



What Does a Person Have to Do to Use a Computer Here?

By: Gillian (Jill) D. Ellern & Robin Hitch

Abstract

This presentation talks about how the presenters got started looking into authentication in academic libraries in NC and how the presenters got interested in this topic. It covers the methodology of their research and some of their findings, with charts and graphs of each question.

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Archived version from NC DOCKS available at: <http://libres.uncg.edu/ir/wcu/listing.aspx?styp=ti&id=37526>.

What Does a Person Have To Do To Use a Computer Here?



**NCLA 59TH BIENNIAL CONFERENCE
HICKORY, NC**

**OCTOBER 7, 2011
10:30AM-12:00**

Jill Ellern, Robin Hitch and Shandon Bates (in absentia)

Outline of Our Talk



- Our story and how we got interested in this topic
- Methodology of our research
- Some of our findings so far
 - Charts and graphs of each question
 - Depending upon how much time we have...
- Future directions in our research

What is Authentication?



An Interest in Authentication Issues



- 2009 WCU mandated a new campus wide Pay for Print project
 - Before this, the library and IT had a smaller print project
 - IT wanted to change the way the library public area PCs were configured
 - ✦ Requiring machines to be logged into the domain
 - ✦ Question arose about the machine logins
 - Library didn't want to be forced to do this

Library's Story: Reasons NOT to Authenticate



- **Ease of setup and security issues**
 - Library IT were not domain administrators
 - More complex issues with imaging PCs
 - Domain accounts have access rights issues
 - System staff seemed to address and find virus problems more quickly than IT did
- **Ease for patrons using PCs**
- **Ethics**
 - Privacy and inquiry issues
 - Freedom of access

A Meeting with IT



- **Want to require all users to log in on all PCs**
 - Make all users accountable
 - ✦ Including the public
 - ✦ Just like the labs, classrooms and staff
 - Worried about regulations and auditors
 - ✦ CALEA
- **Didn't like how the library managed the PCs**
 - Not upgraded often enough
 - ✦ Despite using a security system software (Deep Freeze)
 - ✦ Despite our virus security software

IT's Story: Reasons TO Authenticate



- **Security issues/investigations in other areas**
 - An employees use of unauthenticated PC in the University Center led to Campus and Jackson County Sheriffs office investigation
- **Increased overall security utilizing AD Group Policy**
 - Allows for more granular security policies and faster rollout of updates, as no re-imaging is required
 - Deep frozen machines repeatedly infected with malware during large outbreaks
- **Protection of University Assets**
 - Requiring authenticated access and being able to track users increases security by insuring adherence to campus policies

Researching Library Authentication Practices



- Looked first at what other University of NC system libraries did
- Didn't find much that I could use to help support the library position
 - In preserving library ethics
 - ✦ freedom of inquiry and privacy
 - ✦ anonymous access to library resources
 - Arguing against IT's conservative protection
 - ✦ Network security concerns to protect against unauthorized access, abuse, disruption, tampering, and failure
 - ✦ Responsibility to follow appropriate laws and regulations

The Research Team



- Jill Ellern, Systems Librarian, Hunter Library
- Robin Hitch, Computer Tech, Hunter Library
- Shandon Bates, Director of Systems and Operations, IT

Our Thoughts on the Subject



- **Why libraries**
 - need to collect user data or limit access or track use?
 - not want to collect user data, or limit access, track use?
- **Why IT**
 - might need to collect user data or limit access or track use?
 - not want to collect user data or limit access or track use?

Methodology



- Used Qualtrics survey system
 - Online web product that sends email with link
- Tested survey with the UNC system libraries
 - Oct – Dec 2010
- Sent surveys to the rest of the NC academic libraries
 - Dec 2010
- Followed up with librarians via phone call and email
 - Jan-March 2011
 - 99% response rate (113 out of 114)
 - One private college opted out
- Library visits as a “Secret Shopper” /Guest User
 - Sept 2011

Data Collection and Processing



- Setup the questions
- Emailed our letter and link to appropriate person at each library
- Followed up to make sure everyone received it
- Downloaded the data into a spreadsheet
- Reviewed, normalized data
- Called librarians with questions about their responses
- Began the evaluation of the data
 - In the midst of evaluating responses
 - Boning up on statistical principles and tools

About the Questions asked



- 36 different questions
 - 7 different areas of inquiry
 - ✦ Variety of pull down lists, check boxes, and fill in blanks
 - 7 branches or skip logic in survey
 - ✦ For example, depending on the answer given, the survey skipped sections or asked for more information
- Snap shot in time
 - Moving target, ever changing

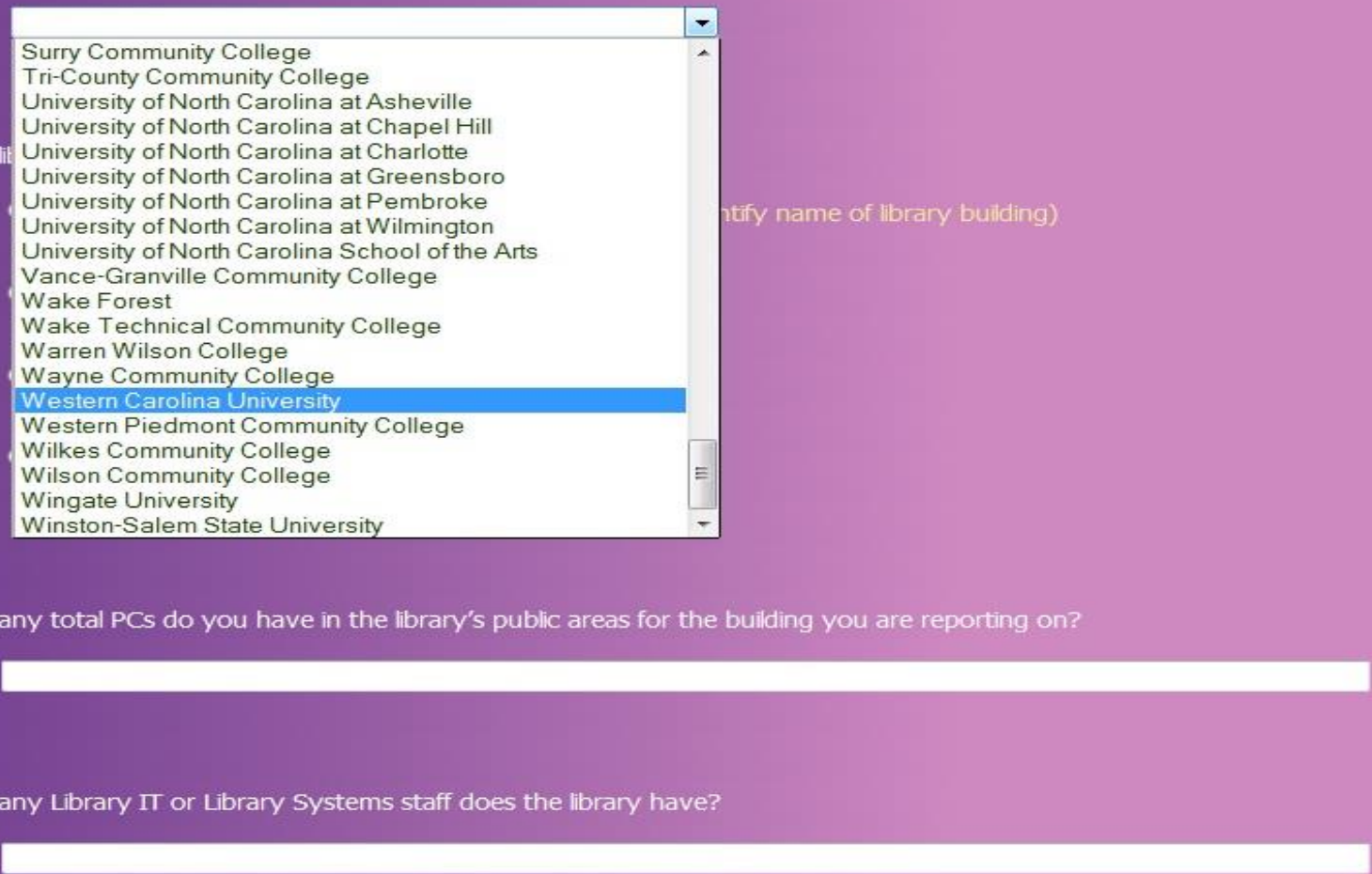
Authentication of PCs in the library public area

Thank you for agreeing to participate in this survey about user authentication on PCs in your public area.

What we mean by authentication is any means of restricting the use of a PC to a particular group or individual by some method. Examples of authentication can take the form of manual sign-in sheets, individual PC sign-in or scheduling software, centralized authentication or password methodologies, or preset authorization username password.

