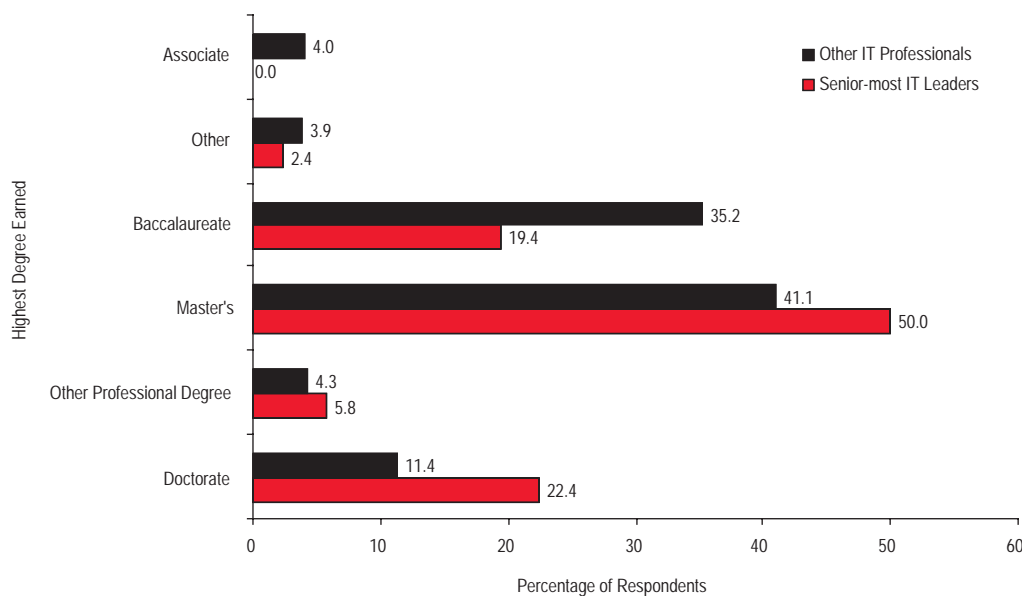
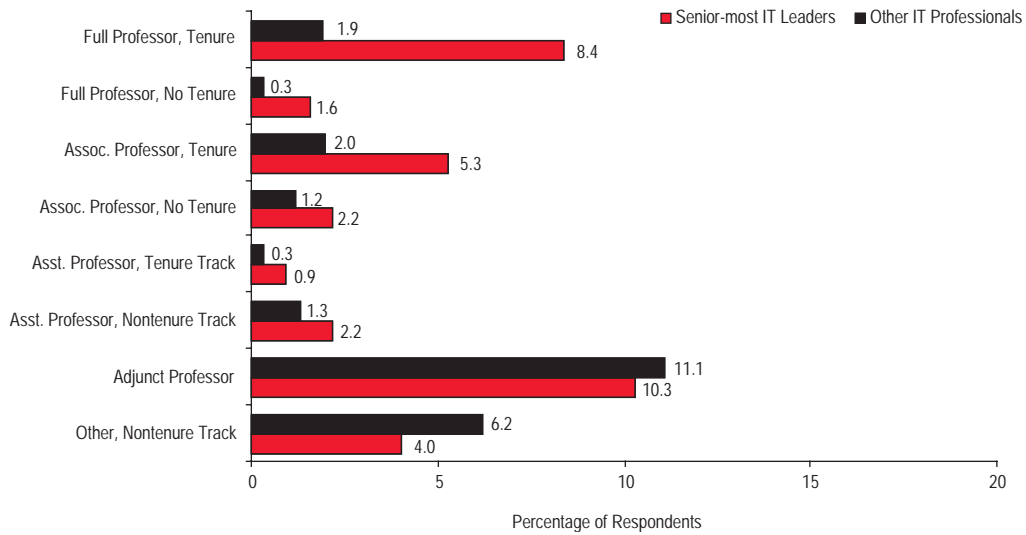


Figure 4-8.
Respondents' Highest Degree Earned, by Role

Figure 4-9.
Respondents'
Academic Appoint-
ments, by Role



talking to a colleague, and I share many of their experiences.”

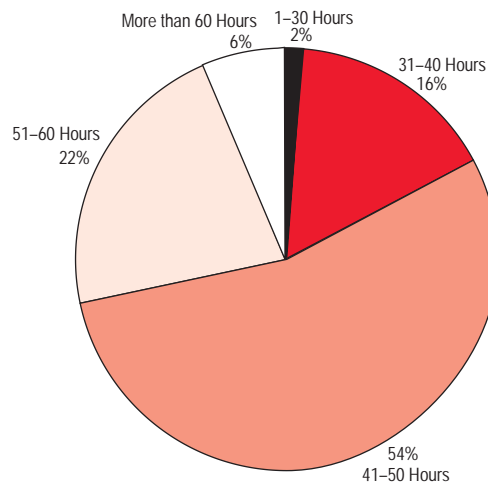
The University of Kansas’s vice provost for information services, Marilu Goodyear, elaborated further: “As I talk to someone about an issue, I can empathize: ‘When I log on to Blackboard for my course or when I conduct research, this happened and wasn’t it frustrating?’ It is nice to be in charge of a service and talk to your customers as a customer. Also, tenure enables you to take risks that you might not otherwise take.”

