EDUCAUSE

2016 EDUCAUSE Core Data Service (CDS) Benchmarking Report

UNCOMMON THINKING FOR THE COMMON GOOD

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About CDS

Since 2002, the EDUCAUSE Core Data Service (CDS) has been providing higher education CIOs and senior IT leaders with the benchmarks they need to make strategic decisions about IT at their institutions. On average, more than 800 institutions (both within and outside the United States) participate in a survey about IT financials, staffing, and services. Survey participants are rewarded for their time and effort with access to CDS data through a self-service portal that enables them to benchmark their IT organizations against those of their peers. In addition to gaining access to CDS data, institutions also participate in CDS for the following reasons:

- To study their IT organization
- To benchmark against past performance
- To look at trends over time
- To start gathering and using metrics
- To have data available “just in case”

About the 2016 CDS Benchmarking Report

The 2016 CDS Benchmarking Report summarizes key findings from the CDS 2016 survey, provides a glimpse into the breadth of CDS data, and ultimately provides you with an opportunity to conduct your own benchmarking assessment. The customizable graphs contained within this report are meant to be used to assess your IT operation compared to that of peer institutions of similar size, control, or Carnegie Classification.

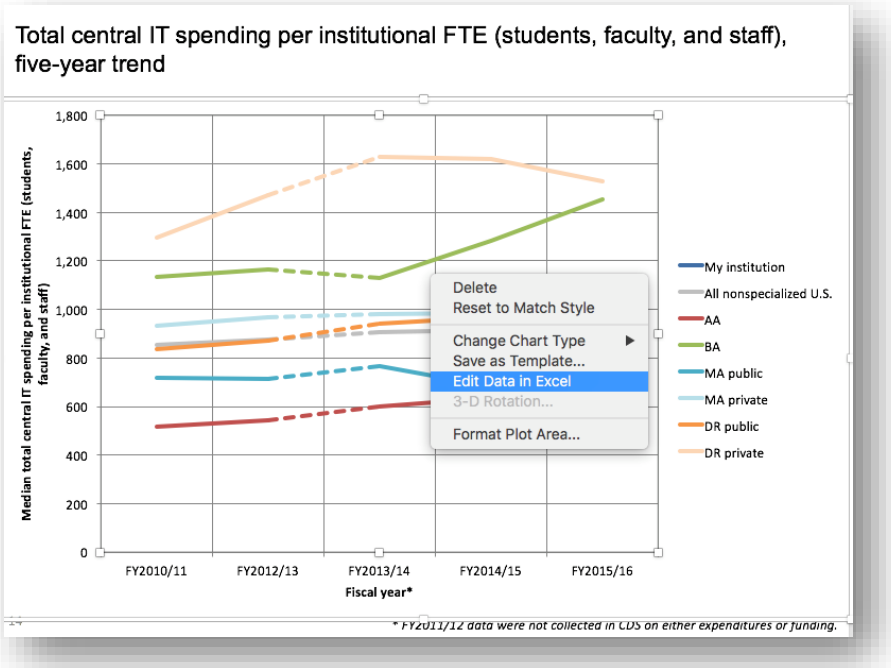
As you consider the metrics and benchmarks in this report in relation to your institution, findings that differ from your experience should inspire questions, not answers. When questions do arise, CDS data can facilitate further investigation (if your institution participated in CDS 2016). If your institution did not participate, consider adding your data to the next CDS survey, launching in July 2017.

The CDS 2016 survey concluded with 784 participants. The metrics discussed in this report focus primarily on FY2015/16 central IT financials, staffing, and services from 680 nonspecialized U.S. institutions. Metrics are calculated for each of six Carnegie Classification groupings using the 2010 classification system (AA, BA, MA public, MA private, DR public, and DR private). These groupings provide the most granular breakdown by institutional type possible (given available sample sizes) and should provide suitable comparison groups for most institution types and sizes within the United States.

Forty-seven specialized U.S. institutions and 57 non-U.S. institutions from 18 countries participated in the 2016 survey; however, small sample sizes from each of these groups preclude meaningful aggregate analysis. If your institution is a specialized U.S. institution or a non-U.S. institution, this report may be used to compare your institution to institutions in a similar Carnegie Classification or to the metric calculated for All (non-specialized) U.S. institutions. A list of CDS 2016 participants can be found on the CDS website.

Customizing 2016 CDS Benchmarking Report Graphs, in Five Steps

1. Review the slide notes for background on why each metric is important and to identify the origin of each metric.
2. Use the CDS 2016 survey and IPEDS* data to calculate values for your institution.
3. Right-click on the slide graph and select “Edit Data…” in the pop-up menu.



** IPEDS data are used to normalize metrics in CDS based on institutional size and budget. More information about IPEDS data is available online.*

Customizing 2016 CDS Benchmarking Report Graphs, in Five Steps (cont'd)

4. Enter data for your institution where indicated in the Excel spreadsheet.

5. Check to make sure data for "My Institution" are now visible.

	A	B	C	D	E	
1	Total central	My institutio	AA	BA	MA public	MA
2	FY2010/11		$516	$1,135	$717	
3	FY2012/13		$544	$1,166	$715	
4	FY2013/14		$599	$1,129	$768	
5	FY2014/15		$637	$1,281	$684	
6	FY2015/16		$697	$1,455	$822	
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10		To update the chart, enter data into this table. The data				
11						
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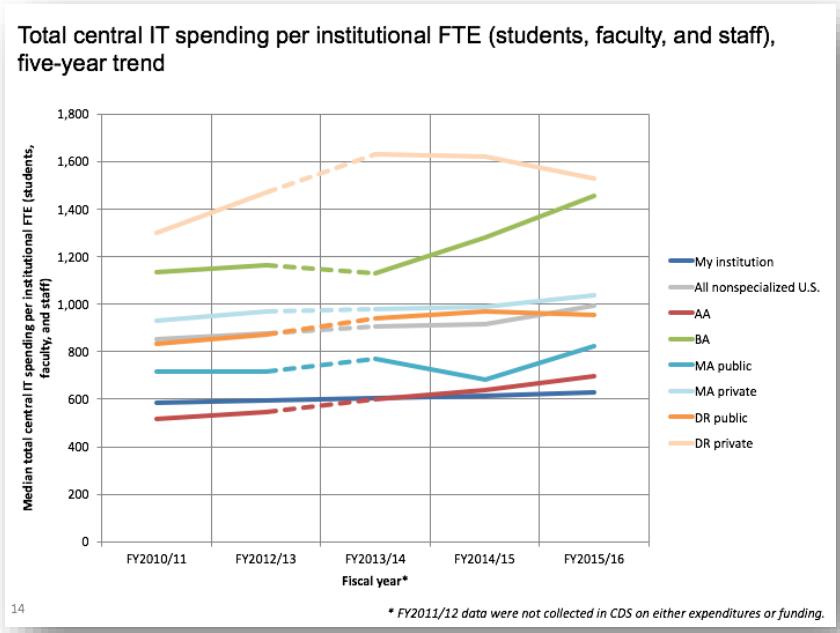


Introduction to Benchmarking

Today's institution must run efficiently and effectively. Having a clear understanding of your organization's financial, staffing, and operational status is critical to making informed decisions and optimizing the impact of IT; having the same information about your peers and aspirant peers is even better.

You can:	With CDS benchmarking data on:
Make the case for additional resources by comparing resource allocations to those of peers or estimating the level of investment required to achieve a certain output or service level.	• Central IT FTEs per 1,000 institutional FTEs • Total central IT spending per institutional FTE (students, faculty, and staff)
Make the case for organizational structure or governance by uncovering best practices for IT leader reporting structures, IT governance structures, or distributed IT service delivery models.	• CIO reporting line • IT governance maturity • Central IT service portfolios
Calibrate your performance against best practices and "best in class" institutions that have set the bar for your institution.	• CDS participants have the ability to customize benchmarking assessments by selecting specific peer institutions with which to compare.
Communicate the value of IT by comparing service portfolios and service performance to financial investment.	• Services provided by central IT compared to total IT expenditures and IT expenditures by IT domain area.
Assess the institution's digital capability to support strategic initiatives such as e-learning, student success technologies, and analytics.	• Maturity and technology deployment for a suite of digital capabilities, including e-learning, student success technologies, and analytics.

Steps for a Successful Benchmarking Assessment

** Evaluating data quality is important even when using CDS data. As you analyze CDS data be sure to evaluate whether the budget and staffing numbers reported are in line with what is expected and please report suspicious data to benchmarking@educause.edu.*

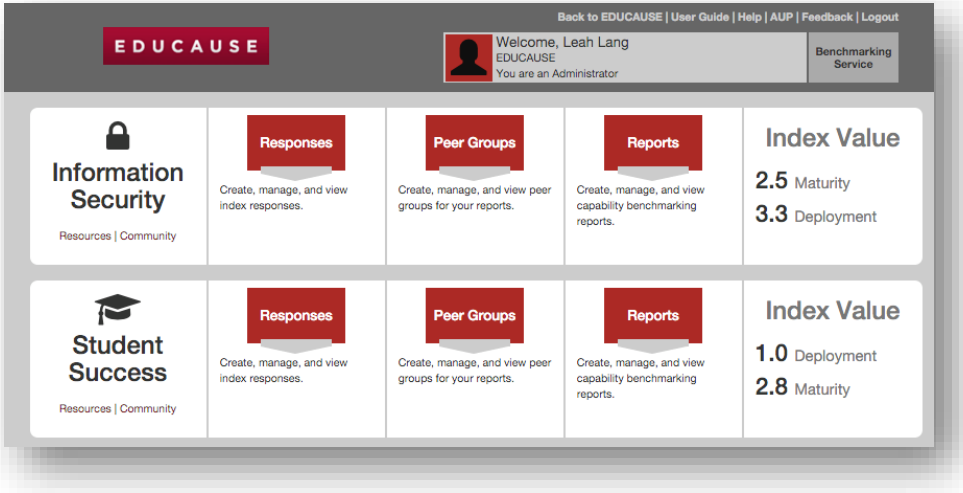
Identify Your Goals

The first step to a successful benchmarking study is to identify your goals. CDS data can support general benchmarking studies with goals such as “identify best practices” or “communicate the value of IT,” as well as more-targeted efforts such as “make the case for additional resources.” For example, the table below provides a view into how certain CDS metrics (all of which are contained in this report) can be used to address the 2017 Top 10 IT Issues.

	2017 Top 10 IT Issue	Supporting metrics	Slide(s)
1	Information Security	Institutions that have conducted any sort of IT security risk assessment	40
2	Student Success and Completion	Most commonly deployed student success technologies	39
3	Data-Informed Decision Making	Systems most likely to be replaced in the next three years	45
4	Strategic Leadership	Institutions whose highest-ranking IT officer is on presidential cabinet	35
5	Sustainable Funding	Percentage of central IT spending on running, growing, and transforming the institution	18
6	Data Management and Governance	Most commonly achieved information security practices	43
7	Higher education affordability	Central IT ongoing compensation, in-house infrastructure, and external providers spending as a percentage of total central IT spending	17
8	Sustainable Staffing	Central IT training spending per central IT staff FTE	31
9	Next-Gen Enterprise IT	Systems most likely to be replaced in the next three years	45
10	Digital Transformation of Learning	Most common teaching and learning support services	36

Next-Level Benchmarking:

The EDUCAUSE Benchmarking Service



In January 2016, EDUCAUSE launched the EDUCAUSE Benchmarking Service (BETA). This service is built on the Core Data Service (CDS) database but broadens both audience and application. CDS helps CIOs benchmark the staffing, financials, and services of their IT organizations. The EDUCAUSE Benchmarking Service takes the use of analytics to the next level by helping CIOs and other campus leaders measure their digital capability to support strategic initiatives. The EDUCAUSE Review article, The Digitization of Higher Education: Charting the Course describes those capabilities and provides advice for attaining them. In July 2017, this service will be refined and released to all EDUCAUSE member institutions that participate in the CDS survey.

The service provides capability reports comprised of maturity and deployment indexes for a suite of strategic initiatives. Participants gain access to semi-customized benchmarking reports.

The reports support an institution's efforts to:

- Measure the capability to deliver IT services and applications in a given area
- Examine multiple dimensions of progress—technical and nontechnical—such as culture, process, expertise, investment, and governance
- Enable institutional leaders to determine where they are in delivering a service and where they aspire to be
- Measure the degree to which an institution has deployed the technologies related to delivering a service, based on a standard scale reflecting stages of deployment
- Measure maturity in innovation broadly, reflecting on key elements to help develop and maintain a culture of innovation that supports the use of new technology in support of institutional and student success

Summary of the Landscape

To provide a brief, high-level view of the data contained within this report, below are the nonspecialized U.S. metrics for some of the most commonly used CDS benchmarks:

IT Financials

- $993 Total central IT spending per institutional FTE (students, faculty, and staff)
- 4.5% Total central IT spending as a percentage of institutional expenses

- 54% Central IT ongoing compensation spending as a percentage of total central IT spending
- 0% Central IT fixed-term labor spending as a percentage of total central IT spending
- 1% Central IT professional development spending as a percentage of total central IT spending
- 34% Central IT in-house infrastructure and services spending as a percentage of total central IT spending
- 4% Central IT spending on external providers as a percentage of total central IT spending

- $581 Distributed IT spending per institutional FTE at institutions with less than 75%centralization of IT expenditures

IT Staffing

- 7.9 Central IT FTEs per 1,000 institutional FTEs
- 18% Student worker FTEs as a percentage of total central IT FTE
- $1,119 Central IT professional development spending per central IT staff FTE

- 4.0 Distributed IT FTEs per 1,000 institutional FTEs at institutions with less than 75% centralization of IT staff

IT Services

- 14 Student FTEs per lab/cluster workstations provided by central IT
- 33% Percentage of institutions with a dedicated person whose primary responsibility is information security
- 24% Institutions planning to replace IT service desk management systems in the next three years