Select the college or university you represent:

Which library building do you represent (identify name of library building)



Surry Community College
Tri-County Community College
University of North Carolina at Asheville
University of North Carolina at Chapel Hill
University of North Carolina at Charlotte
University of North Carolina at Greensboro
University of North Carolina at Pembroke
University of North Carolina at Wilmington
University of North Carolina School of the Arts
Vance-Granville Community College
Wake Forest
Wake Technical Community College
Warren Wilson College
Wayne Community College
Western Carolina University
Western Piedmont Community College
Wilkes Community College
Wilson Community College
Wingate University
Winston-Salem State University

How many total PCs do you have in the library's public areas for the building you are reporting on?

How many Library IT or Library Systems staff does the library have?

The 7 Areas of Inquiry



- Descriptive
- Authentication
- Student only PCs
- Guest/Public PCs
- Wireless access
- Incidents
- Logs

Broad Themes of Inquiry



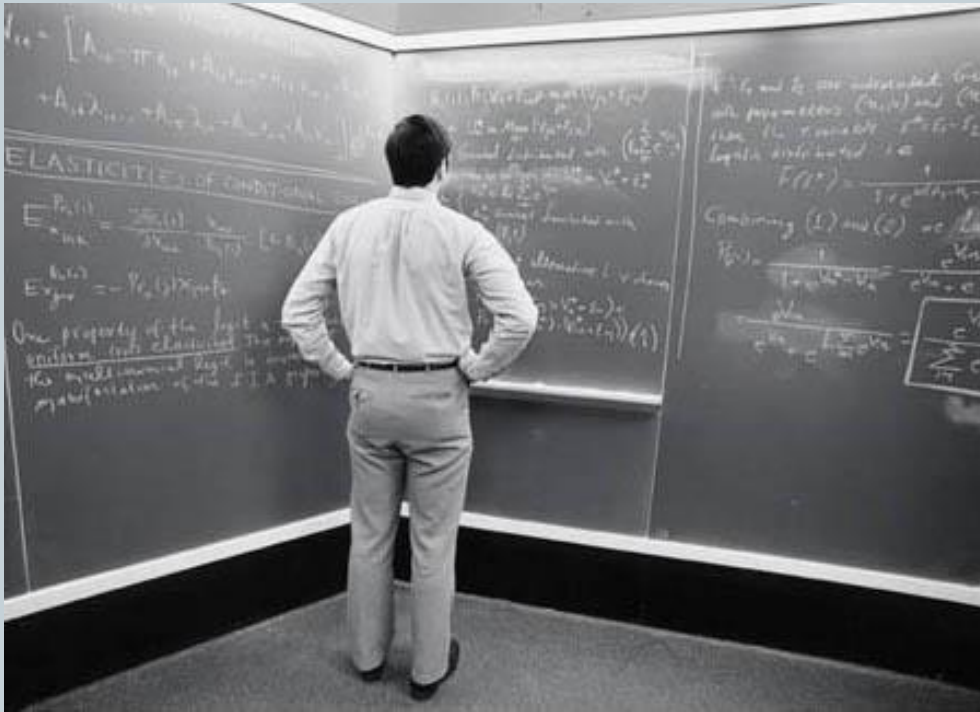
- Figure out if and why libraries were authenticating
- Factors that contributed to authenticating
 - i.e. were they forced to by someone else?
- Discrepancies in policies
 - i.e. between wired and wireless
 - The logging of book use vs. Internet use
- How libraries deal with servicing the public
 - ✦ Student Only vs. Guest/Public Use
 - ✦ Security vs. Open Access

What We Were Expecting to Find



- IT departments used post 9/11 factors, law interpretations, and fear of audits to force libraries to authenticate
- When IT controls the setup of the PCs, then there would be authentication required
- Factors such as population, enrollment, book volume, and others played a role in requiring libraries to authenticate