Working Hours

Higher education information technologists responding to our survey are

overwhelmingly full-time workers and work long hours (see Figure 4-10). The vast majority work more than 40 hours per week (82 percent), and nearly 30 percent (28 percent) work more than 50 hours per week. This work habit does not appear to be associated strongly with age, although a far higher proportion (41.6 percent) of respondents over 60 report working 50 or more hours per week, compared with 21.8 percent of respondents age 35 or under. This may be due to the relatively smaller number of respondents in the older age band (*N* = 96). Nearly one-third (31.3 percent) of male survey respondents work more than 50 hours per week, compared

Figure 4-10.
Respondents'
Hours Worked
Weekly



with one-quarter (24.1 percent) of female respondents. This is largely explained by the additional finding that women respondents report having more part-time jobs requiring less than 40 hours. IT organizations' work pace in general might cause some concern: a recent survey shows that IT employee burnout is a serious issue for 71 percent of companies.¹²

In this workforce sector, leadership has its costs: survey respondents holding senior-most IT positions work significantly more hours than other respondents. Almost half of senior-most IT leaders (45.8 percent) report working 51 or more hours per week, whereas approximately one-quarter of other IT professionals (24.8 percent) work 51 hours per week or more. Although they work long hours, many report that work life in the academy is, on balance, an attractive feature. According to Lasell College's Deborah Gelch, "In the corporate world, my stress level was 10, maybe 11 (on a scale of 1 to 10). At an institution [of higher learning], you have bad days, but usually the stress level is about a 4. There is a lot of responsibility. I have a large workload, and the stress is there, but it is a different kind of stress, rewarding and engaging, because the pressures directly relate

to supporting the institution's mission of connected learning, beyond simply meeting the bottom line. When I worked at the law firm, there were times when the system would go down, and my boss would tell me how many dollars per minute the firm lost because the attorneys could not bill their clients."

Respondents aspiring to the senior-most IT position straddle the bar on this dimension of work behavior (see Figure 4-11). Nearly one-third of these respondents (34 percent) report working 51 hours per week or more, compared with 23 percent of respondents not aspiring to the CIO position.

Professional Development Environment

We first looked at the current spending level for staff training as reported by the senior-most IT leaders (see Figure 4-12). More than 40 percent (44.4 percent) of senior-most IT leaders spend 1 percent or less of central IT operating budgets on staff training. Not surprisingly, this is considerably less than respondents would ideally spend in this area: while most senior-most IT leaders believe between 2 percent and 5 percent is appropriate for staff training, nearly 17 percent believe 10 percent or more should be spent.

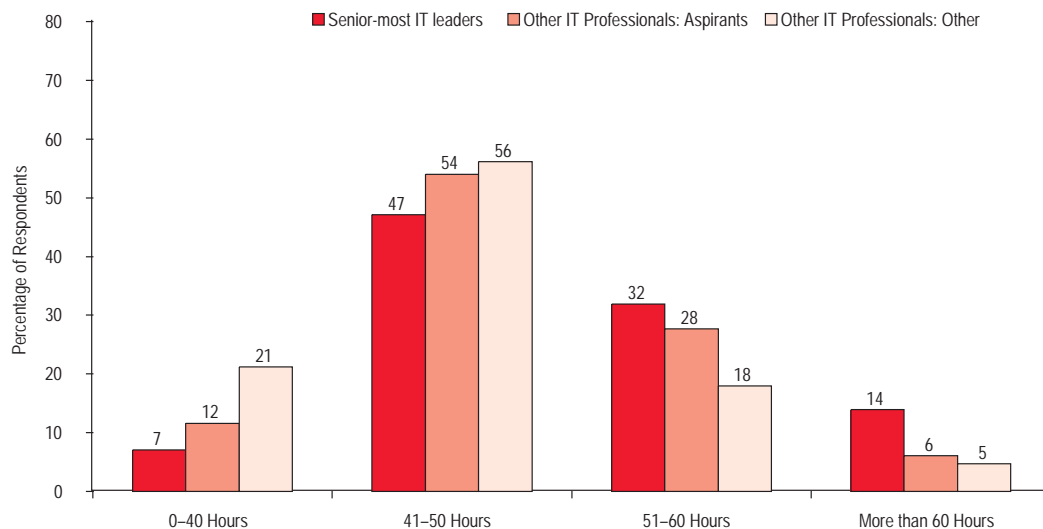
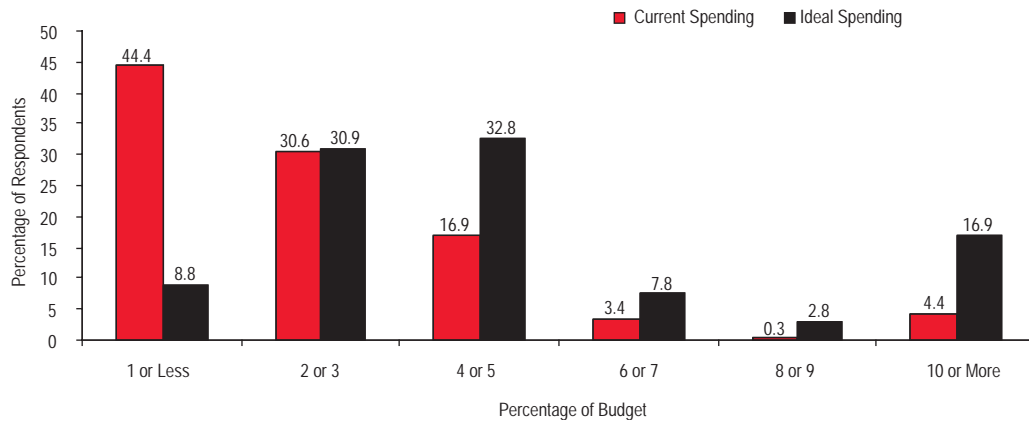