IT Financials

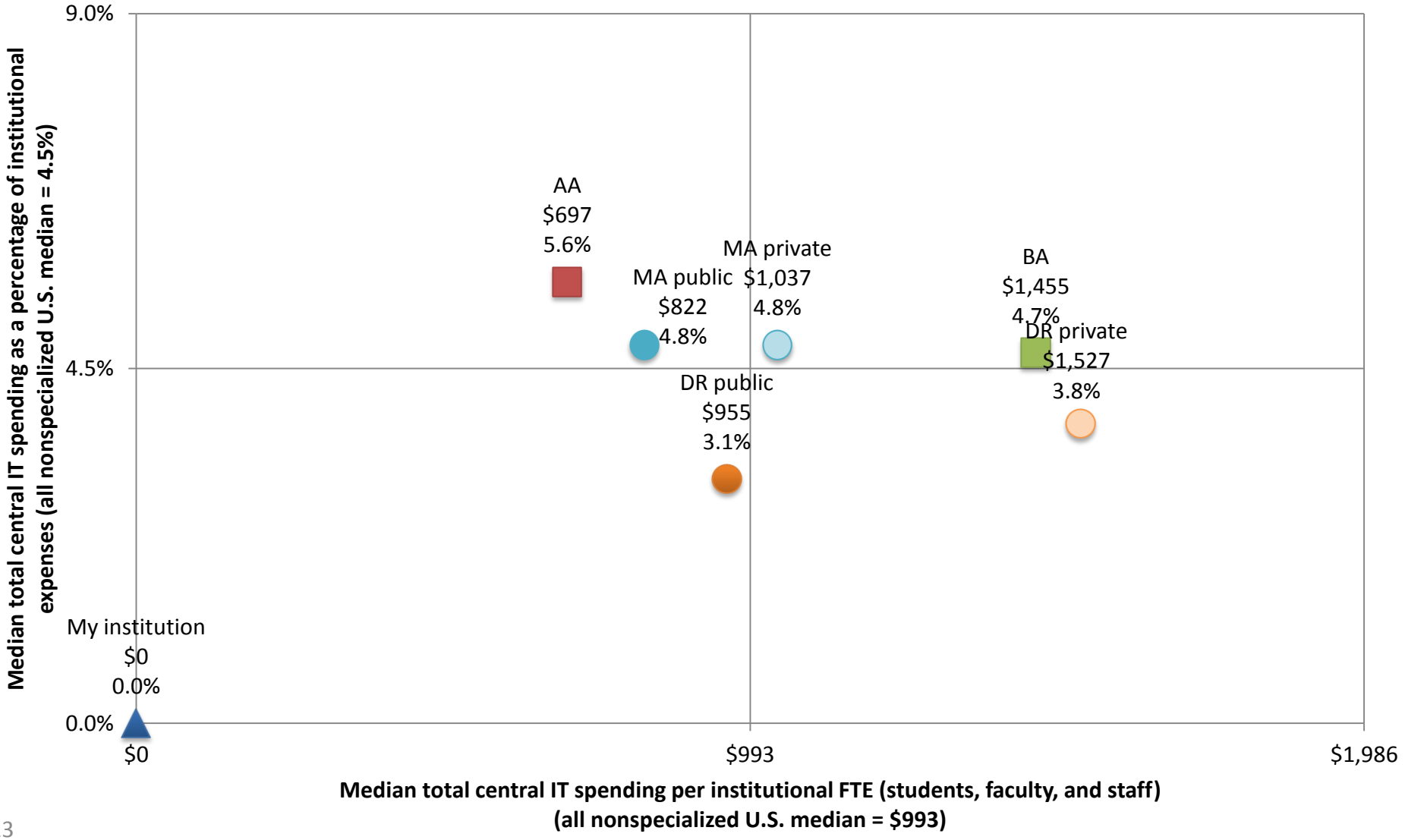
The first step to strategically funding IT is to identify budget parameters based on type of institution, institutional population, and institutional budget. Then, based on institutional priorities and your current IT environment, determine a spending portfolio that will get you to where you want to be. Breaking the budget down by dollars spent running, growing, and transforming the institution; by each IT domain area; and by capital versus operating work will help you determine the right blend of innovation spending to operating spending for all areas of IT.

The metrics contained in this section can help you address the following questions:

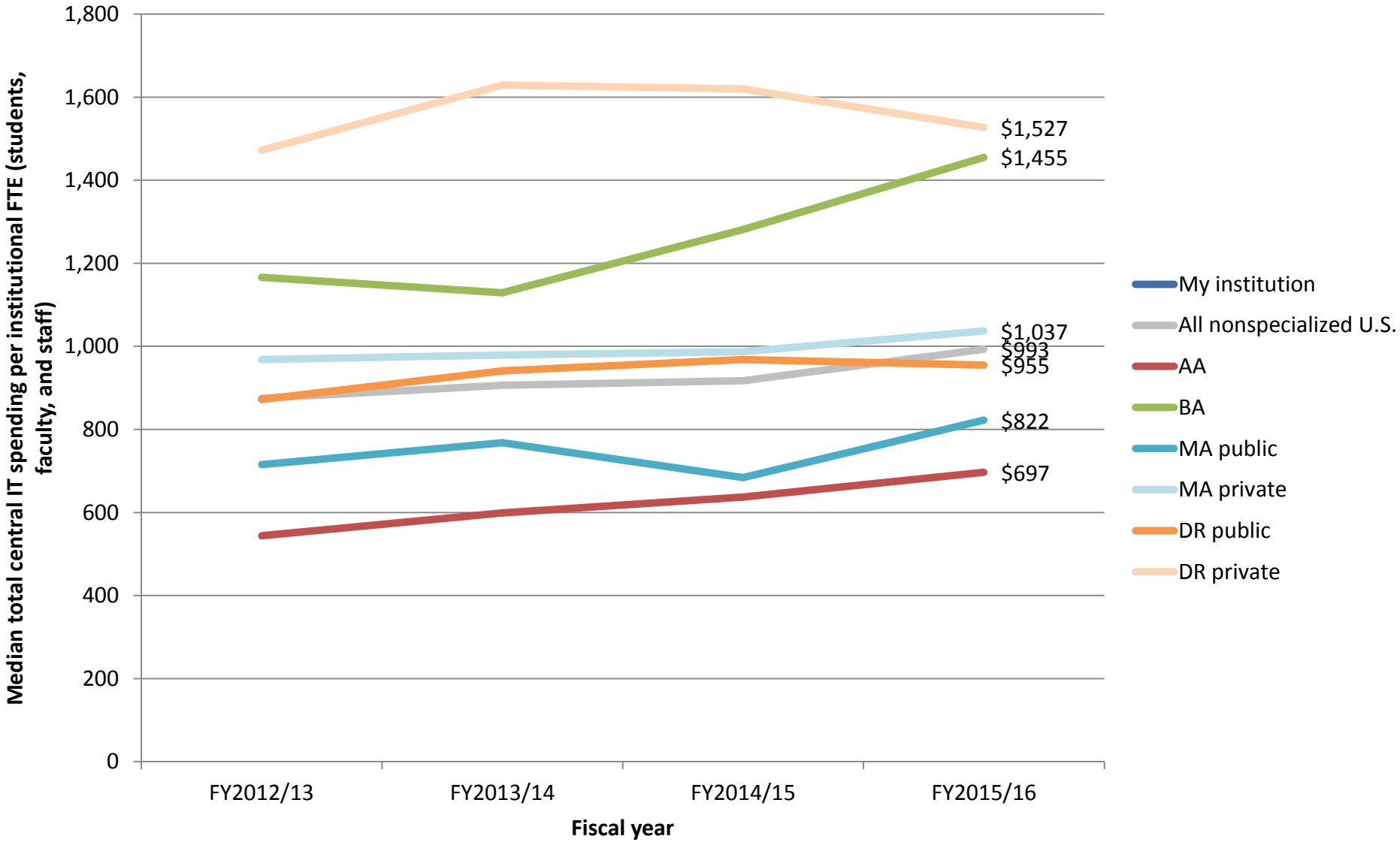
- What is a practical range for total budget based on my institution type, institutional population, and institutional budget? (metrics 1–3)
- Are changes in my budget from the previous fiscal year in line with changes in peer budgets? (metric 4)
- What is an appropriate distribution of spending for my institution? (metrics 5–7)
- How does my institution compare in terms of centralization of IT expenditures and staffing? (metric 8)

Metric		Slide(s)
1	Total central IT spending per institutional FTE (students, faculty, and staff) vs. Total central IT spending as a percentage of institutional expenses	13
2	Total central IT spending per institutional FTE (students, faculty, and staff), four-year trend	14
3	Total central IT spending as a percentage of institutional expenses, four-year trend	15
4	Percentage of institutions with a 5% or greater increase/decrease in central IT spending	16
5	Central IT ongoing compensation, in-house infrastructure, and external providers spending as a percentage of total central IT spending	17
6	Percentage of central IT spending on running, growing, and transforming the institution	18
7	IT domain area spending as a percentage of central IT spending	19–21
8	Percentage of institutions with distributed IT spending and staffing	22

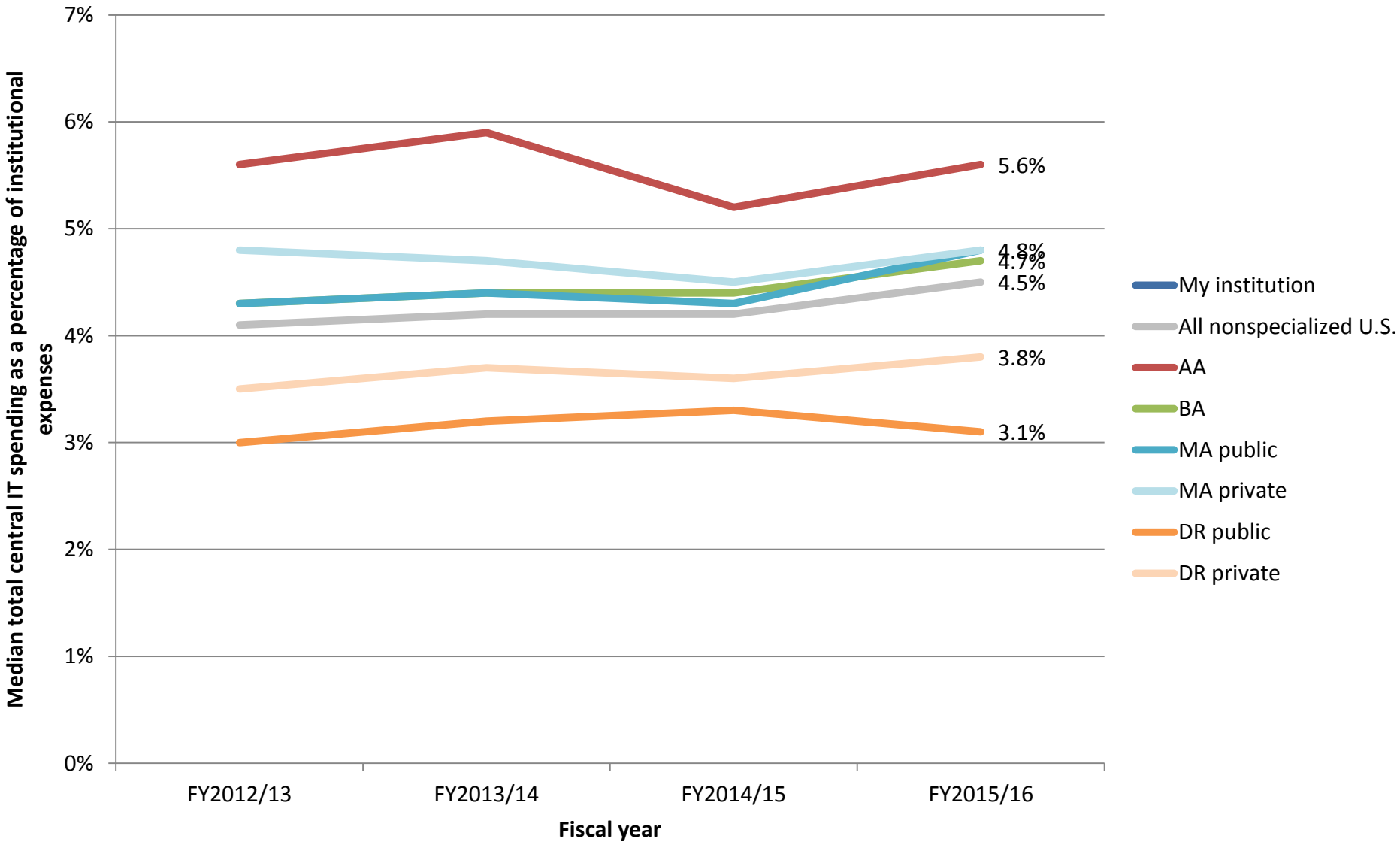
Total central IT spending per institutional FTE (students, faculty, and staff) vs. total central IT spending as a percentage of institutional expenses



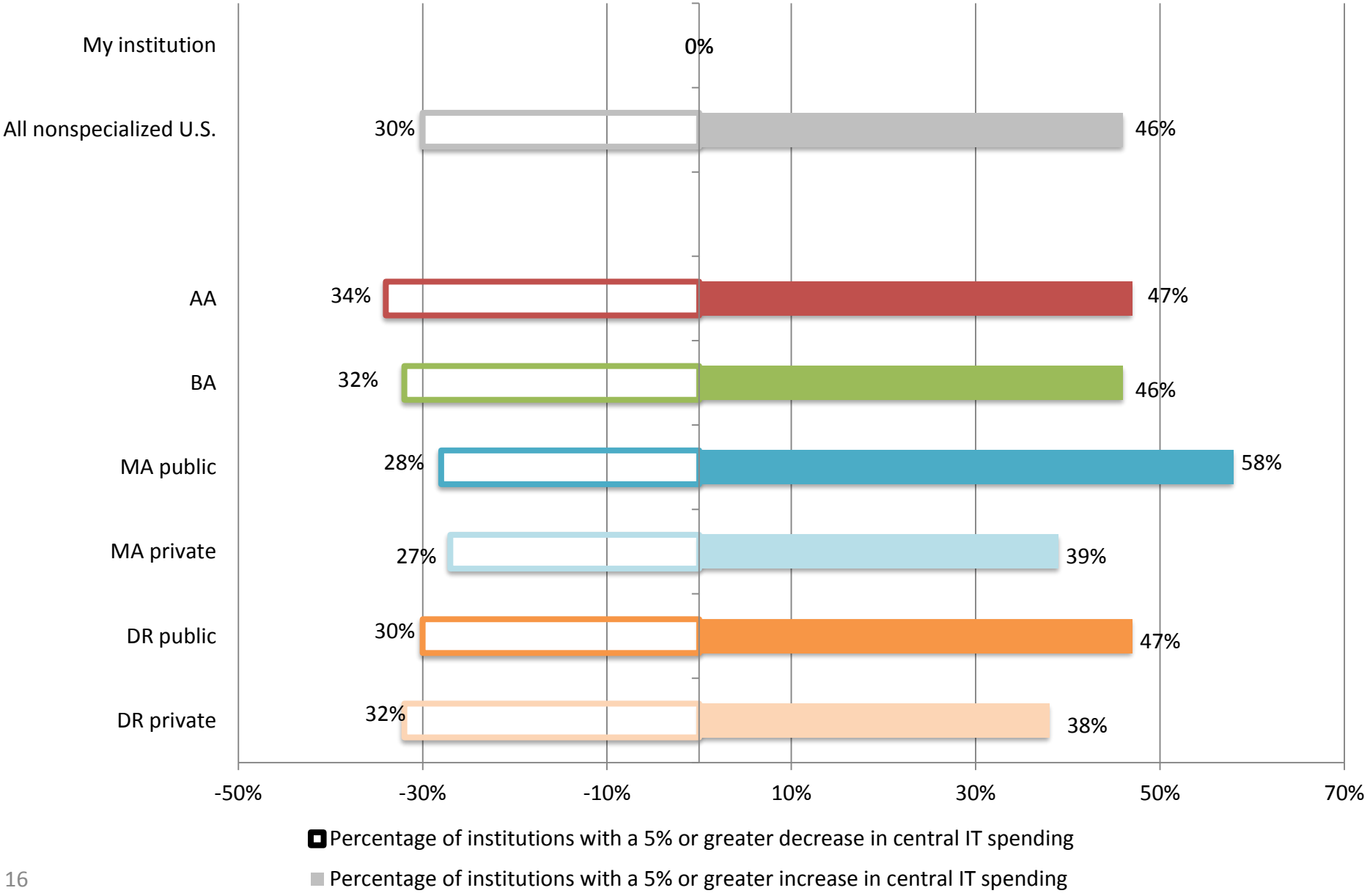
Total central IT spending per institutional FTE (students, faculty, and staff), four-year trend