Some of Our Findings So Far

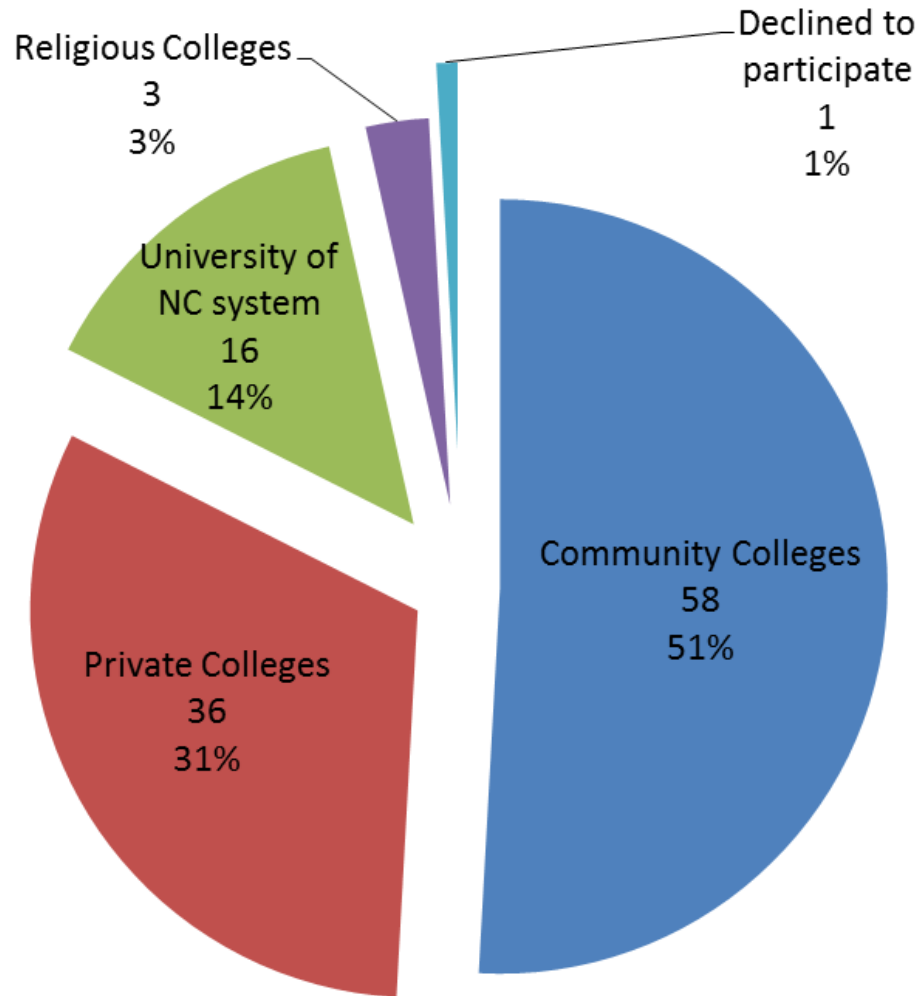


General Descriptive Results

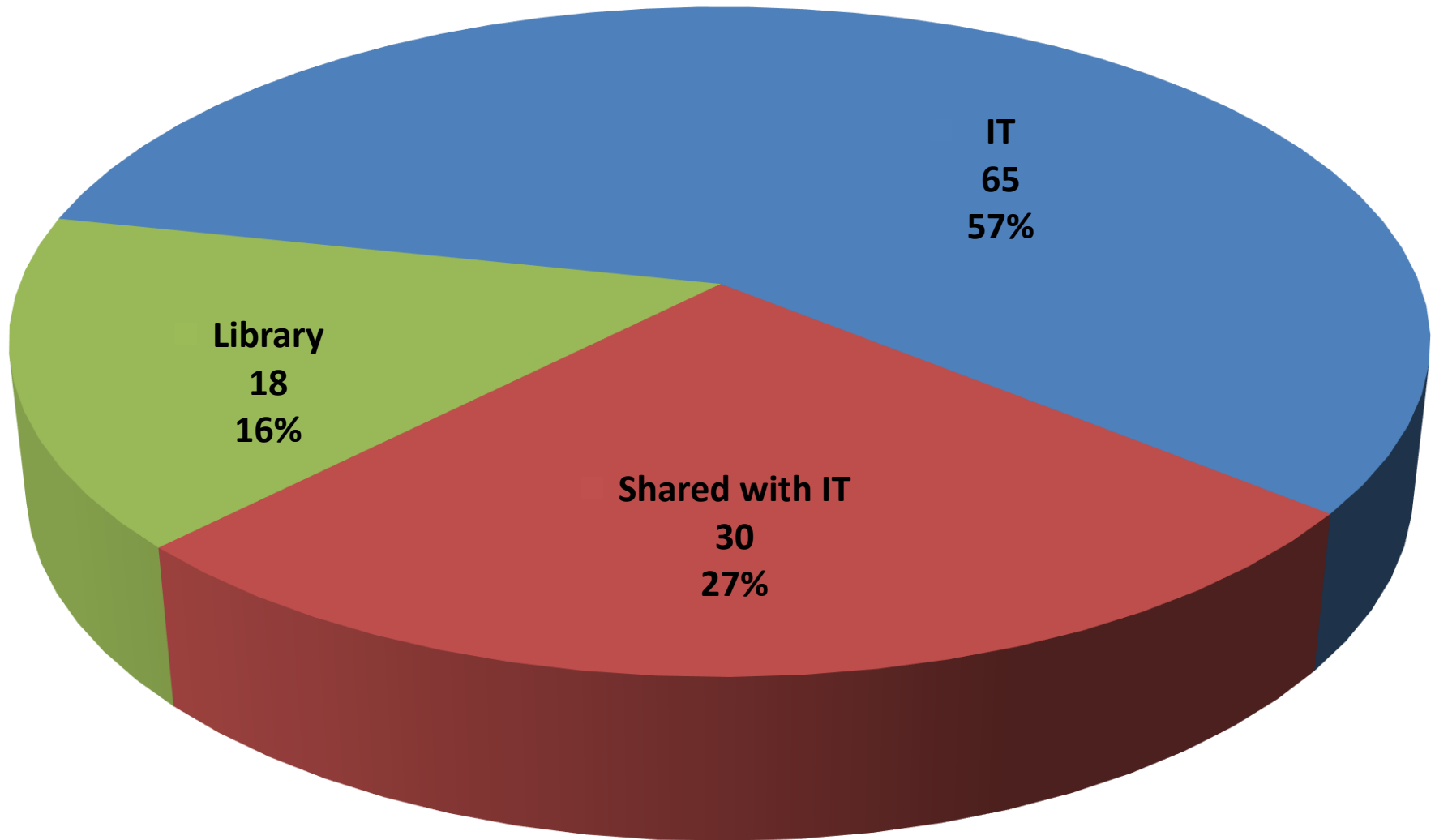


Pictures of OPAC area

Academic libraries of NC (114) in this study

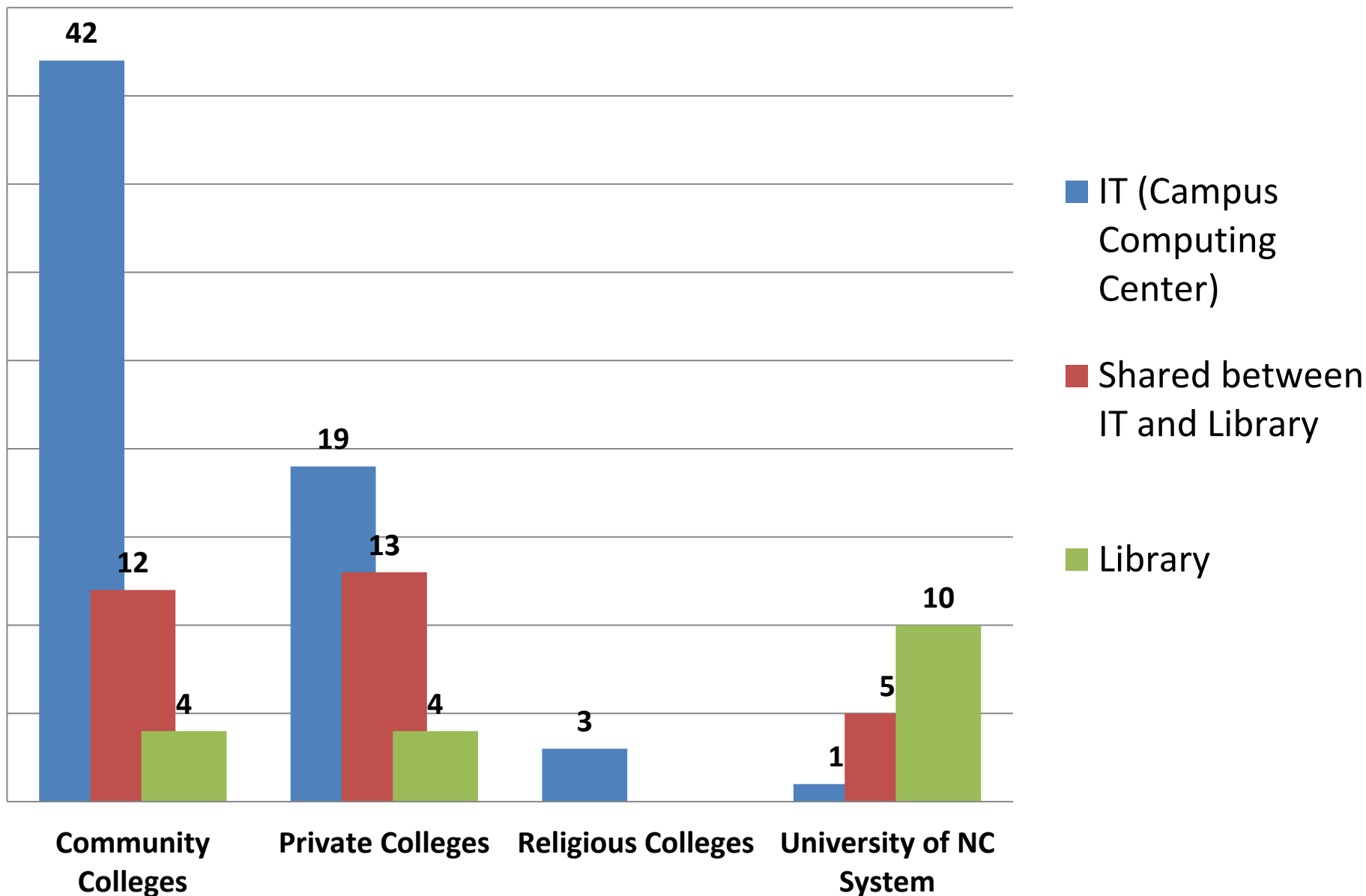


Who Controls the Setup of the PCs in Public Area? (all 113 Libraries)



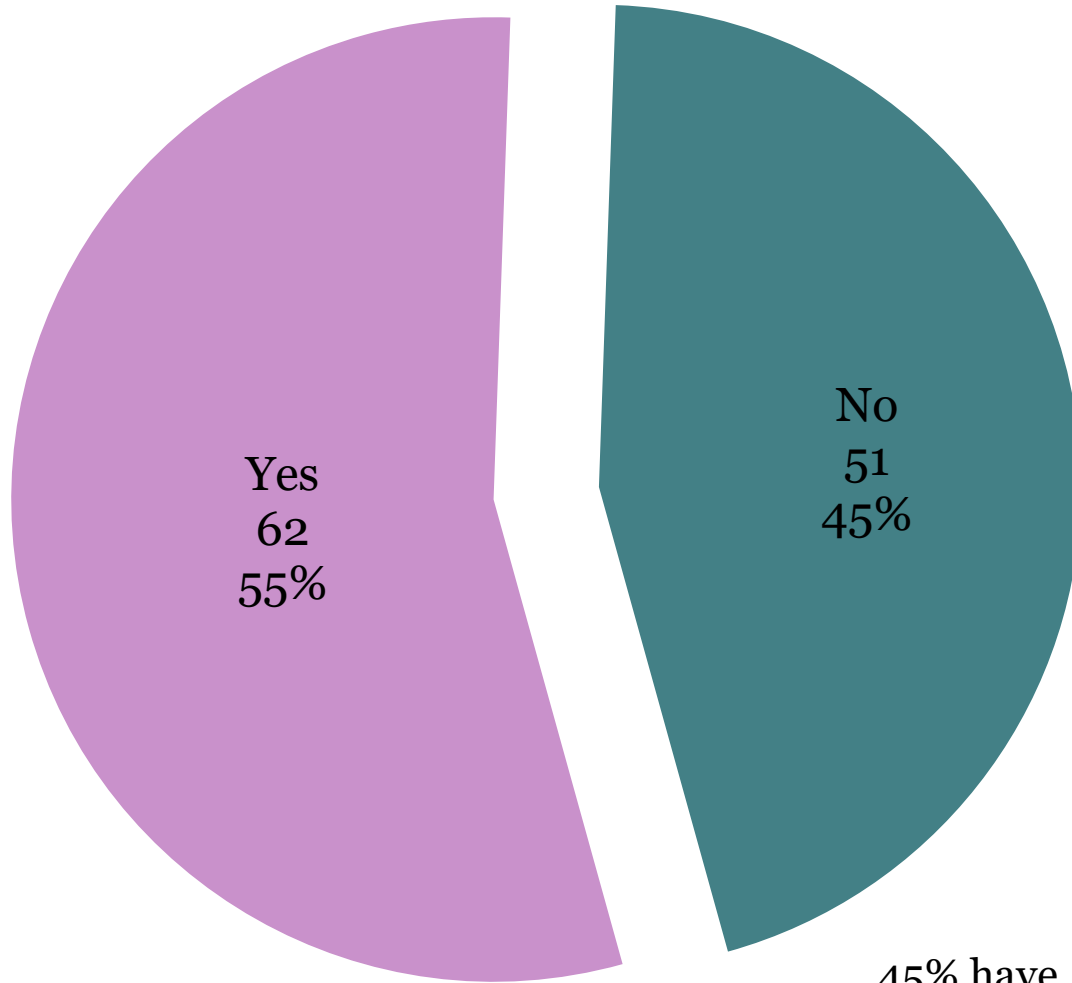
Who Controls the Setup of the PCs in Public Area

(by Type of Institution)



Different types of PCs in Your Library?