Figure 4-11. Respondents' Hours Worked Weekly, by Role

Figure 4-12.
Percent of Central
IT Budget for Staff
Training



Despite limited training resources, nearly all respondents (93.5 percent) attended at least one professional conference or meeting in the past two years. Interestingly, a somewhat greater percentage of those who aspire to a CIO position (97.9 percent) attended at least one professional conference or meeting than other respondents (90 percent). And a higher proportion (17.1 percent) of aspirants authored professional articles in the past two years than did nonaspirants (11.1 percent).

The IT leaders we consulted employ various training and development strategies. Dennis Trinkle, coordinator of information services and technology, DePauw University, makes training a mandatory activity. "I encourage staff to take advantage of all the conferences. Every IT employee has \$1,500 a year to spend on training or professional conferences. To spend the minimum, I push them out the door, even if they do not want to go. We do find more money for people to go to multiple conferences if needed."

Respondents see technical training as important—not only in quantity, but also in quality. Stony Brook University's Richard Reeder said, "The technology tools are getting very sophisticated today. This can be especially challenging, since there has been a shift from relatively stable tools with longer useful lives to a situation where neither the hardware nor the underlying software remains constant for very long. Training must

be elevated in priority to meet the demands of this environment."

Management training is especially important to help technically oriented people as they gain managerial responsibilities. As Normandale Community College's Niels Jensen stated, "I think there are a lot of people who have great technical skills, but unfortunately they have never received any real training in project management." As a result, IT staff members may never fully develop as managers. "I never had any management training or supervisory training until I was pretty high up in the organization," Georgia State University's Mary Jane Casto stated. "I was expected to figure it out, and fortunately I learned from my manager. Others aren't so lucky. They become managers and they do not know how to manage, so they remain technically oriented. In the last five years, Georgia State University has focused on training people in supervisory, managerial, and leadership skills."

Norman Imamshah, associate vice president for information services, University of Puget Sound, concurred. "I believe that the universities themselves should be training people for IT upper management. Unlike doctors or lawyers, we don't have a two-year program covering the major characteristics and requirements to be a CIO." So he not only sends staff members to technical training sessions but also emphasizes stress

management and planning skills sessions. Trinkle, of DePauw University, also nominates potential leaders to the Frye Institute.

IT leaders and professionals also develop new skills in ways not always factored into assumptions about formal training costs (see Table 4-5). When queried about their methods of acquiring new skills, using a Likert scale (1 = not at all to 5 = frequently, if not always), many survey respondents reported having good opportunities to develop new skills, visit other sites to learn effective practices, or attend training sessions. Of all respondents, more than 60 percent (63.2 percent) reported that they fairly often or frequently have opportunities to develop new skills on the job, nearly half (47.1 percent) attend training sessions fairly often or frequently, and more than one-quarter (27.7 percent) have regular opportunities to visit other sites to learn effective practices.