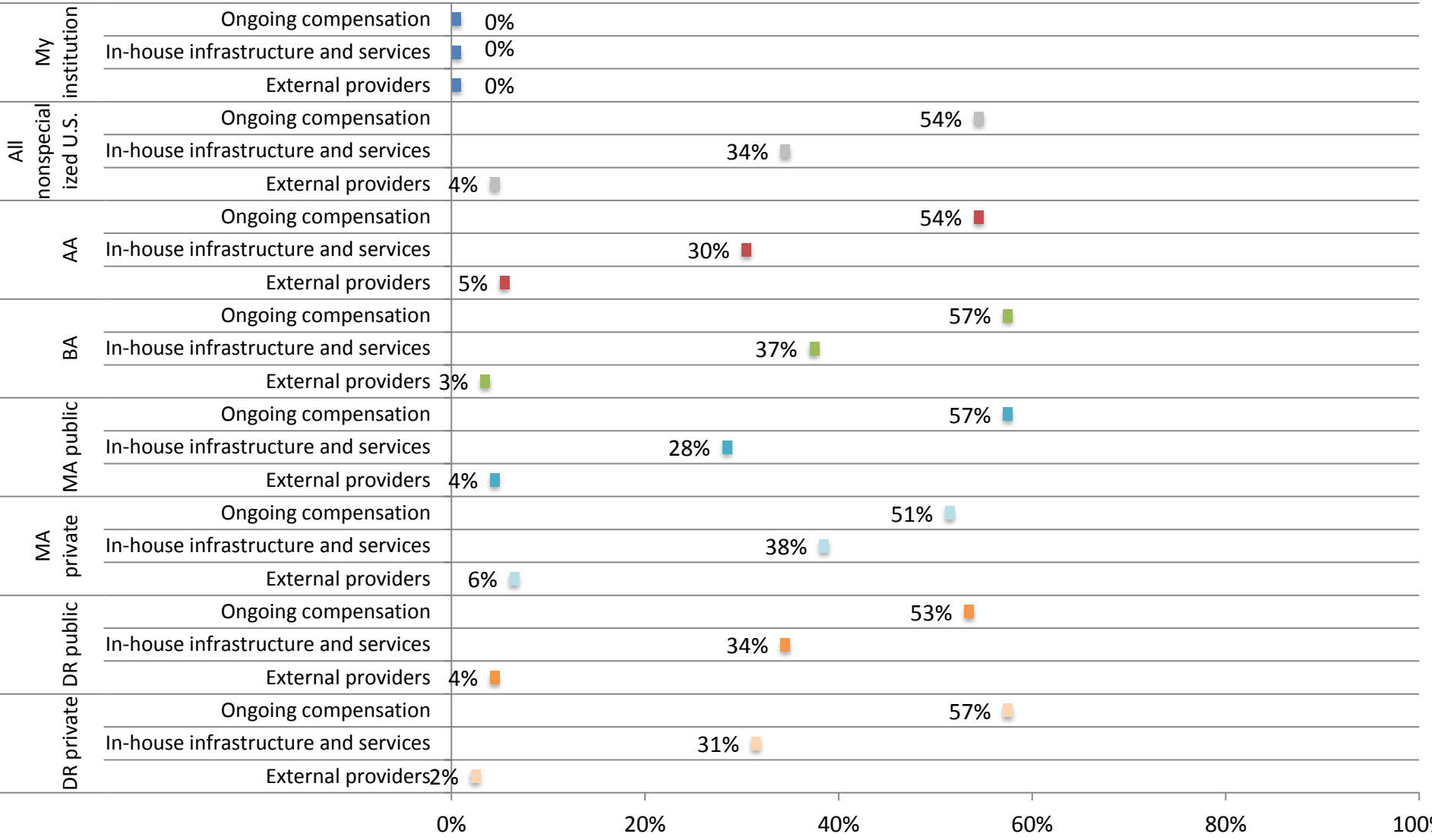
Total central IT spending as a percentage of institutional expenses, four-year trend



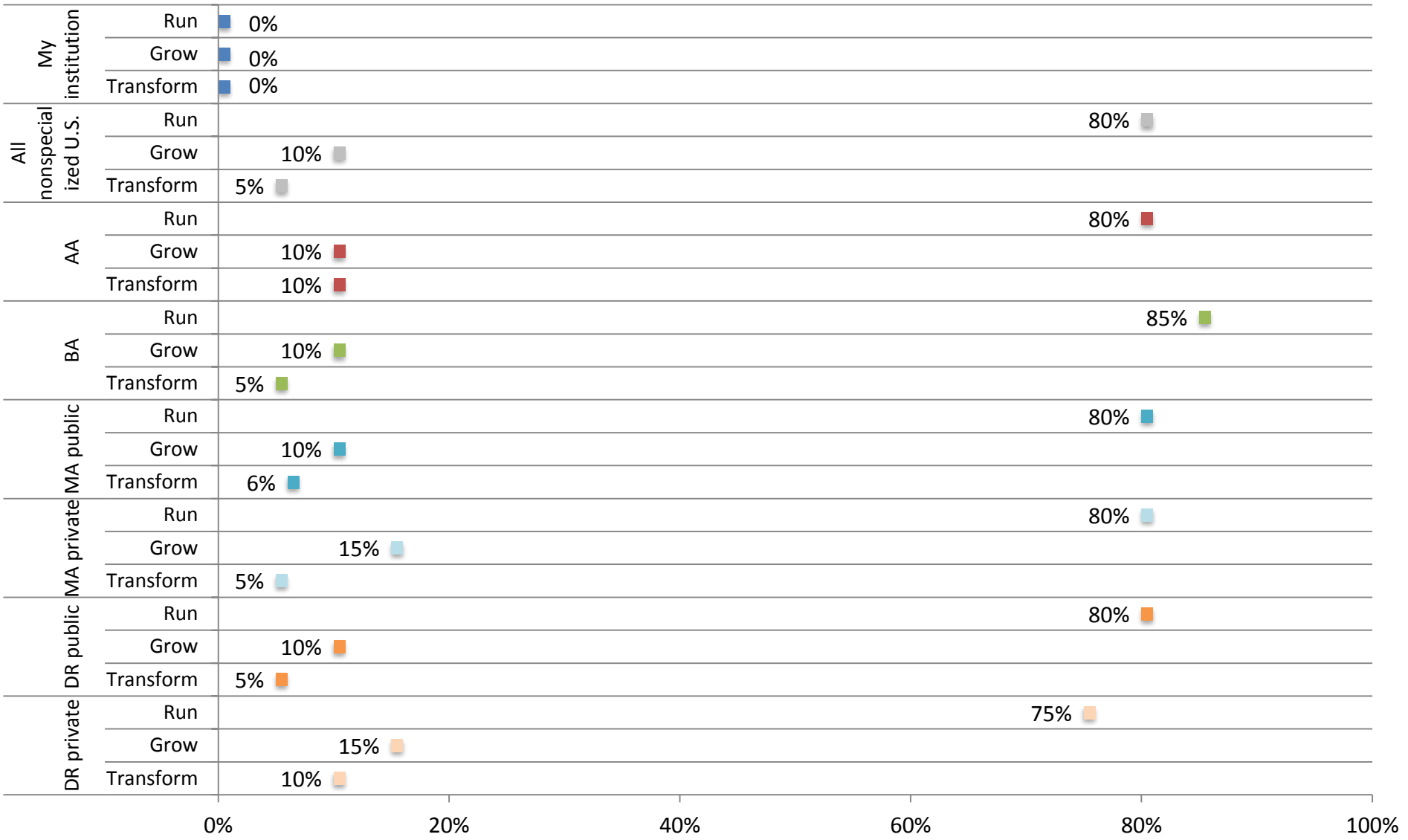
Percentage of institutions with a 5% or greater increase/decrease in central IT spending over the previous year



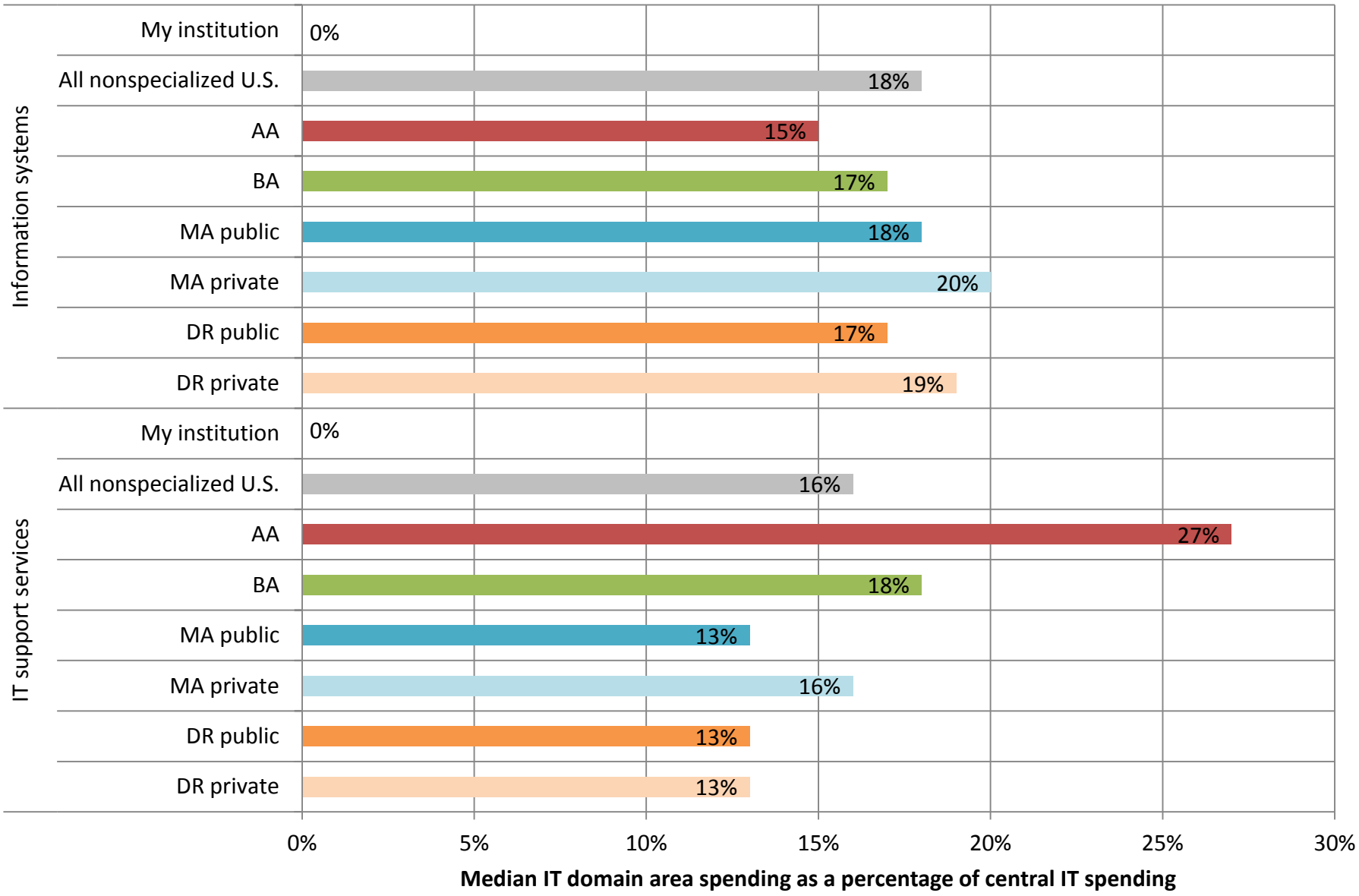
Central IT ongoing compensation, in-house infrastructure, and external providers spending as a percentage of total central IT spending



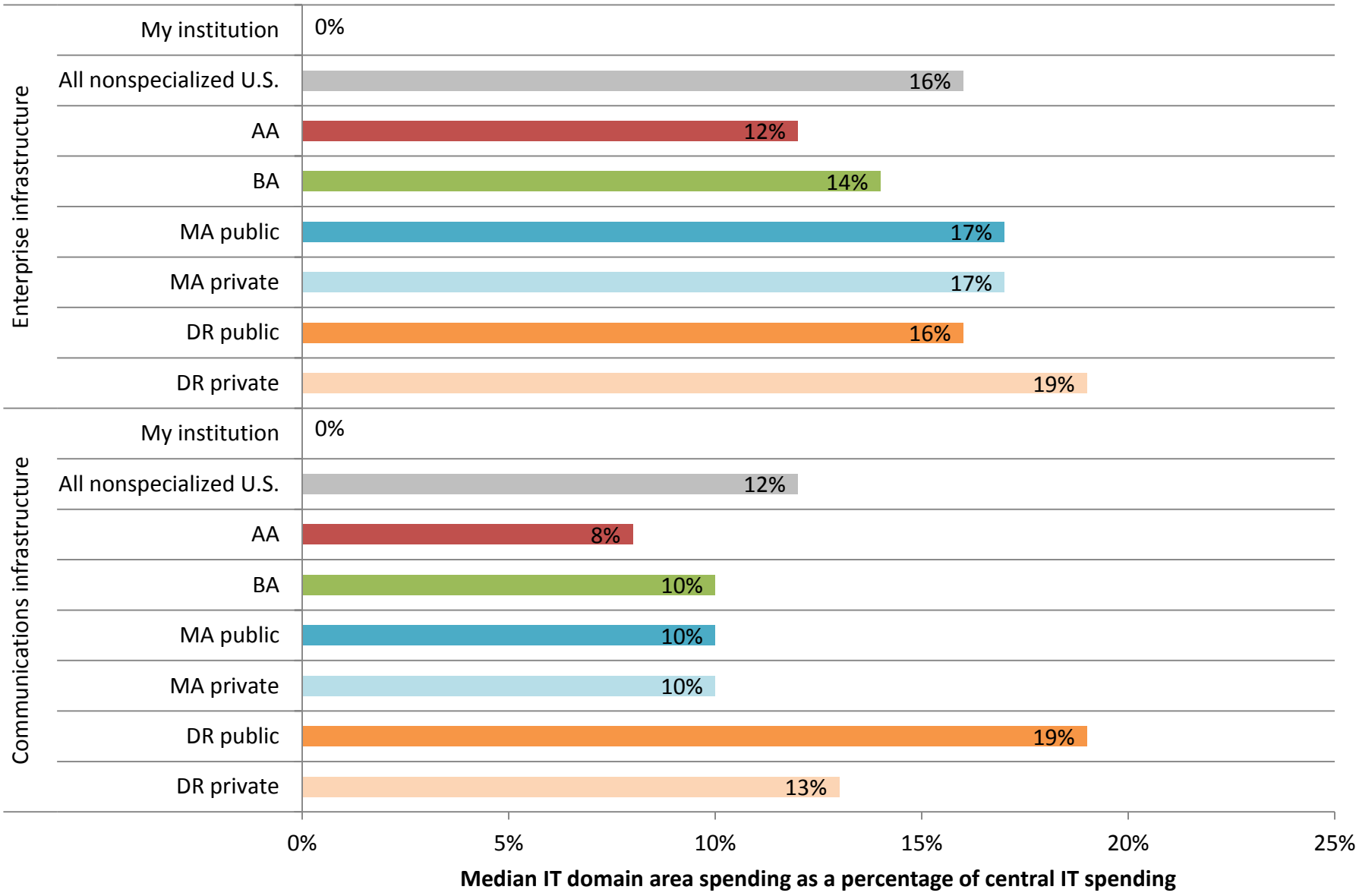
Percentage of central IT spending on running, growing, and transforming the institution