(all 113 Libraries)



45% have All PCs the same

Different types of PC Setups in Public Area

(all 113 libraries)

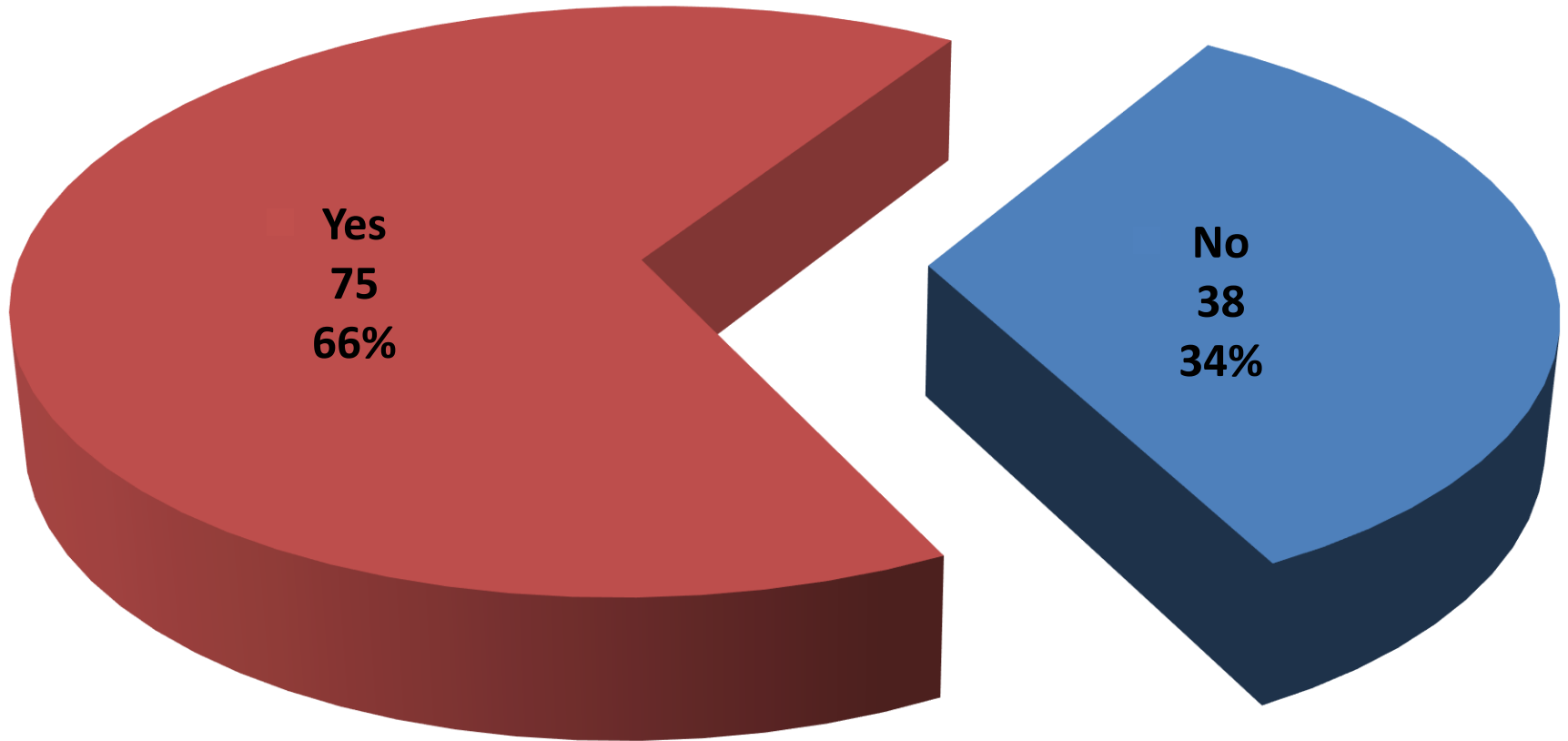
	Number	Percentage of Total
Some have specialized equipment attached (like scanners, microfiche readers, etc)	38	34%
Some have different types of software (like Browser Only)	37	33%
Some have printing limitations	12	11%
Some have time or scheduling limitations	11	10%
Some control, limit or block web sites that can be accessed	8	7%
Some control, limit or block access to library resources (such as databases or other subscription based services)	6	5%
ADA or large screen	2	2%

Authentication in the Public Area PCs



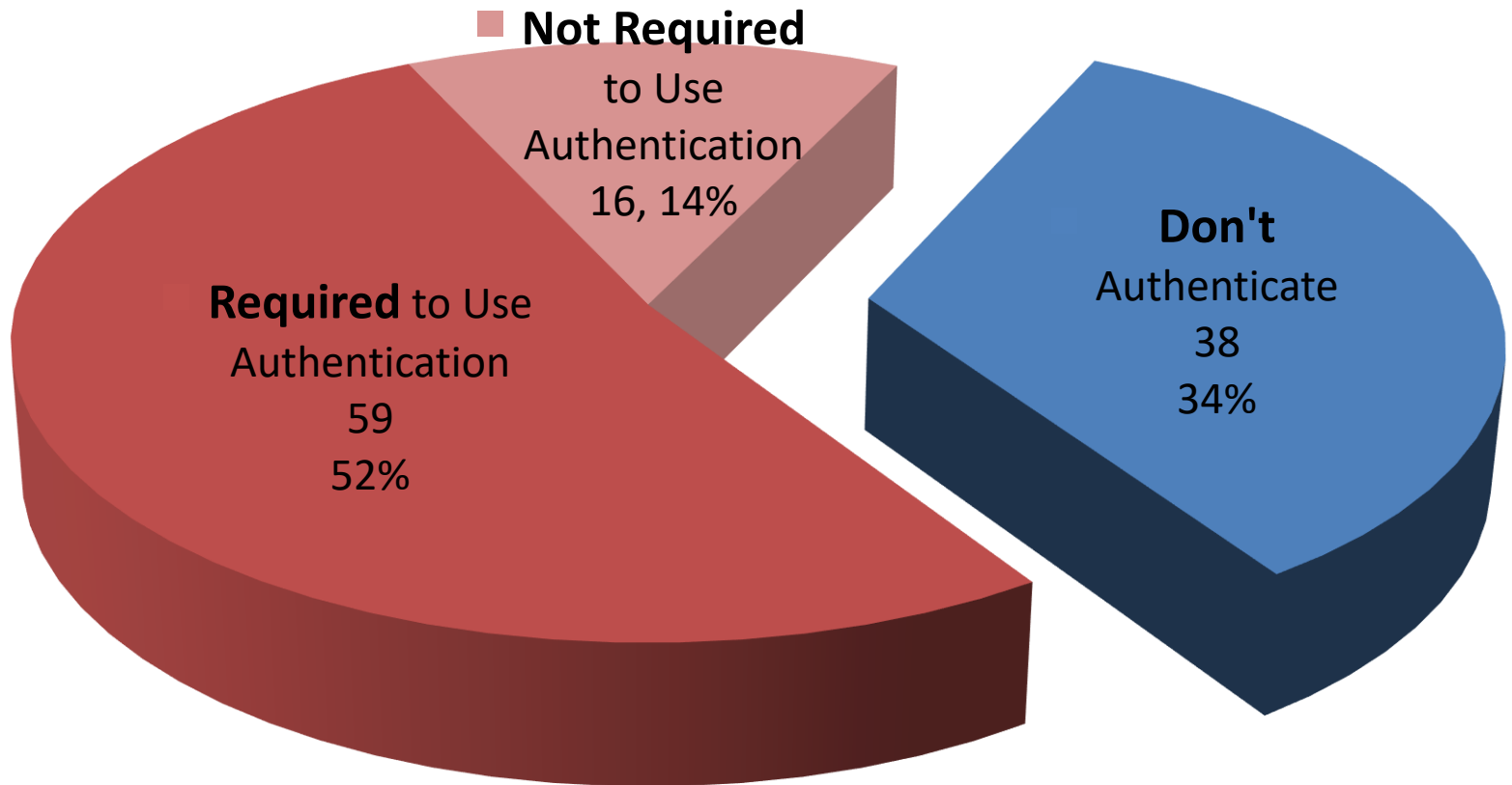
Authentication Used on any PCs in Public Area