Mentoring

Higher education’s IT community now appears to offer many people an opportunity to

mentor and be mentored. Nearly half (47.2 percent) of survey respondents reported having (or having had) a mentor. Mentoring appears to have subtle but potentially important associations with gender, salary, industry commitment, and other expressed behaviors and preferences. While 54.5 percent of women reported having a mentor, only 42.4 percent of men said they have had or have a mentor. Survey respondents making less than \$100,000 per year less frequently report that they have or have had mentors (45.2 percent) than respondents making more than \$100,000 per year (54.8 percent). Nearly half (45.6 percent) of respondents who have a mentor plan to remain in a higher education career 15 years or more, while only 37 percent of those without mentors intend to do so.

A mentor’s presence could help younger IT professionals remain in higher education. Of respondents under 41 years of age, 58.3 percent of those without mentors plan to leave higher education in the next nine years, while only 41.7 percent of those

Table 4-5. Methods for Acquiring New Skills, by Role

	Senior-most IT Leaders		Other IT Professionals	
	Mean*	Standard Deviation	Mean*	Standard Deviation
IT staff members have opportunities to develop new skills on the job	3.99	0.755	3.61	0.902
IT staff members visit other institutions/ organizations to identify possible practices to adapt	3.23	0.937	2.87	0.935
IT staff attend training sessions to learn new skills	3.56	0.841	3.31	0.922

*Scale = 1 (Not at All) to 5 (Frequently, if Not Always)

with mentors plan to exit higher education in the same time frame. A mentor's presence doesn't seem to be associated with respondents' aspirations for a CIO position, nor does it seem closely associated with respondents' plans for their next career steps. Interestingly, 61 percent of respondents at college or university systems reported having mentors, while fewer than 43 percent of those at either master's or doctoral-intensive institutions claim a mentor.

Recruiting Future IT Leaders

Finally, despite the expressed desire for more training and development resources and a growing awareness and practice of mentoring, respondents generally do not believe that their institutions' future senior-most IT leaders will come from within their own institution. Fewer than one-quarter (24.9 percent) of senior-most leaders responding to this survey agreed or strongly agreed with the proposition that their successor will likely be recruited from within their institution. We need more research to understand why. Are the IT community's leaders generally failing to groom their successors, or is this a reflection of higher education's culture of securing its leaders from without—or both?

Endnotes

1. E. L. Boyer, *Scholarship Reconsidered: Priorities of the Professoriate*, Carnegie Foundation for the Advancement of Teaching, 1990, p. 7.
2. See, for example, J. H. Newman, *The Idea of the University*, Notre Dame Series in the Great Books, July 1982; M. D. Cohen and J. G. March, *Leadership and Ambiguity: The American College President*, McGraw-Hill, 1974; J. G. March and H. A. Simon, *Organizations*, John Wiley, 1958; J. Galbraith, *Managing Complex Organizations*, Addison-Wesley, 1973; and K. E. Weick, "Contradictions in a Community of Scholars: The Cohesion-Accuracy Tradeoff," in J. L. Bess, ed., *College and University Organization: Insights from the Behavioral Sciences*, New York Univ. Press, 1984.
3. G. Keller, *Academic Strategy: The Management Revolution in Higher Education*, Johns Hopkins Univ. Press, 1983, pp. viii–ix.
4. We advise readers to exercise caution in interpreting the findings regarding ethnicity. There is a risk of both sample bias and respondent bias resulting in lower-than-actual response rates among potential minority respondents. Also, the low overall number of minority respondents ($N = 114$) suggests caution in any attempts to generalize about higher education or EDUCAUSE member institutions.
5. This may reflect an inherent bias in the EDUCAUSE database: younger professionals are more likely to seek technical training than to consume services typical of EDUCAUSE.
6. L. C. Ware, "What Do You Think of Your CIO?" *CIO Research Reports*, 15 Sept. 2003, <<http://www2.cio.com/research/surveyreport.cfm?id=63>>.
7. The higher education cohort excludes senior-most IT leaders to enable an apples-to-apples comparison.
8. While it appears clear that, in general, higher education managers are well regarded in these areas of managerial impact, many respondents do not agree. Among private-sector respondents to the *CIO Magazine* survey, many respondents disagreed or strongly disagreed with the statements, despite mean scores that suggest mild agreement.
9. A. Maslow, *The Farther Reaches of Human Nature*, Viking, 1971. This book describes Maslow's famous "hierarchy of needs."
10. Gartner compensation figures include entry-level salaries. As EDUCAUSE is largely a management-oriented organization, the EDUCAUSE sample likely has a disproportionate representation of managers. Hence, median salaries in the EDUCAUSE sample are likely to be higher than median salaries for all IT workers in higher education.
11. "Women Make 12 Percent Less Than Men," *Dice.com*, 25 Feb. 2002, <<http://www2.cio.com/metrics/2002/metric328.html>>.
12. J. Surmacz reports on a study by Meta Group, *CIO Magazine*, 26 Mar. 2003, <<http://www2.cio.com/metrics/2003/metric520.html>>.