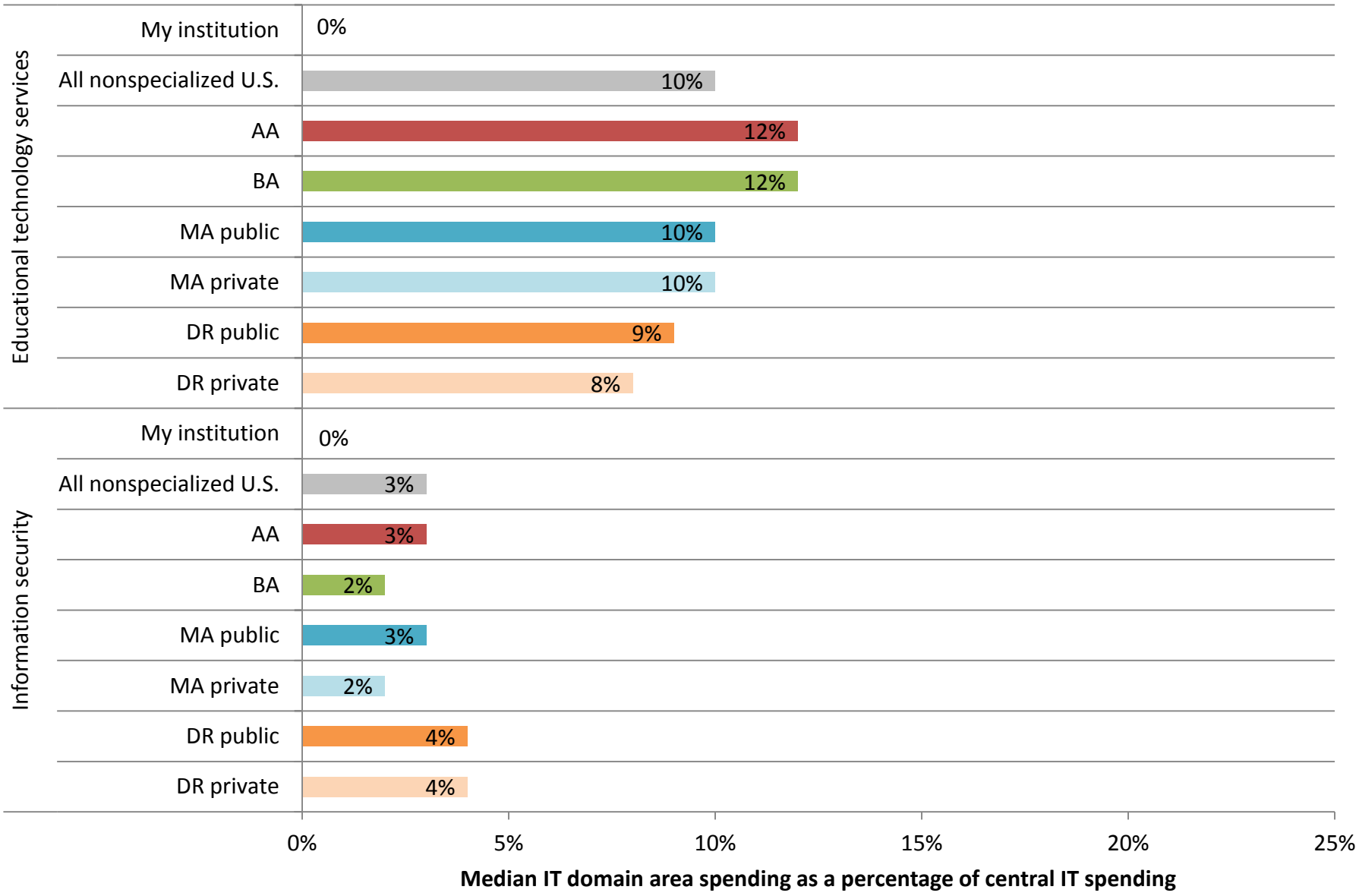
IT domain area spending as a percentage of central IT spending



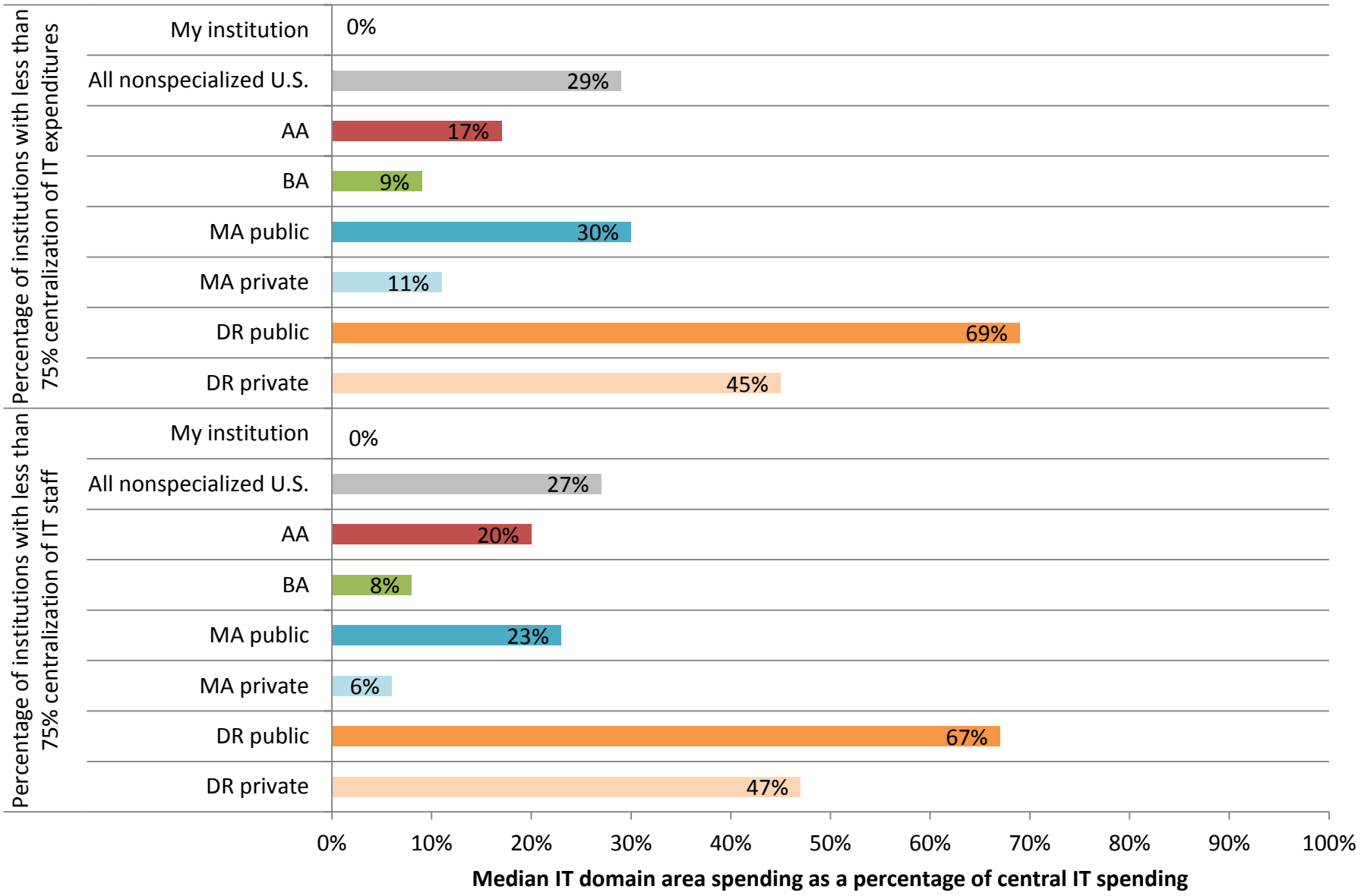
IT domain area spending as a percentage of central IT spending



IT domain area spending as a percentage of central IT spending



Percentage of institutions with distributed IT spending and staffing



IT Staffing

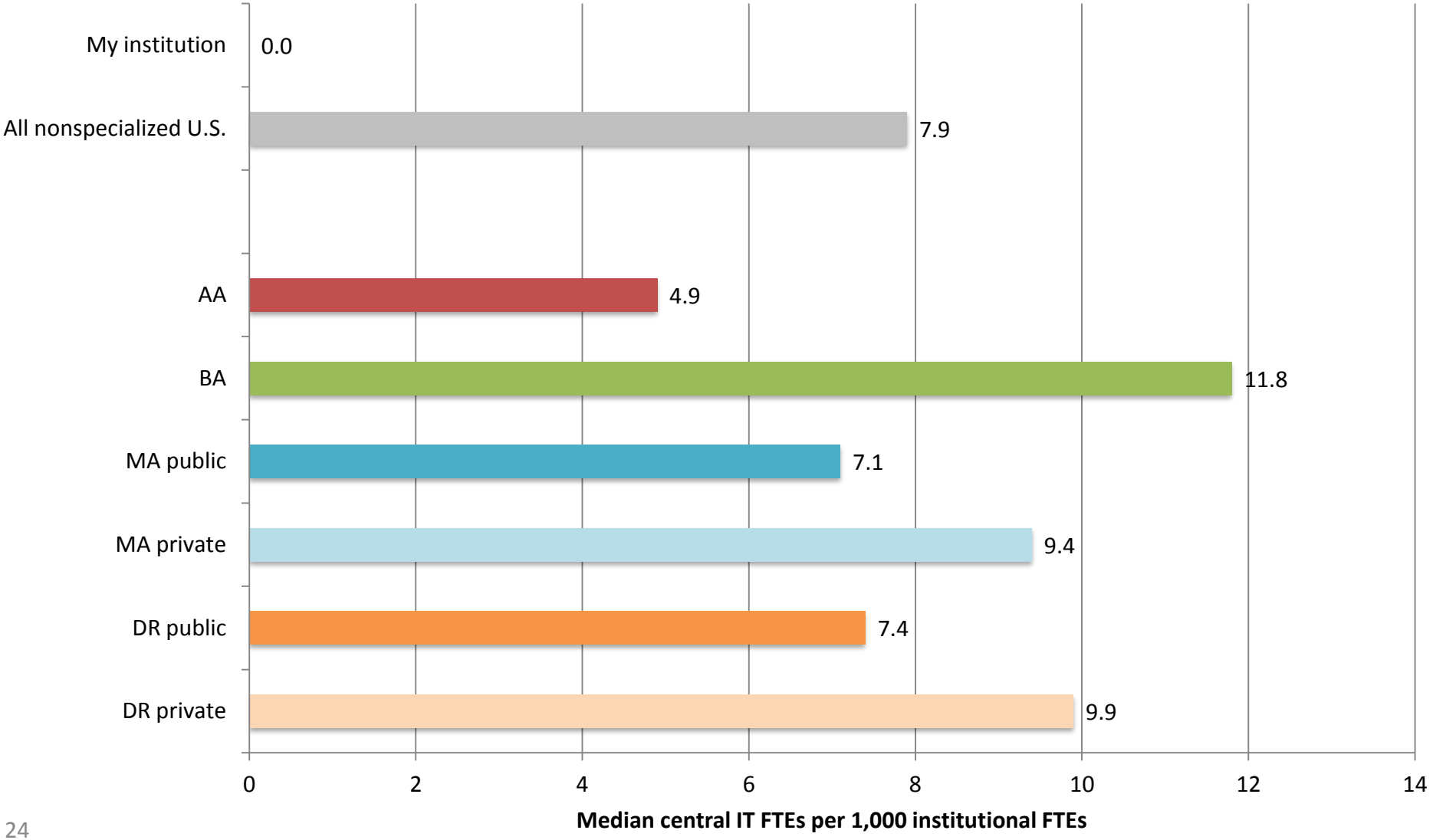
Staffing models are evolving. Ensuring adequate staffing capacity and staff retention is #8 in the 2017 Top 10 IT Issues. Services are being outsourced, but institutions need staff to manage outsourcing and need more services and bandwidth to support evolving technology needs. Does this mean fewer staff or the same number of staff with different skills? Through this evolution, you'll want to keep an eye on several benchmarks: ratio of central IT staff to institutional FTE, student workers as a percentage of total central IT FTE, percentage of IT staff across IT domain areas, and professional development spending per IT staff member. Paying attention to how others are staffed and knowing how your peers balance their staff portfolio can help you find the right fit. Knowing what your peers are spending on staff training can help you budget for updating skill sets of existing staff.

The metrics contained in this section can help you address the following questions:

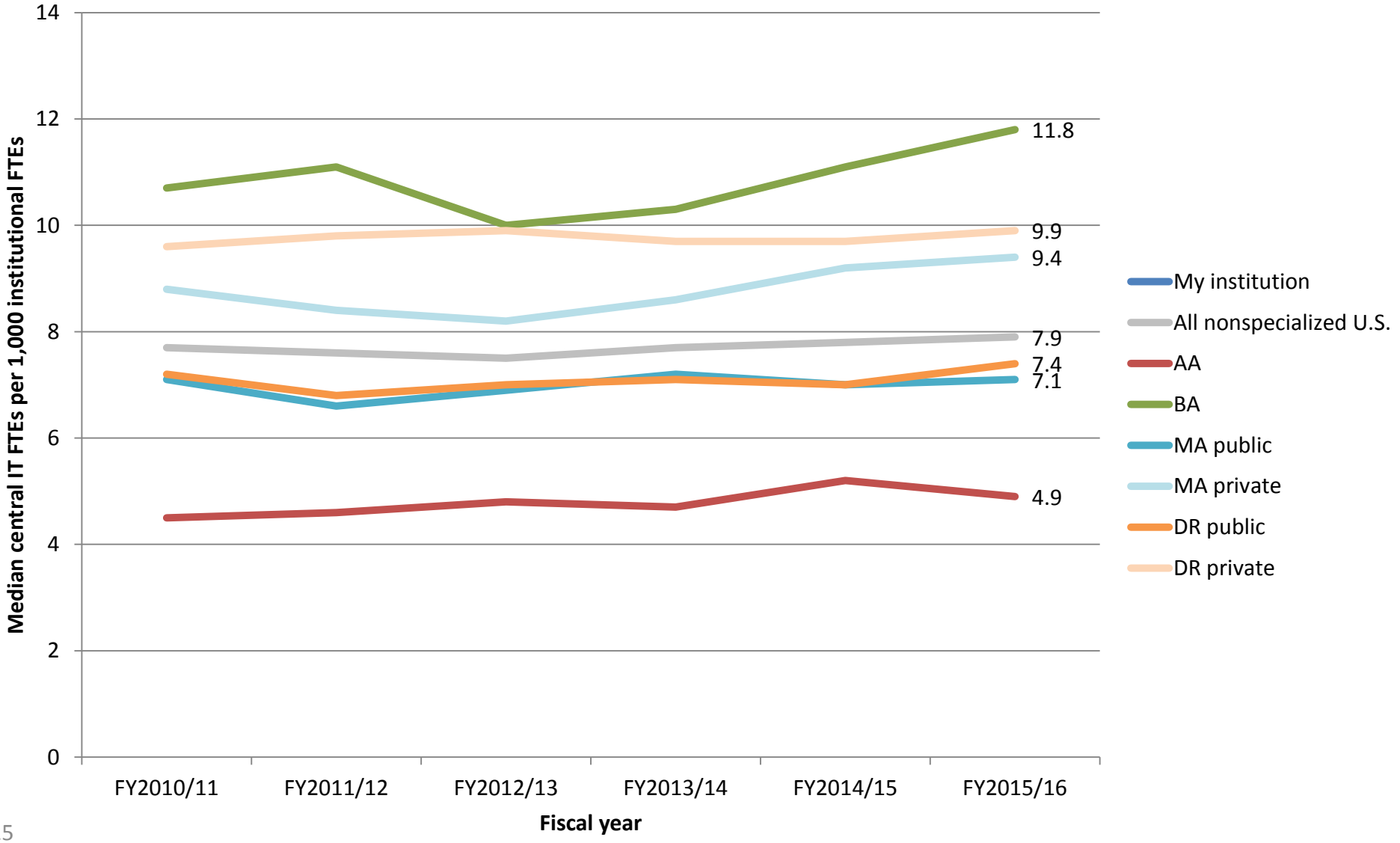
- What is a practical range for staff size based on my institution type and size? (metrics 1–2)
- What is the right blend of staff? (metrics 3–5)
- Do I have the appropriate budget to retrain current staff? (metrics 6–7)