(all 113 libraries)



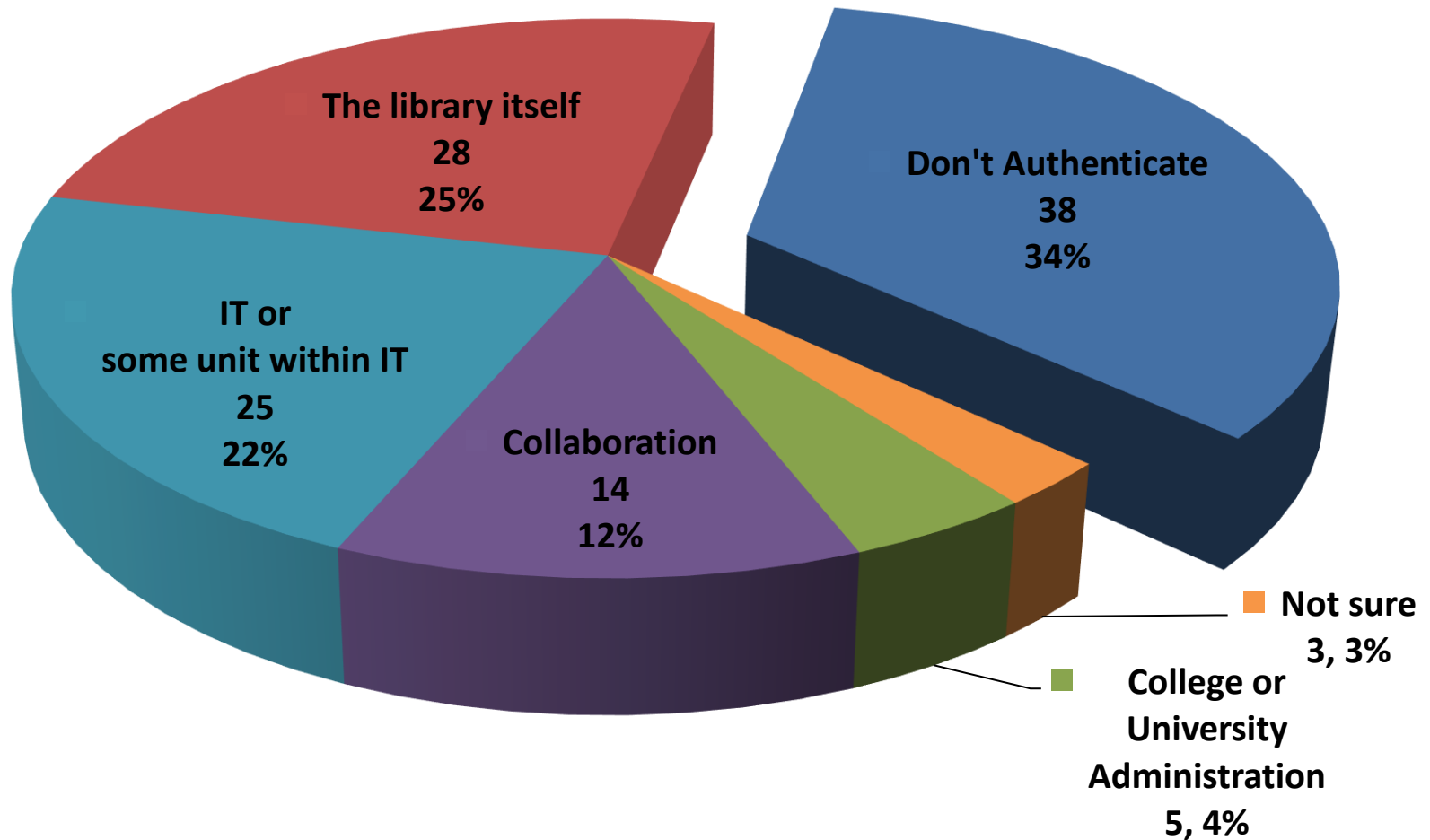
Authentication Used on any PCs in Public Area

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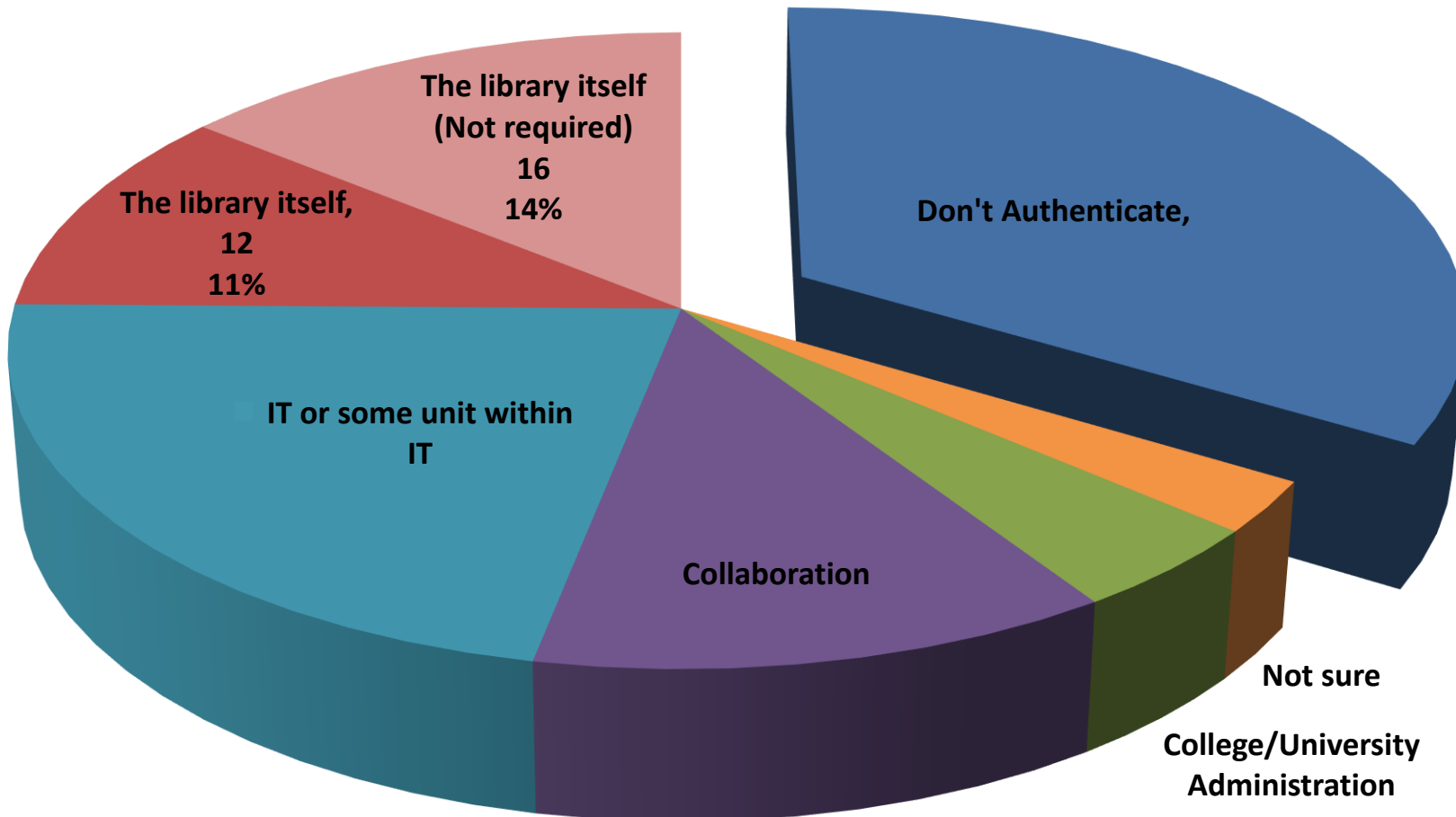


What Organization or Group Required or Mandated Authentication?