Metric		Slide(s)
1	Central IT FTEs per 1,000 institutional FTEs	24
2	Central IT FTEs per 1,000 institutional FTEs Six-year trend	25
3	Student worker FTEs as a percentage of total central IT FTEs	26
4	Student workers as a percentage of total central IT FTEs Six-year trend	27
5	Central IT domain area FTEs per 1,000 institutional FTEs	28–30
6	Central IT training spending per central IT staff FTE	31
7	Central IT training spending per central IT staff FTE Four-year trend	32

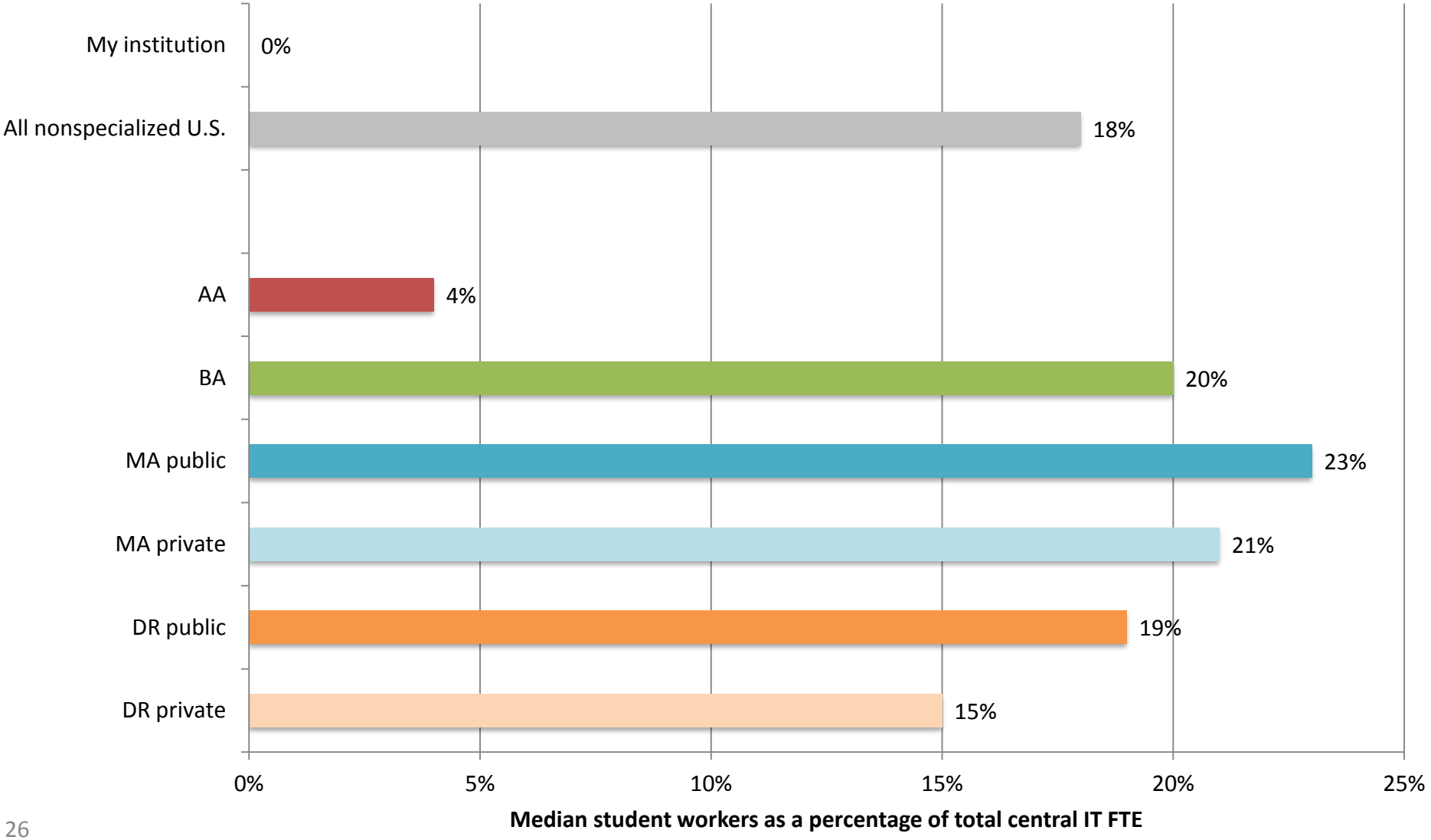
Central IT FTEs per 1,000 institutional FTEs



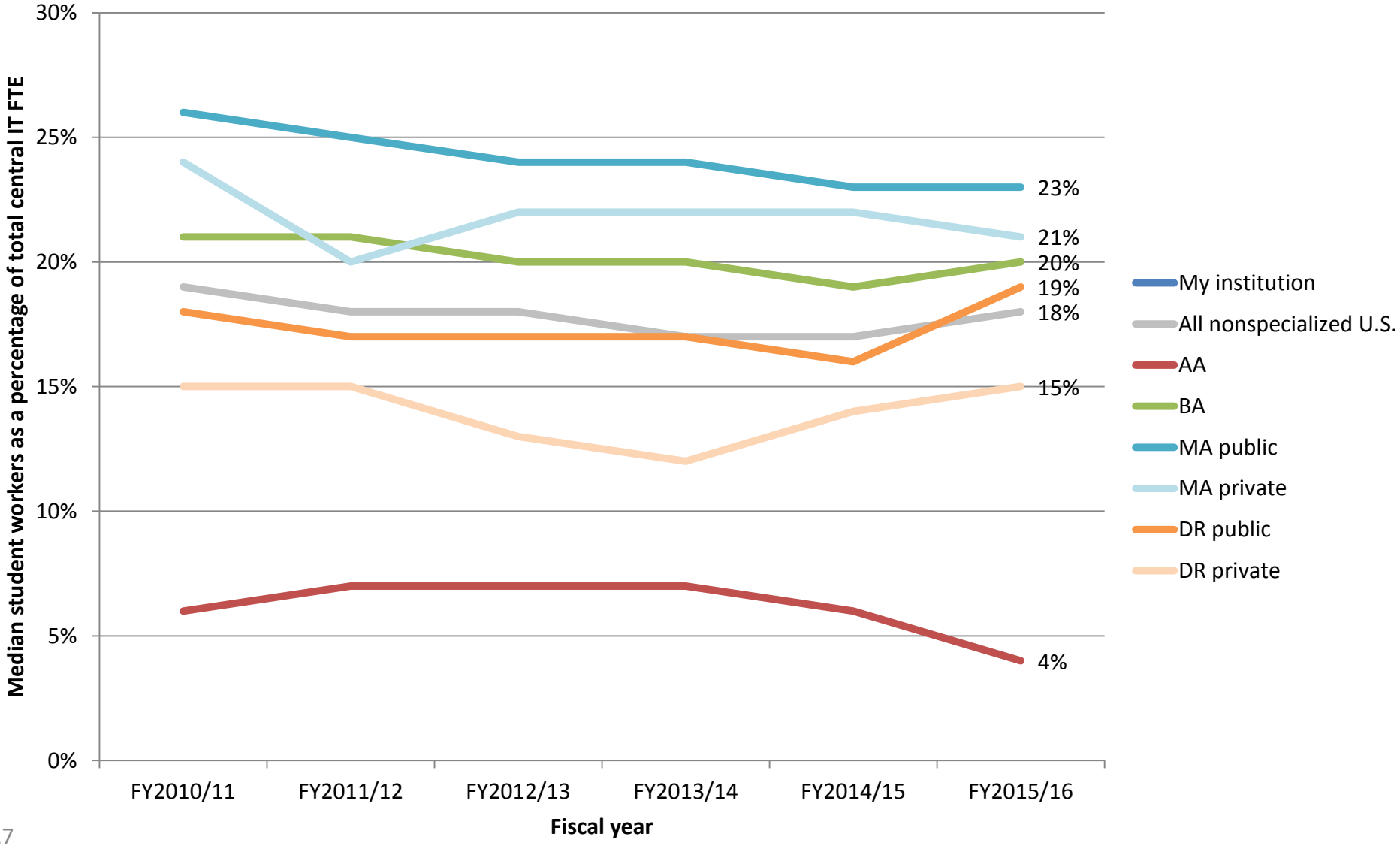
Central IT FTEs per 1,000 institutional FTEs, six-year trend



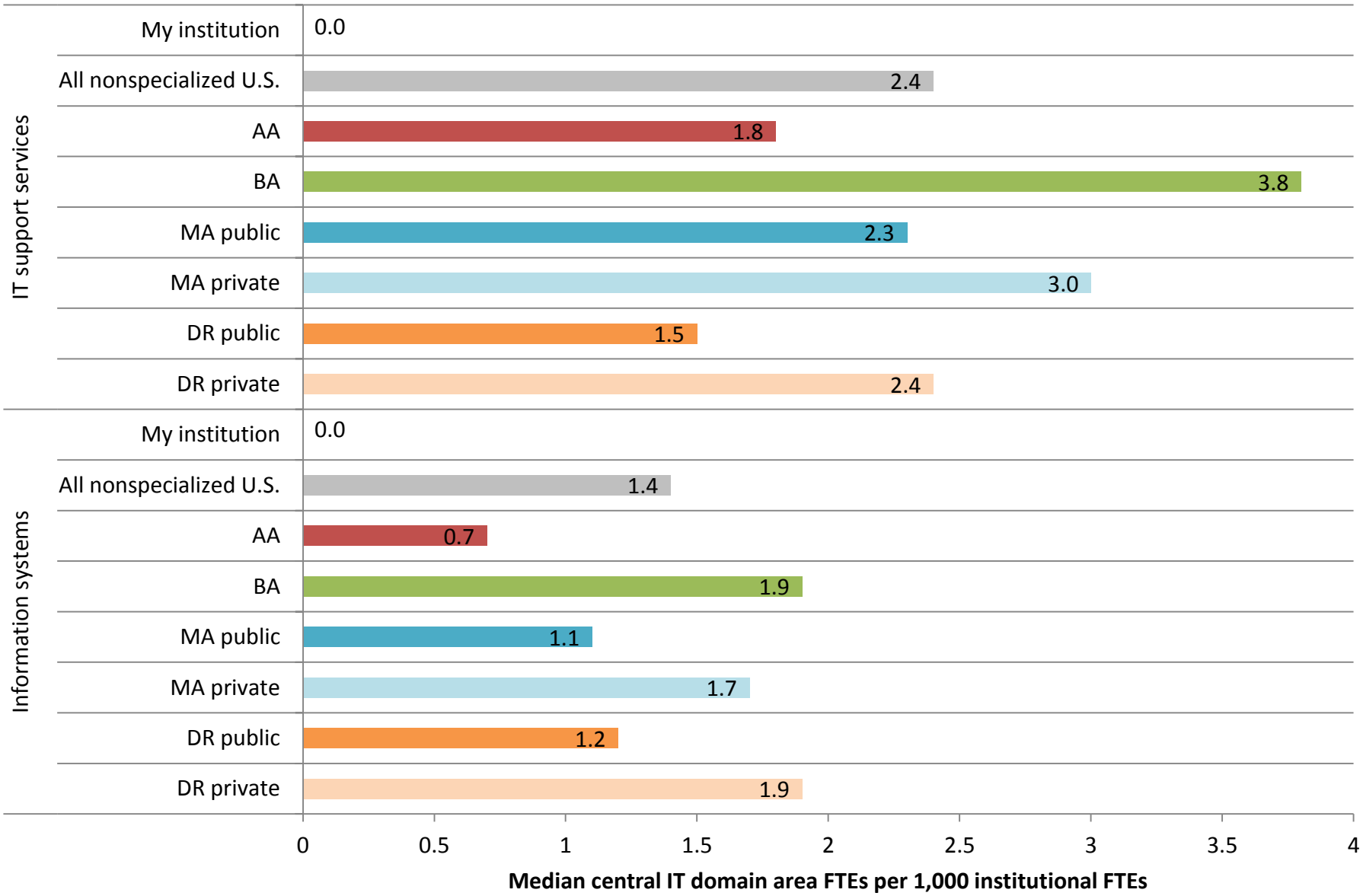
Student worker FTEs as a percentage of total central IT FTEs