(all 113 Libraries)



What Organization or Group Required or Mandated Authentication? (all 113 Libraries)



Top Reasons Why Authentication is Used or What Lead to Its Use to Control

(75 Authenticating Libraries)

Reasons	Number	Percentage of those that Authenticate
Prevent Missuse of Resources	45	60%
Inability of Students to Use the Resources Due to Overuse by the Public	24	32%
Computer Abuse	22	29%
Mandate by Parent Institution or Group	14	19%
Printing	11	15%
Access Control	10	13%
Statistics	8	11%
Control Underage Use	2	3%

Other reasons cited...

all IT's idea to do this

Best practices

Caution

Concerned they would be used for the wrong reasons

Control

We found them misusing computer resources (porn, including child porn)

Control over college's students search inappropriate websites,
such as porn/explicit sites

Disruption

Don't know

Ease of distributing applications

Fear of abuse on the part of legal

Legal issues regarding internet access

Make student accountable

Monitor use

Policy

Security of campus network

Security of machines after issues was raised at a conference

Time

How are Users Informed of the Authentication Policy?

(75 Authenticating Libraries)

Method of Informing Users	Number	Percentage of those that Authenticate
Login or sign on screen	58	77%
Training session or other presentation	19	25%
Web page	13	17%
Signage	10	13%
staff	8	11%
Screen saver	3	4%
Library Handbook	1	1%
Mail out flyer to all students	1	1%

What Form of Authentication Do You Use?

(75 Authenticating Libraries)

Forms of Authentication	Number	Percentage of those that Authenticate
Centralized or networked authentication	44	59%
Manual paper sign-in sheets	19	25%
Preset or Temporary Authorization Logins or Guest Cards Handed Out	16	21%
Individual PC based sign-in or scheduling software	11	15%
Use the Library system in some form	6	8%
Staff Log Guests In	2	3%
Independent authentication systems	1	1%
Auto log into guests accounts at select PCs	1	1%

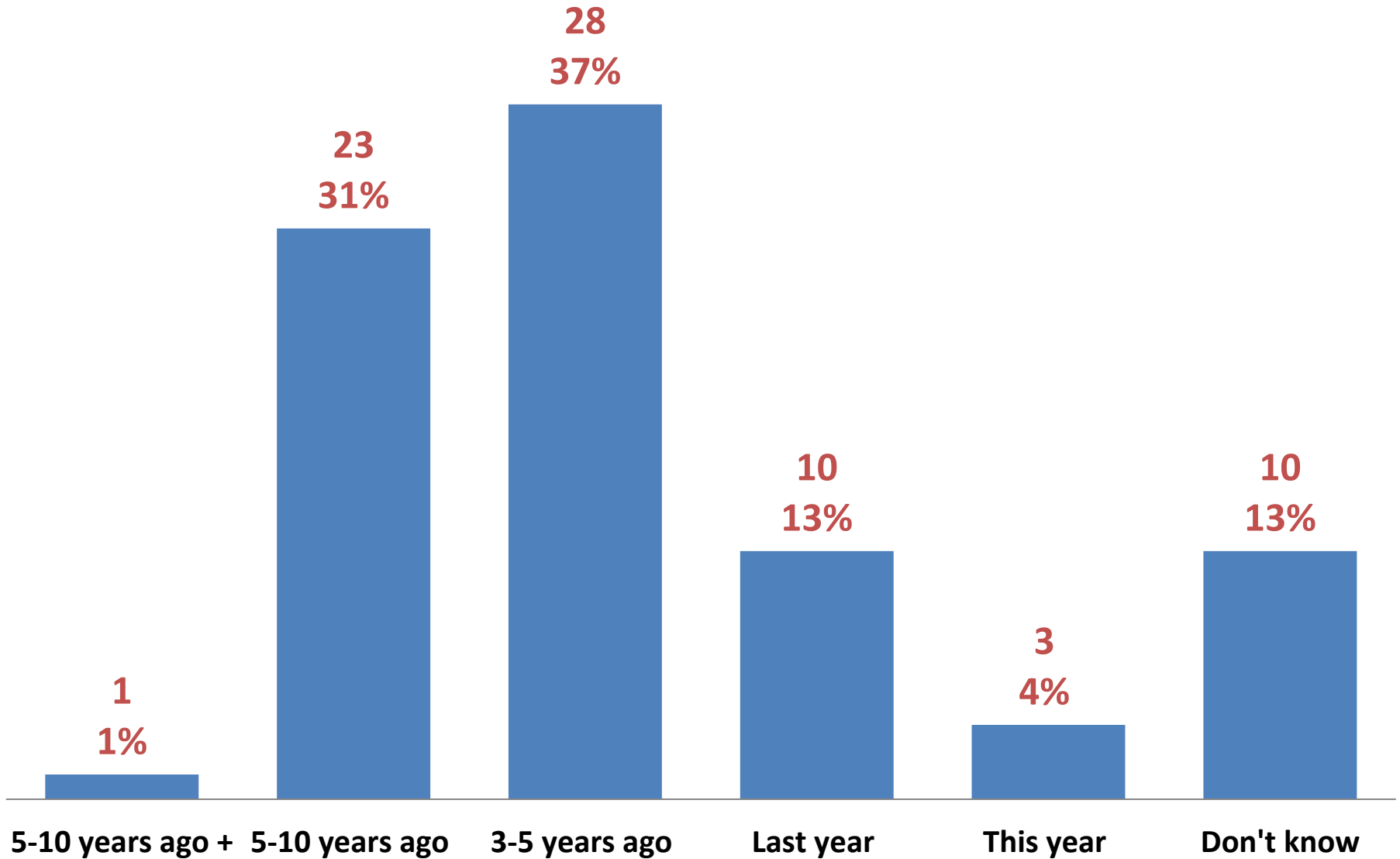
Handle User Privacy of Authentication?

(75 Authenticating Libraries)

Privacy method	Number	Percentage of those that Authenticate
Identified access (none)	50	67%
Anonymous access (each session is anonymous with repeat users not identified)	21	28%
Pseudonymous access with demographic identification (characteristics of users determined but not actual identified)	2	3%
Identified access (but not guest login - anonymous)	1	1%
Pseudonymous access (repeat users identified but not the identity of a particular user)	1	1%
Pseudonymous access (repeat users identified but not the identity of a particular user) for guest	1	1%

When Did You Implement Authentication?

(75 Authentication Libraries)

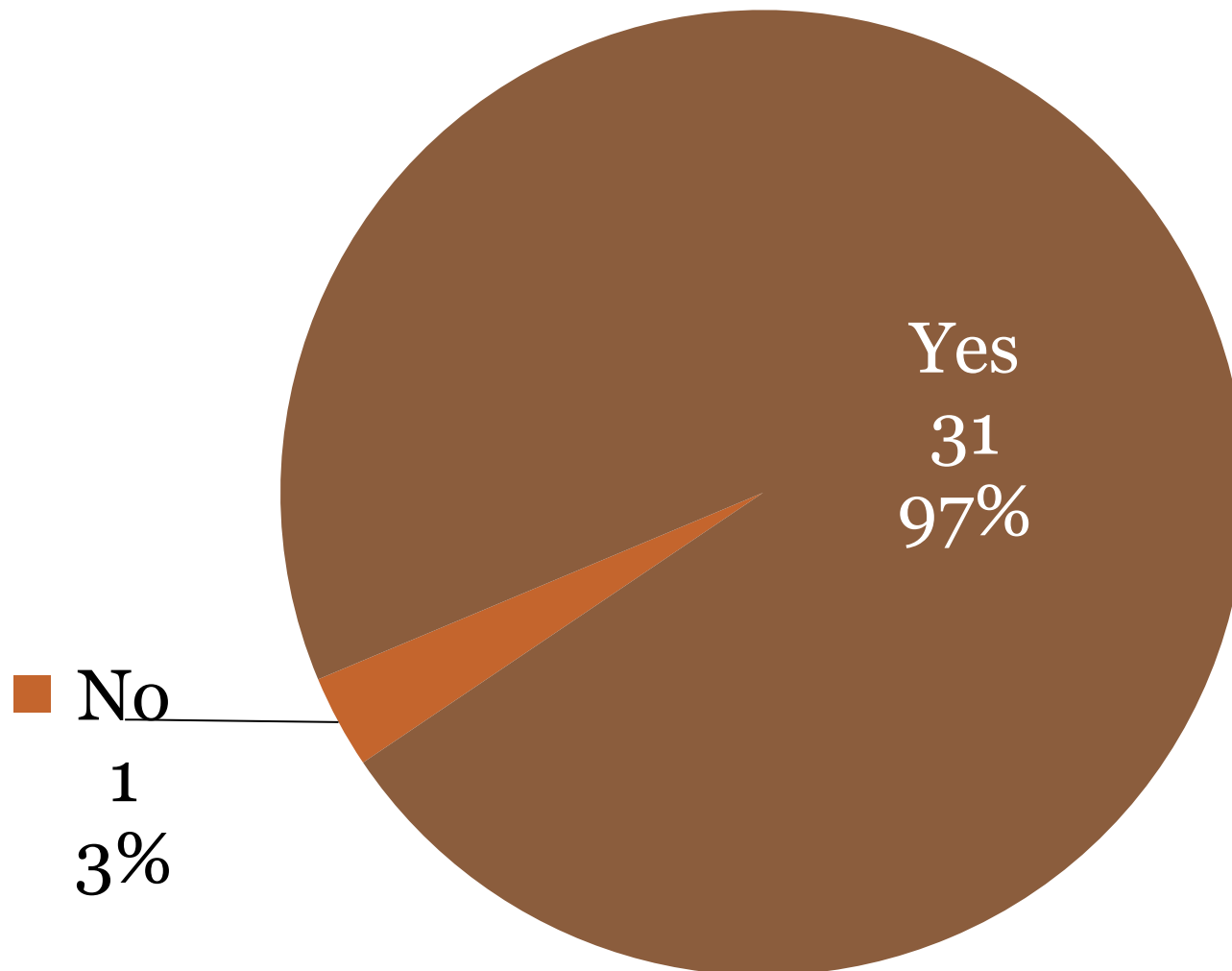


Student Only PCs in the Public area?



Authenticate the Guest or Public Use PCs

(of 32 libraries that Differentiate Between Student Only and Guest/Public Use PCs)



What Authentication provides to Student Only PCs

(of 32 libraries that Differentiate Between Student Only
and Guest/Public Use PCs)

Types of Access	Number	Percentage of those that Authenticate
Access to specialized software	26	81%
Printing	24	75%
Internet access	23	72%
Access to storage space	19	59%
Scanner	1	3%

Authentication Issues seen on Student Only PCs

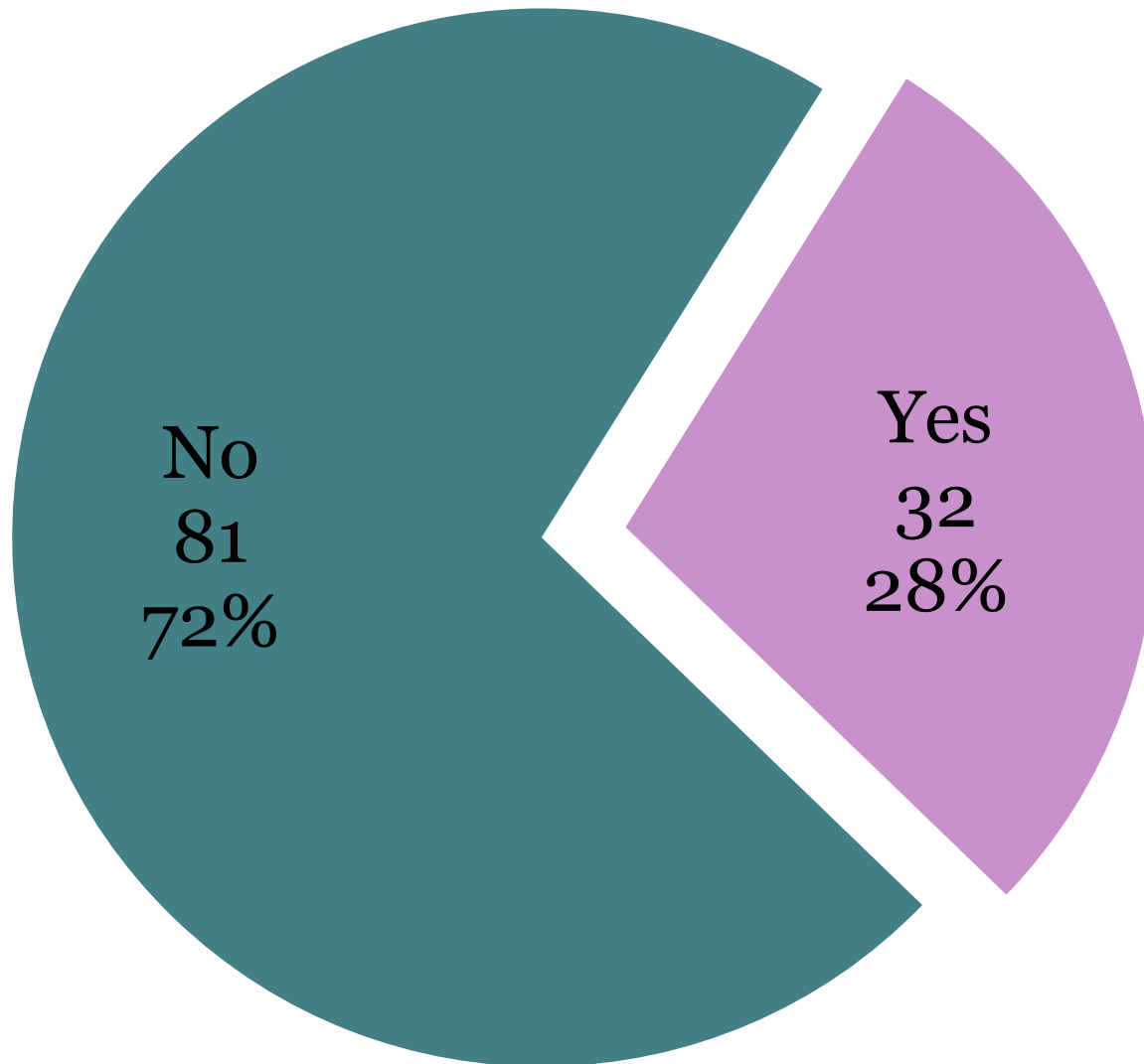
(of 32 libraries that Differentiate Between Student Only
and Guest/Public Use PCs)

Authentication Issues	Number	Percentage of those that Authenticate
Users forgetting to log out of a sessions (94% require students to log out)	28	88%
ID management issues from the user (ie, like forgetting passwords)	18	56%
ID management issues from the network (ie, updating changes in timely fashion)	6	19%
Timing out issues (31% User is timed out)	6	19%
Authentication system become not available	7	22%