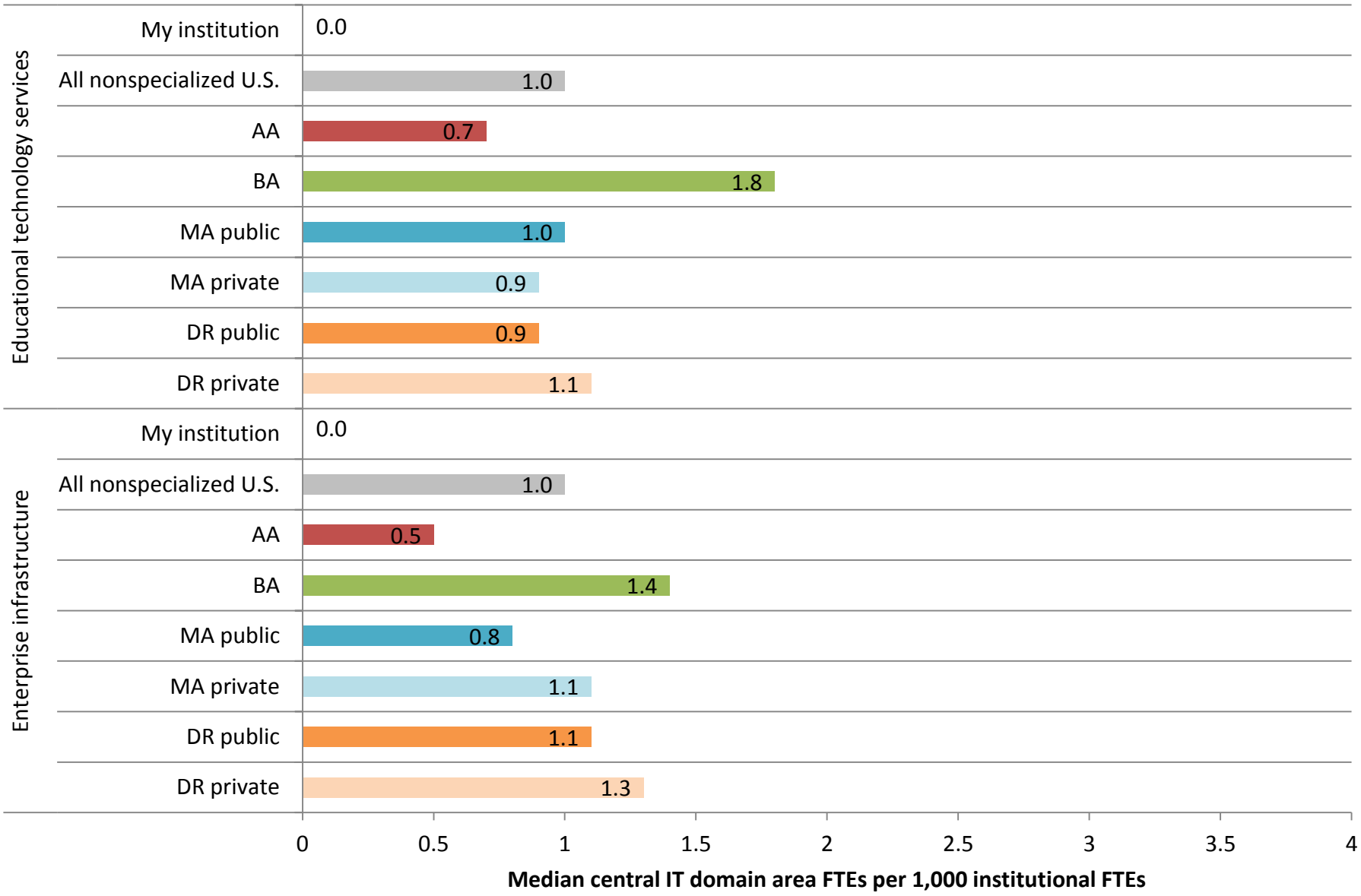
Student workers as a percentage of total central IT FTEs, six-year trend



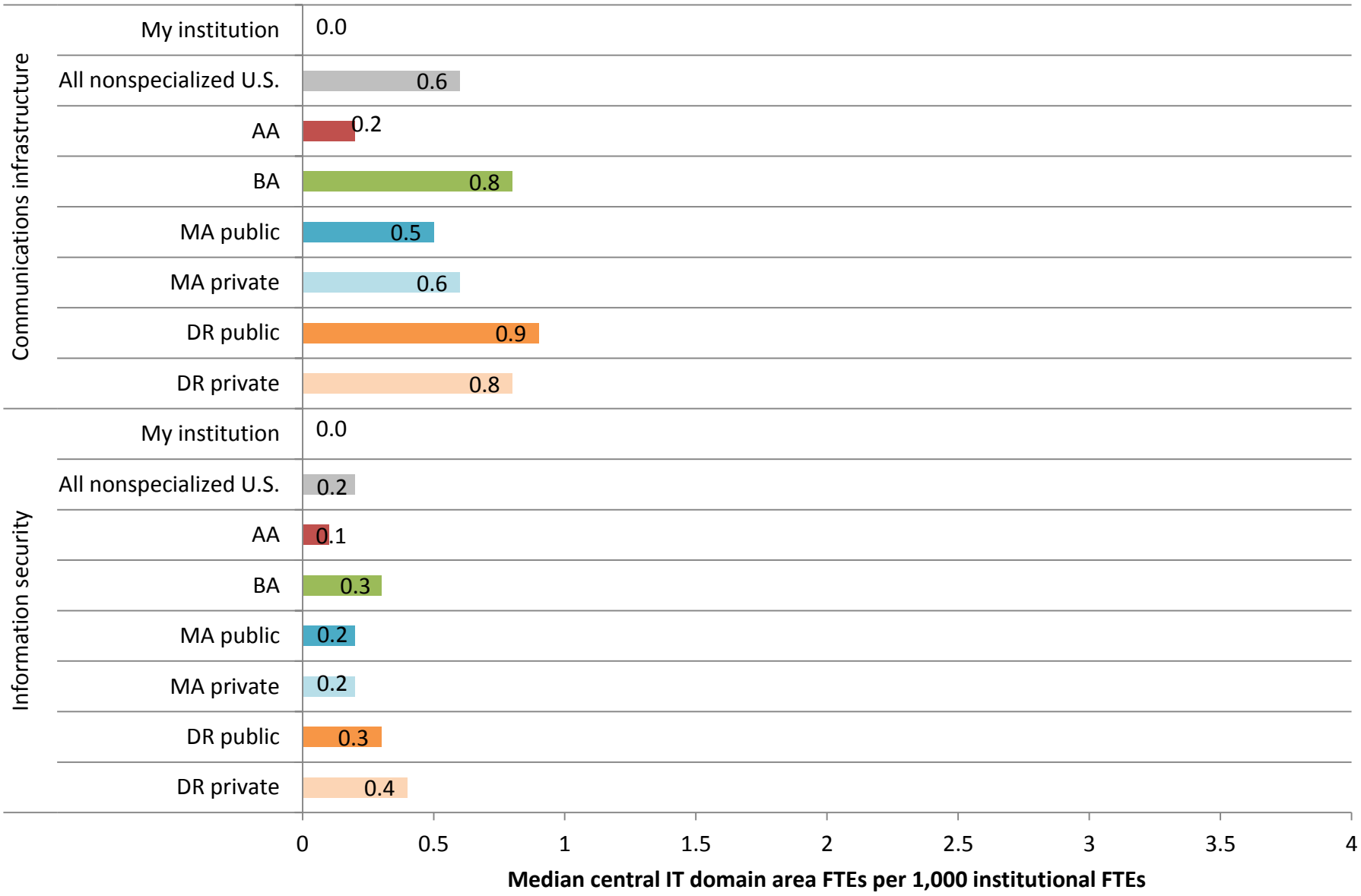
Central IT domain area FTEs per 1,000 institutional FTEs



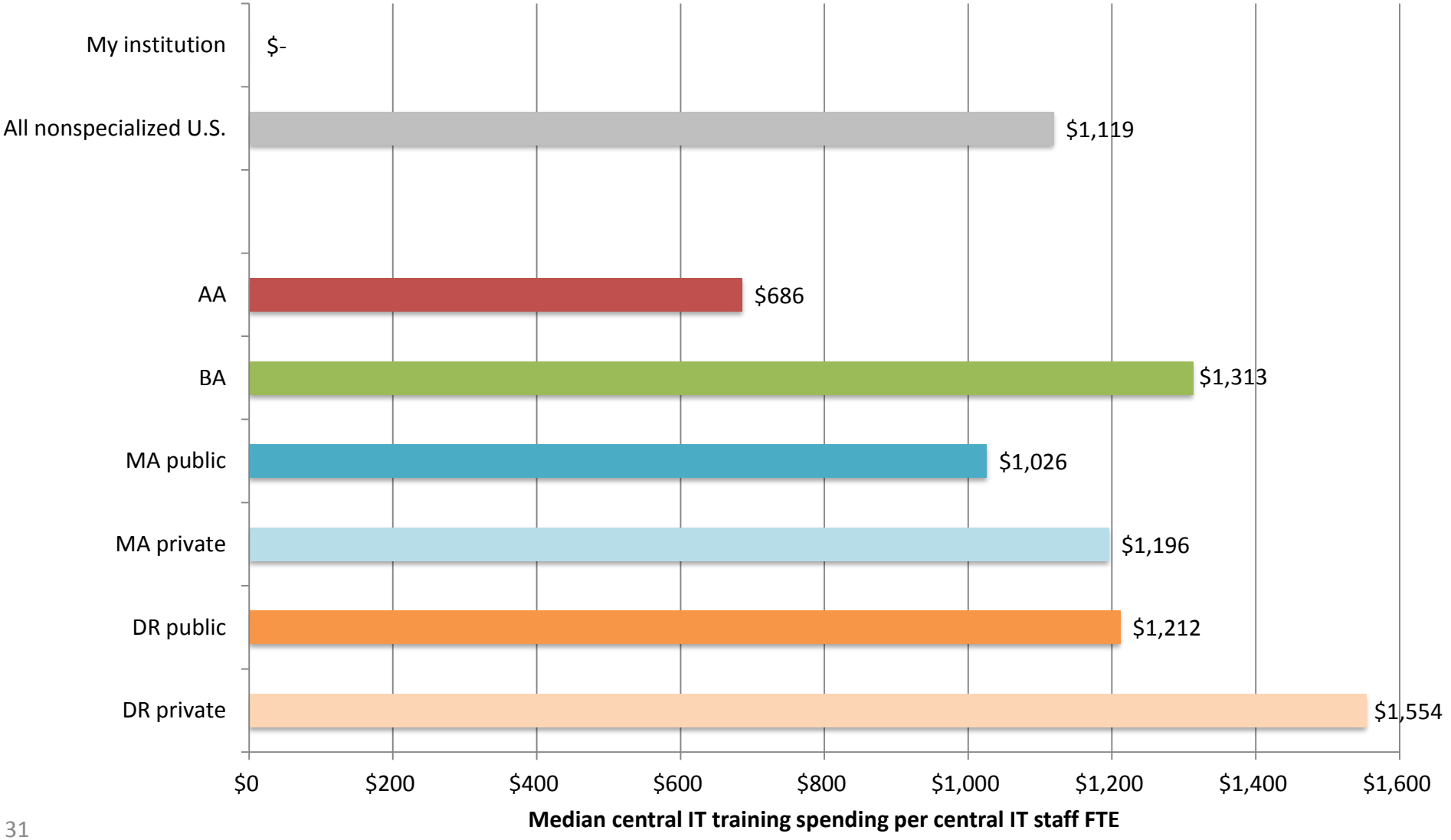
Central IT domain area FTEs per 1,000 institutional FTEs



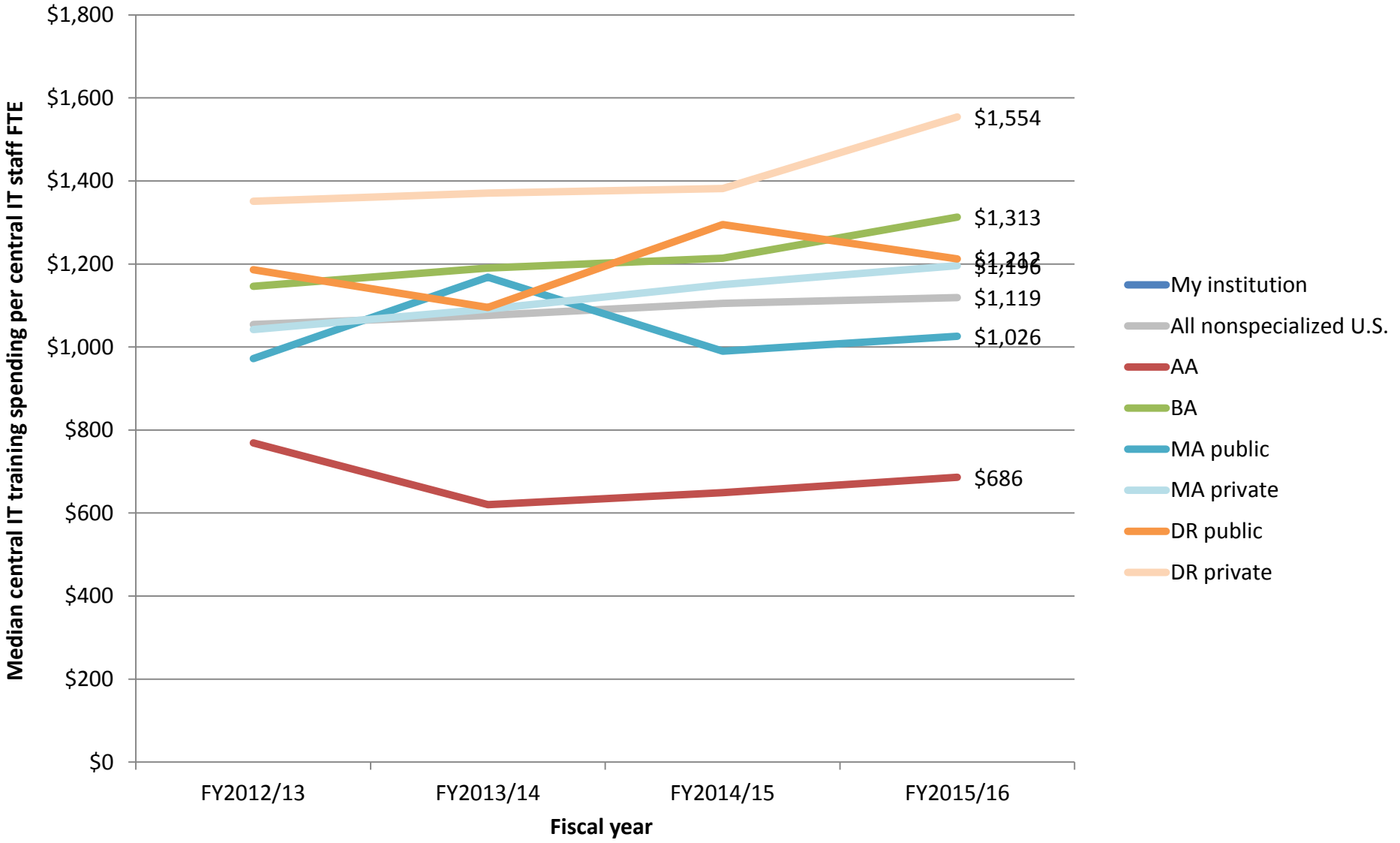
Central IT domain area FTEs per 1,000 institutional FTEs



Central IT Professional Development spending per central IT staff FTE



Central IT Professional Development spending per central IT staff FTE, four-year trend



IT Services

In a changing environment, it is important to know which services are in demand and which are fading in importance; which should stay local and which can be outsourced; and which must have mobile deployment or be accessible via the cloud. It's important to provide the right services in the most efficient manner. CDS has data that can help you understand how your peers are supporting users in mobile computing, online education, and cloud environments. CDS data on faculty support services can help you determine how to help your faculty optimize the use of technology in teaching and learning, and data (including vendor/product, deployment, and management strategy) on 50 different information systems can help you strategize for an enterprise architecture that is right for you.

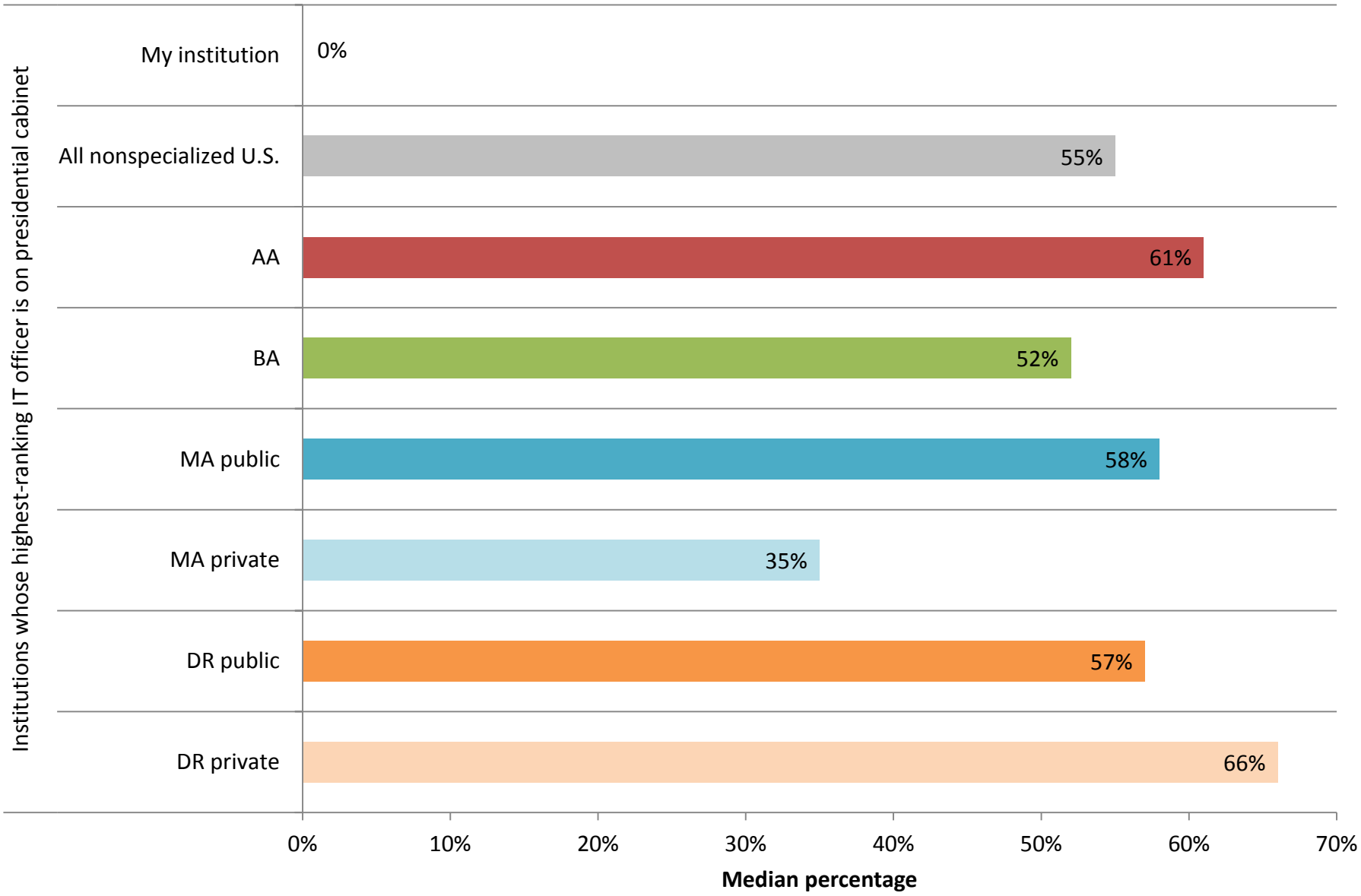
The metrics contained in this section can help you address the following questions:

- What services should I provide?
- How should I provide those services?
- How can I evaluate service efficiency or effectiveness?

IT Services: Benchmarks

IT Domain Area	Metric	Slide
IT Organization, Staffing, and Financing	Institutions whose highest-ranking IT officer is on presidential cabinet	35
Educational Technology Services	Most common teaching and learning support services	36
	Student FTEs per shared workstation provided by central IT	37
	Most commonly deployed e-learning technologies	38
	Most commonly deployed student success technologies	39
Information Security	Institutions that have conducted any sort of IT security risk assessment	40
	Institutions that have conducted an IT security risk assessment of cloud service or third-party providers	41
	Identity Management	42
	Most commonly achieved information security practices	43
Information Systems and Applications	Systems most commonly vendor managed (SaaS)	44
	Systems most likely to be replaced in the next three years	45

IT Organization, Staffing, and Financing: Highest-ranking IT officer is on presidential cabinet

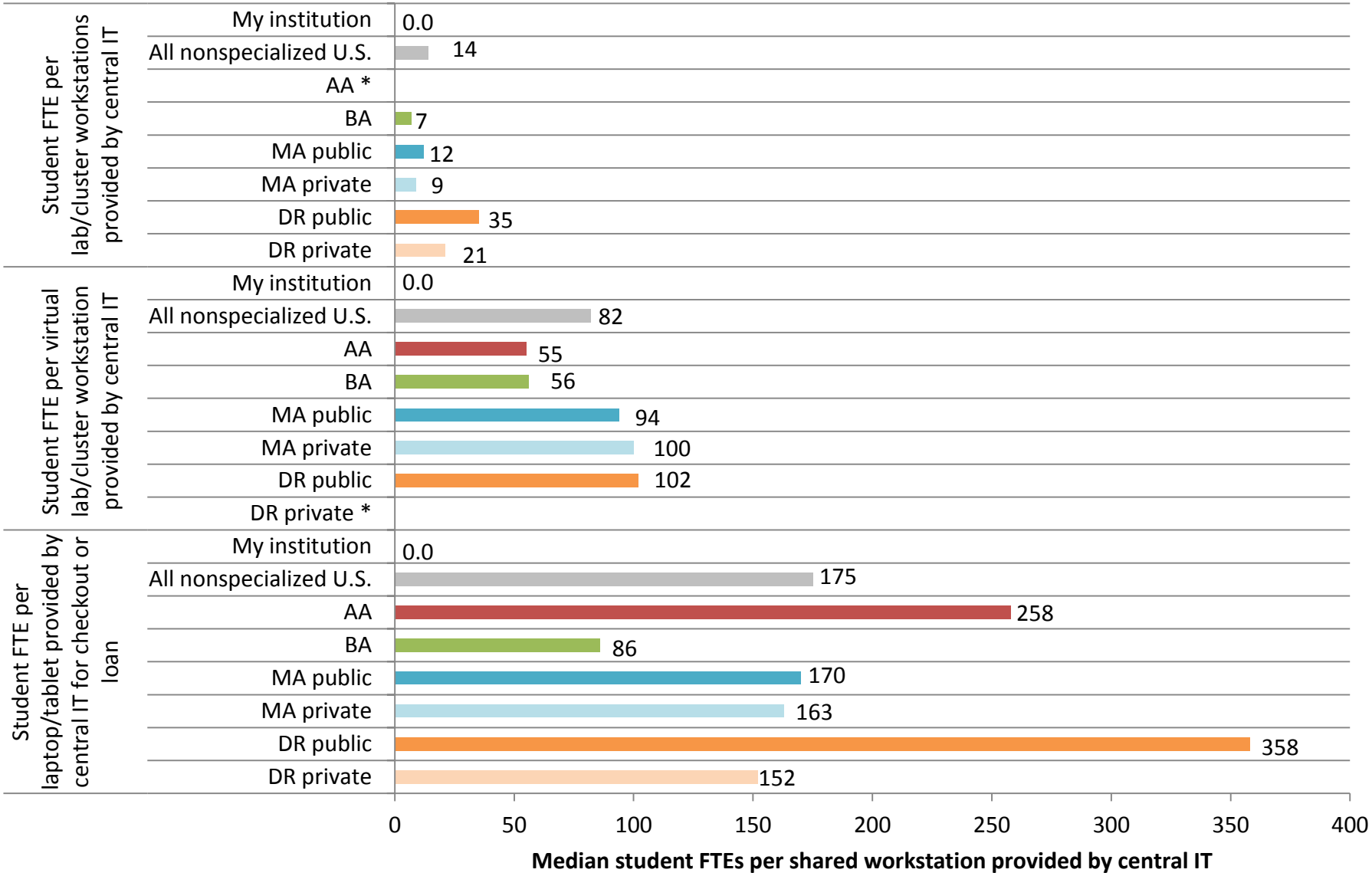


Educational Technology Services: Most common teaching and learning support services

	My institution	All nonspecialized U.S.	AA	BA	MA public	MA private	DR public	DR private
Classroom technology	✓ ✗	100%	100%	100%	100%	99%	100%	100%
Classroom technology support for faculty	✓ ✗	100%	100%	100%	100%	99%	100%	100%
Learning management training for faculty	✓ ✗	100%	100%	99%	100%	100%	100%	100%
Learning management support for faculty	✓ ✗	100%	100%	99%	100%	100%	100%	100%
Faculty individual training in use of educational technology	✓ ✗	99%	97%	99%	100%	100%	100%	100%
Technology-enhanced spaces (e.g., labs, technology-enabled collaborative spaces, etc.)	✓ ✗	99%	99%	99%	100%	97%	100%	100%

✓	My institution has this service.
✗	My institution does not have this service.

Educational Technology Services: Student FTE per shared workstation provided by central IT



** Sample sizes for lab/cluster workstations at AA institutions and virtual lab/cluster workstations provided by central IT at DR private institutions were too small to calculate an appropriate benchmark.*

Educational Technology Services: Most commonly deployed e-learning technologies

	My institution	All nonspecialized U.S.	AA	BA	MA public	MA private	DR public	DR private
Full function online learning delivery system	✓ ✗	91%	99%	68%	97%	93%	97%	94%
Student evaluation of teaching effectiveness	✓ ✗	91%	87%	87%	90%	92%	94%	98%
Collaboration tools for learning	✓ ✗	90%	86%	86%	94%	85%	93%	96%
Real-time web- or videoconferencing online learning environment	✓ ✗	87%	88%	69%	90%	85%	95%	98%
Plagiarism-detection system	✓ ✗	76%	71%	49%	88%	88%	81%	86%

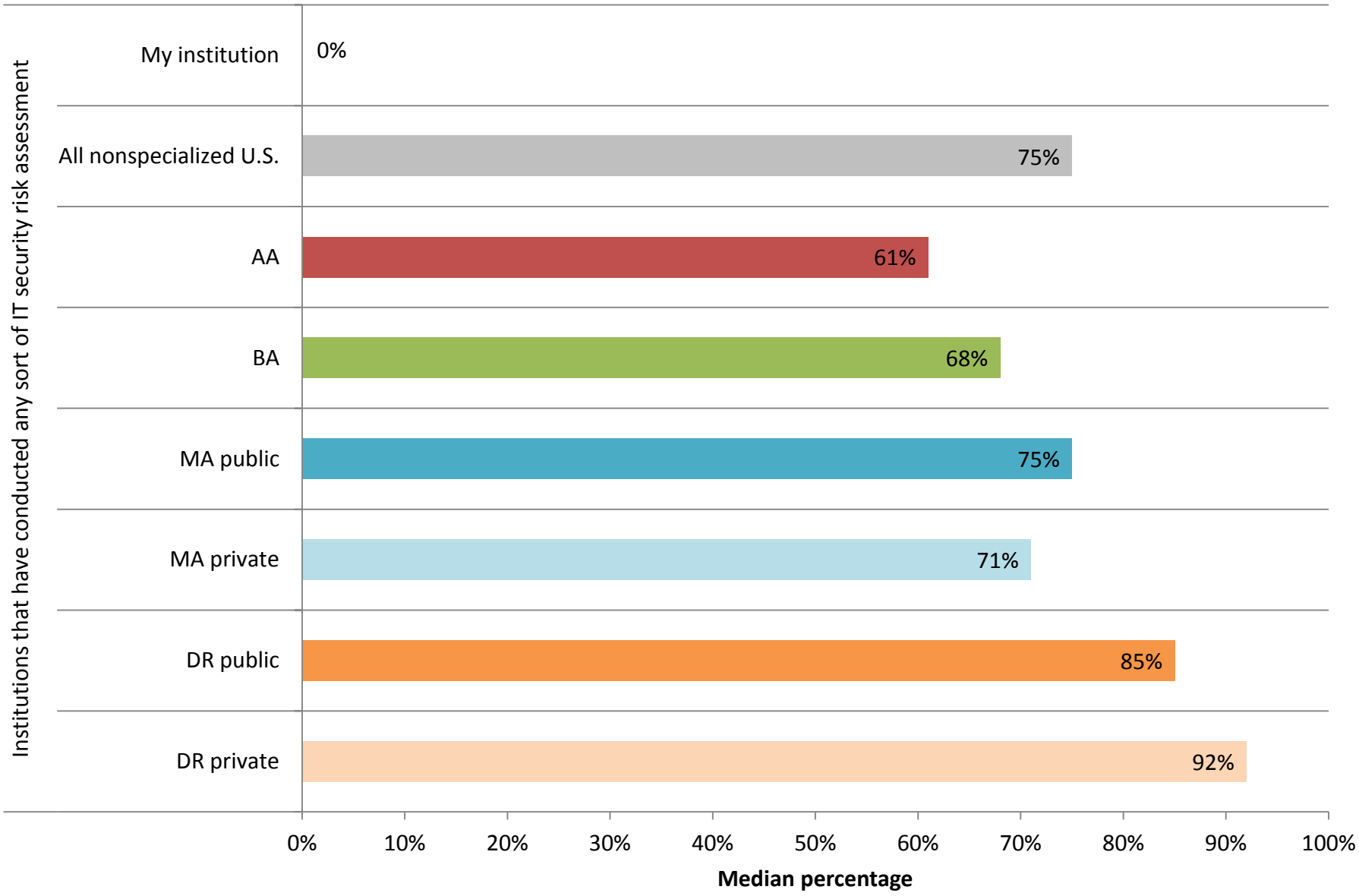
✓	My institution has this service.
✗	My institution does not have this service.

Educational Technology Services: Most commonly deployed student success technologies

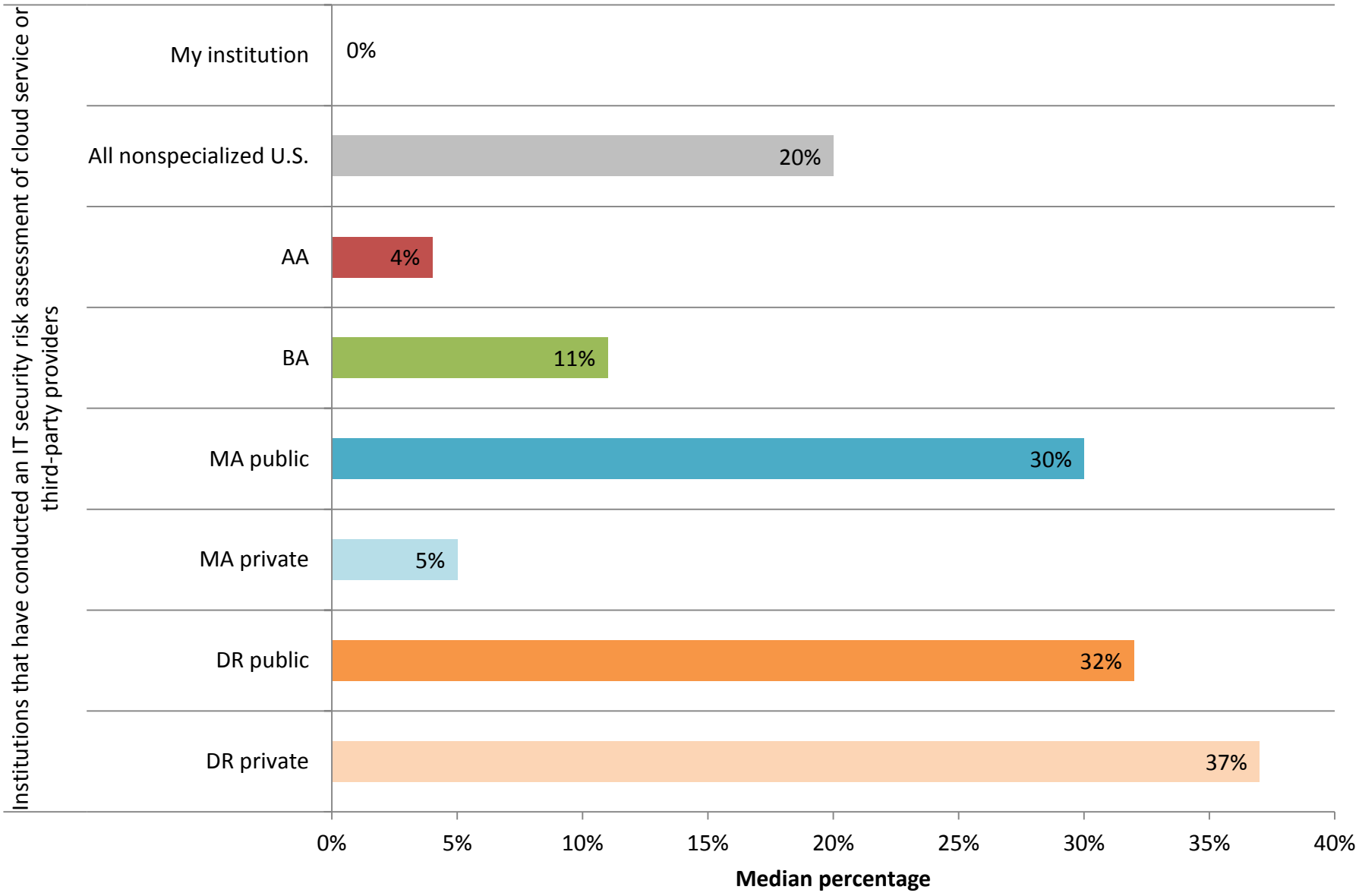
	My institution	All nonspecialized U.S.	AA	BA	MA public	MA private	DR public	DR private
Degree audit	✓ ✗	88%	74%	79%	93%	92%	95%	94%
Advising center management	✓ ✗	61%	63%	44%	67%	54%	75%	58%
Credit transfer/articulation system	✓ ✗	61%	56%	31%	71%	54%	83%	60%
Academic early-alert system	✓ ✗	59%	56%	49%	65%	66%	67%	38%
Advising case management system for student interaction tracking	✓ ✗	55%	52%	45%	58%	46%	68%	58%

✓	**My institution has this service.**
✗	**My institution does not have this service.**

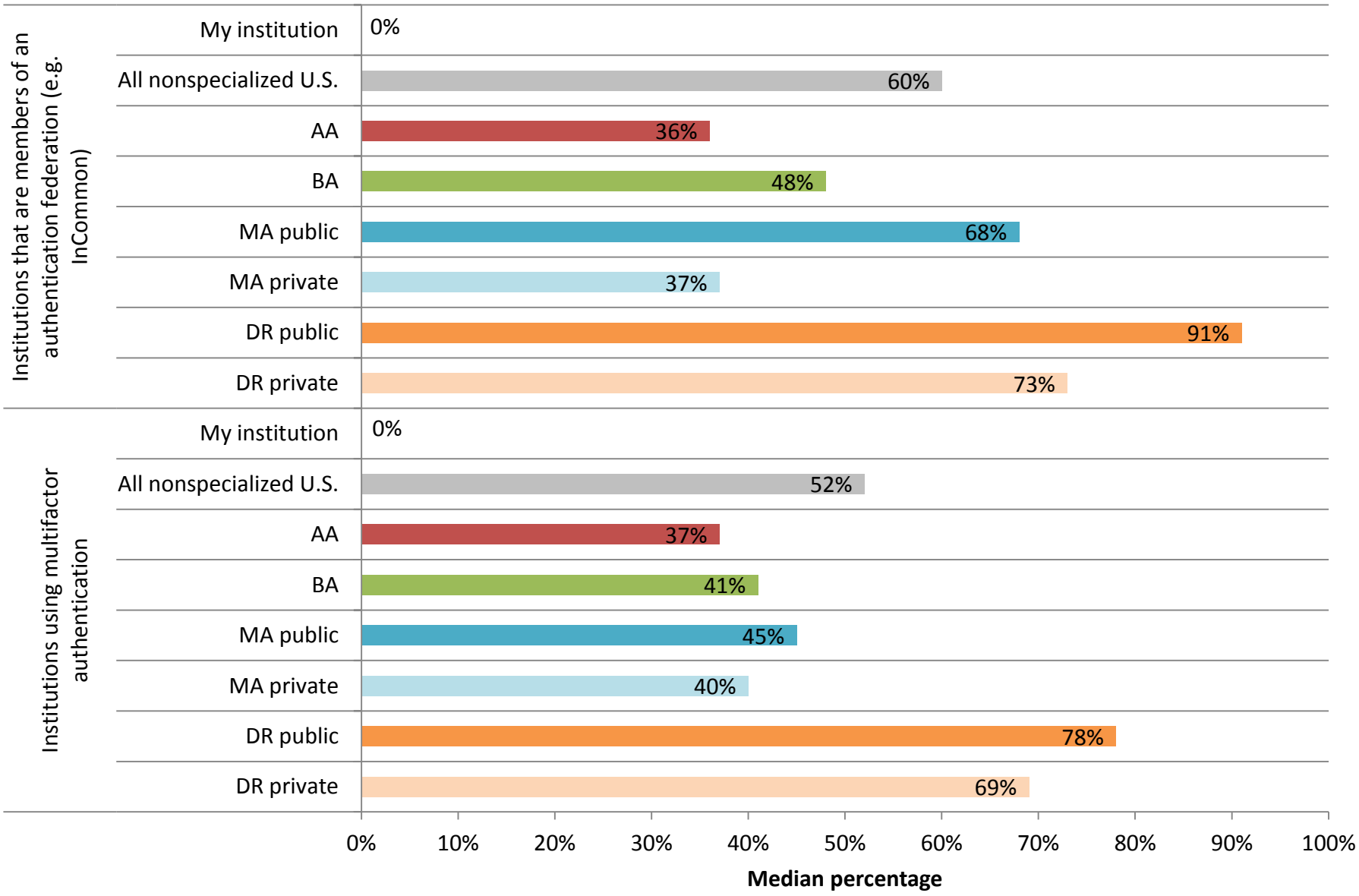
Information Security: Risk assessments



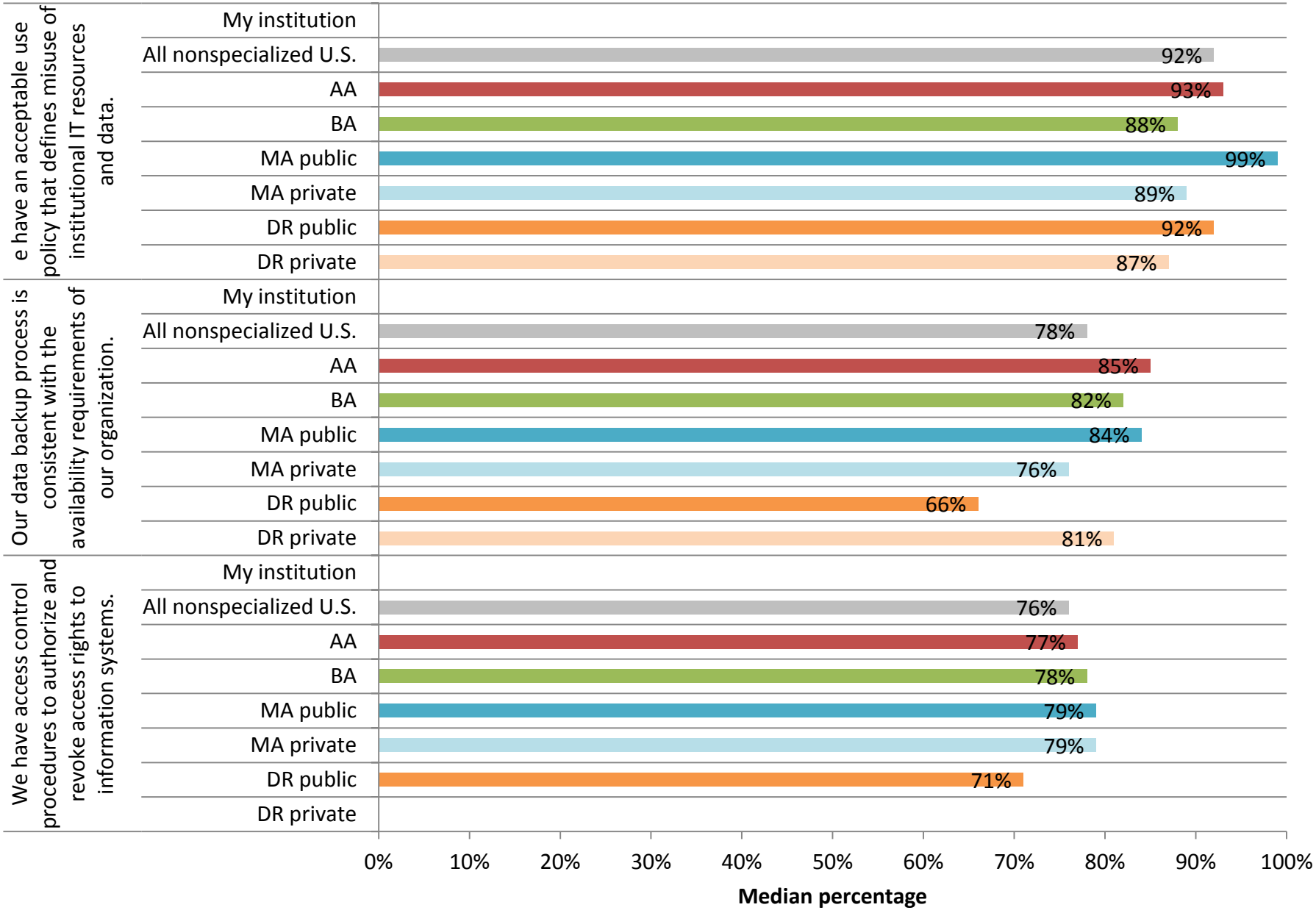
Information Security: Risk assessments of cloud services



Information Security: Identity Management



Information Security: Most commonly achieved information security practices



Information Systems and Applications: Systems most commonly vendor-managed (SaaS)

	My institution	All nonspecialized U.S.	AA	BA	MA public	MA private	DR public	DR private
E-mail: student	✓ ✗	68%	64%	66%	67%	65%	70%	77%
E-mail: faculty/staff	✓ ✗	47%	41%	53%	44%	46%	46%	60%
Learning management	✓ ✗	39%	34%	28%	41%	46%	44%	46%
Customer relationship management (CRM)	✓ ✗	35%	19%	43%	36%	35%	35%	46%
Library	✓ ✗	30%	37%	31%	27%	44%	19%	31%
IT service desk management	✓ ✗	27%	26%	18%	23%	24%	36%	42%
Admissions: undergraduate	✓ ✗	25%	3%	41%	22%	24%	26%	38%
Facilities management	✓ ✗	24%	24%	28%	25%	24%	18%	29%

✓	My institution uses SaaS for this system.
✗	My institution does not use SaaS for this system.

Information Systems and Applications: Systems most likely to be replaced in the next three years

	My institution	All nonspecialized U.S.	AA	BA	MA public	MA private	DR public	DR private
IT service desk management	✓ ✗	24%	20%	21%	28%	30%	21%	31%
Customer relationship management (CRM)	✓ ✗	24%	15%	17%	25%	29%	31%	18%
Business intelligence reporting	✓ ✗	19%	13%	12%	22%	26%	20%	27%
Human resources information	✓ ✗	19%	12%	20%	18%	8%	28%	27%
Admissions: undergraduate	✓ ✗	18%	15%	23%	16%	13%	19%	25%
E-mail: faculty/staff	✓ ✗	18%	15%	15%	20%	17%	21%	15%

✓	**My institution has recently replaced this system or plans to replace in the next three years.**
✗	**My institution has not recently replaced this system and has no plans to replace in the next three years.**

Methodology

Methodology, 1 of 3

EDUCAUSE invites more than 3,500 institutions to contribute their data to the Core Data Service each year. Invitees include EDUCAUSE member institutions plus nonmember institutions with a record of interaction with EDUCAUSE. Any nonmember institution may request to be added to the CDS sample.

Response by Year

The CDS 2016 survey collected data about FY2015/16 and was conducted from July 2016 to December 2016. This was the 14th CDS survey. Since 2002, survey participation has ranged from 641 to 1,023 institutions.

CDS Survey	Year of Data Collection	Fiscal Year Data	Number of Participating Institutions
CDS 2002	2003	FY2001/02–FY2002/03	641
CDS 2003	2004	FY2002/03–FY2003/04	840
CDS 2004	2005	FY2003/04–FY2004/05	921
CDS 2005	2006	FY2004/05–FY2005/06	957
CDS 2006	2007	FY2005/06–FY2006/07	962
CDS 2007	2008	FY2006/07–FY2007/08	1,023
CDS 2008	2009	FY2007/08–FY2008/09	954
CDS 2009	2010	FY2008/09–FY2009/10	917
CDS 2011	2011	FY2009/10–FY2010/11	826
CDS 2012	2012	FY2010/11–FY2011/12	787
CDS 2013	2013	FY2012/13	798
CDS 2014	2014	FY2013/14	828
CDS 2015	2015	FY2014/15	813
CDS 2016	2016	FY2015/16	784

Methodology, 2 of 3

Response by Carnegie Classification

As in prior years, survey response across Carnegie Classification was highly variable in CDS 2016. Due to differences in population sizes across institutional types, the number of participating institutions for a particular type of institution may be deceiving. For example, only 58 private doctoral institutions participated in CDS 2016; however, this accounts for 53% of private doctoral institutions that were invited to complete CDS 2016. In contrast, 129 community colleges participated in CDS 2016, but this accounts for only 12% of community colleges that were invited to participate in CDS 2016. International participation spanned 18 countries.

Carnegie Classification	Participating Institutions	Eligible Institutions	Response Rate
AA	129	1090	12%
BA	145	567	26%
MA public	125	263	48%
MA private	96	358	27%
DR public	127	174	73%
DR private	58	109	53%
Other U.S.	47	576	8%
International	57	371	15%

Methodology, 3 of 3

Response by Module

The 2016 CDS survey is divided into five modules. CDS survey participation status is based on the completion of the required IT Organization, Staffing, and Financing. The remaining four modules in the survey are optional and cover details about service delivery in the IT domain areas. Some of the optional modules ask about services run at most institutions (e.g., educational technology services), while others ask about services run at some institutions (e.g., information security); thus, response to optional modules varies.

CDS 2016 Module	Participating Institutions
Organization, Staffing, and Financing	
Organization, Staffing, and Financing (full version)	684
Organization, Staffing, and Financing (Quick Start)	100
Educational Technology Services	612
Information Security	607
Information Systems and Applications	575
Capability & Technology Deployment (new in 2016)	484