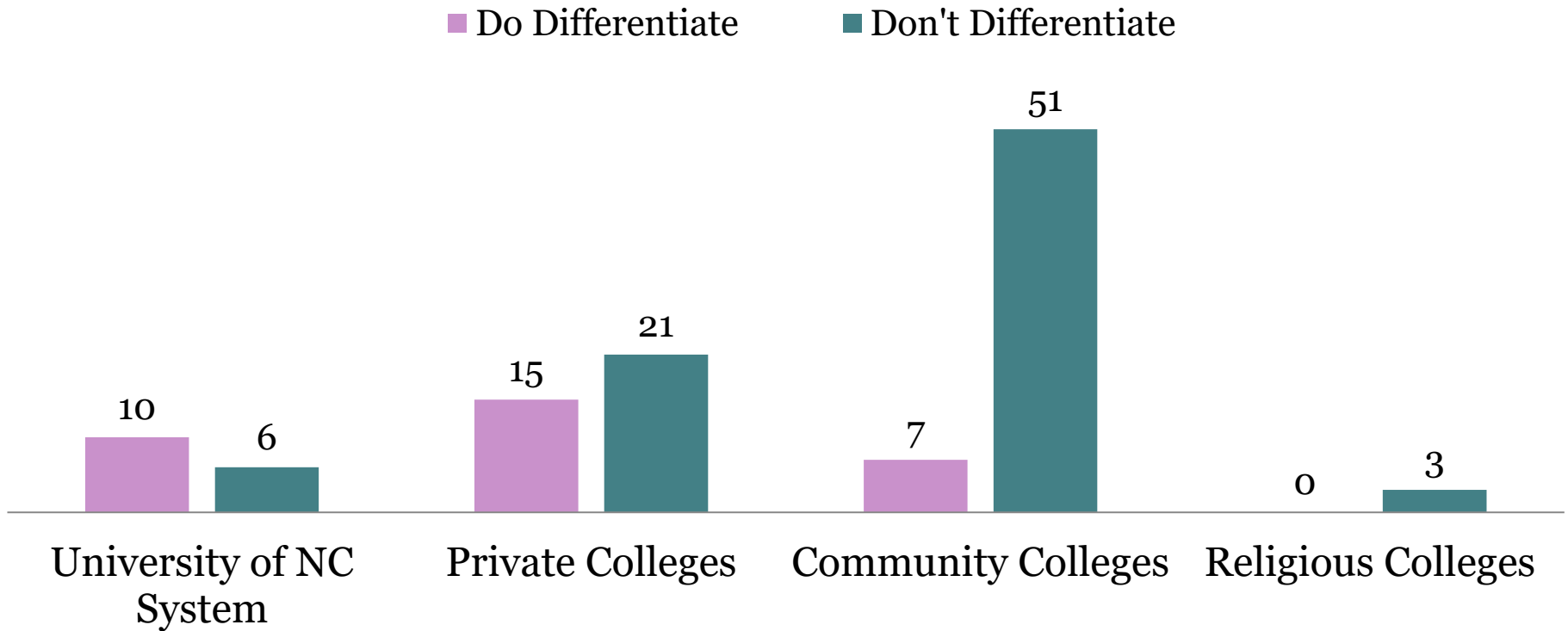
Guest or Public Use PCs



**Differentiate between
Student Only and Guest/Public Use PCs?
(all 113 libraries)**

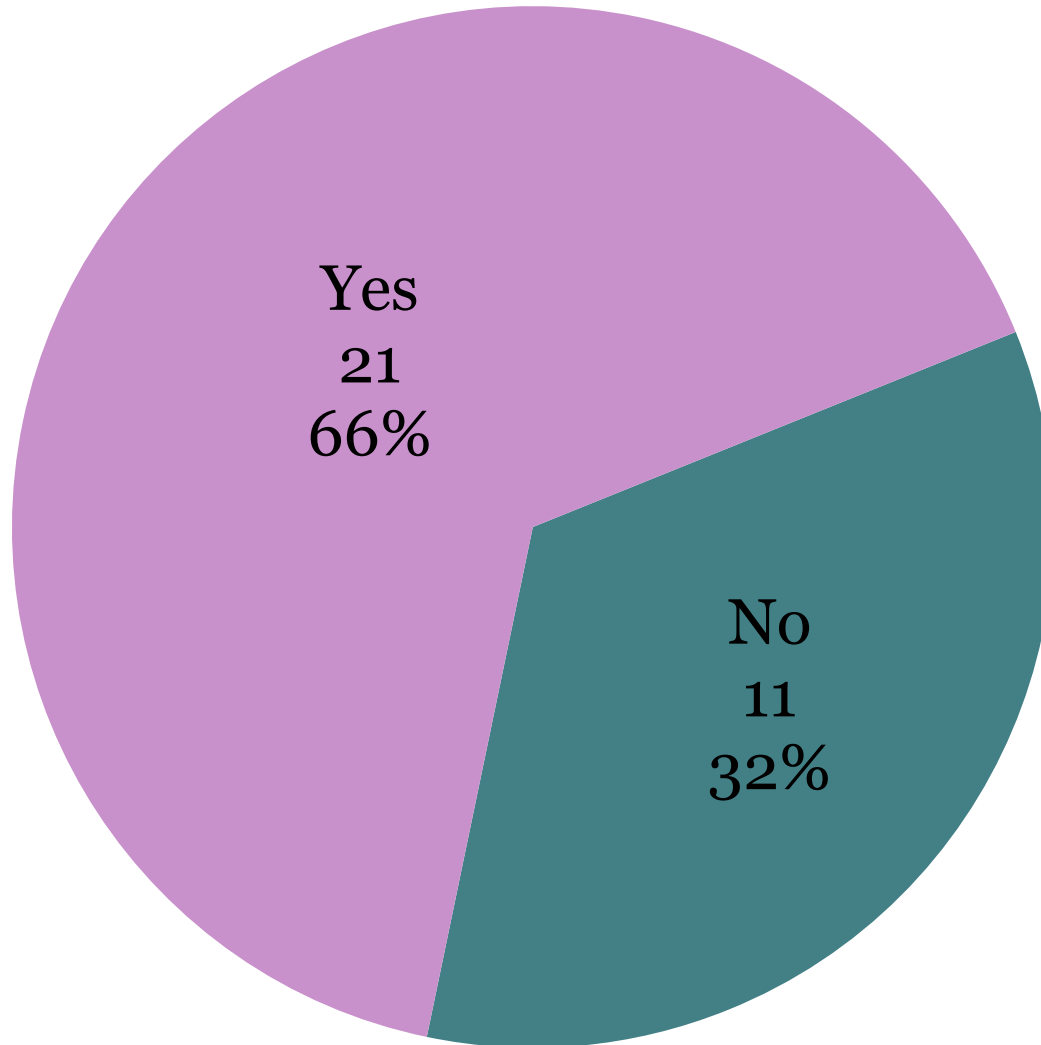


Differentiate between Student Only and Guest/Public Use PCs? (by type of institution)



Authenticate the Guest or Public Use PCs

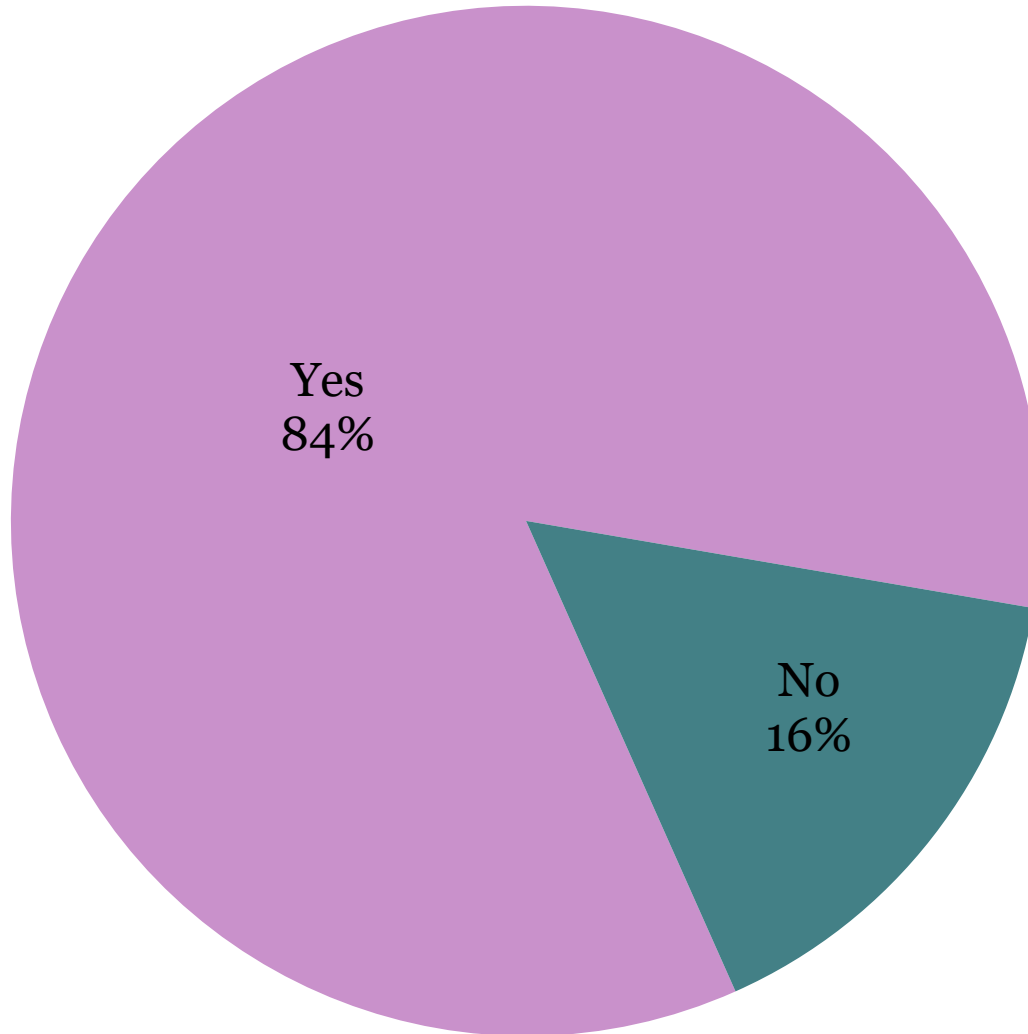
(of 32 libraries that Differentiate Between Student Only and Guest/Public Use PCs)



How Authentication Controls Guest and Public Use PCs (Those Differentiated and All libraries)

Limitations	Number	Of the 32 libraries that differentiate	Of all libraries responding
Internet Access Only	19	59%	17%
Limited Software	16	50%	14%
Timed or Scheduled Access	14	44%	12%
Limited or Different Charge for Printing	13	41%	12%
Control, Limit or Lock Access to Library Resources (such as databases or other subscription based services)	4	13%	4%
Control, Limit or Block Web Sites that Can Be Accessed	3	9%	3%

**Guest or Public Use PCs Are
within Line-of-sight to Library Service Desk**
(of 32 libraries that differentiate between Student Only and
Guest/Public Use PCs)



How Guest or Public Use PCs are Clustered

(of 32 libraries that Differentiate Between Student Only
and Guest/Public Use PCs)

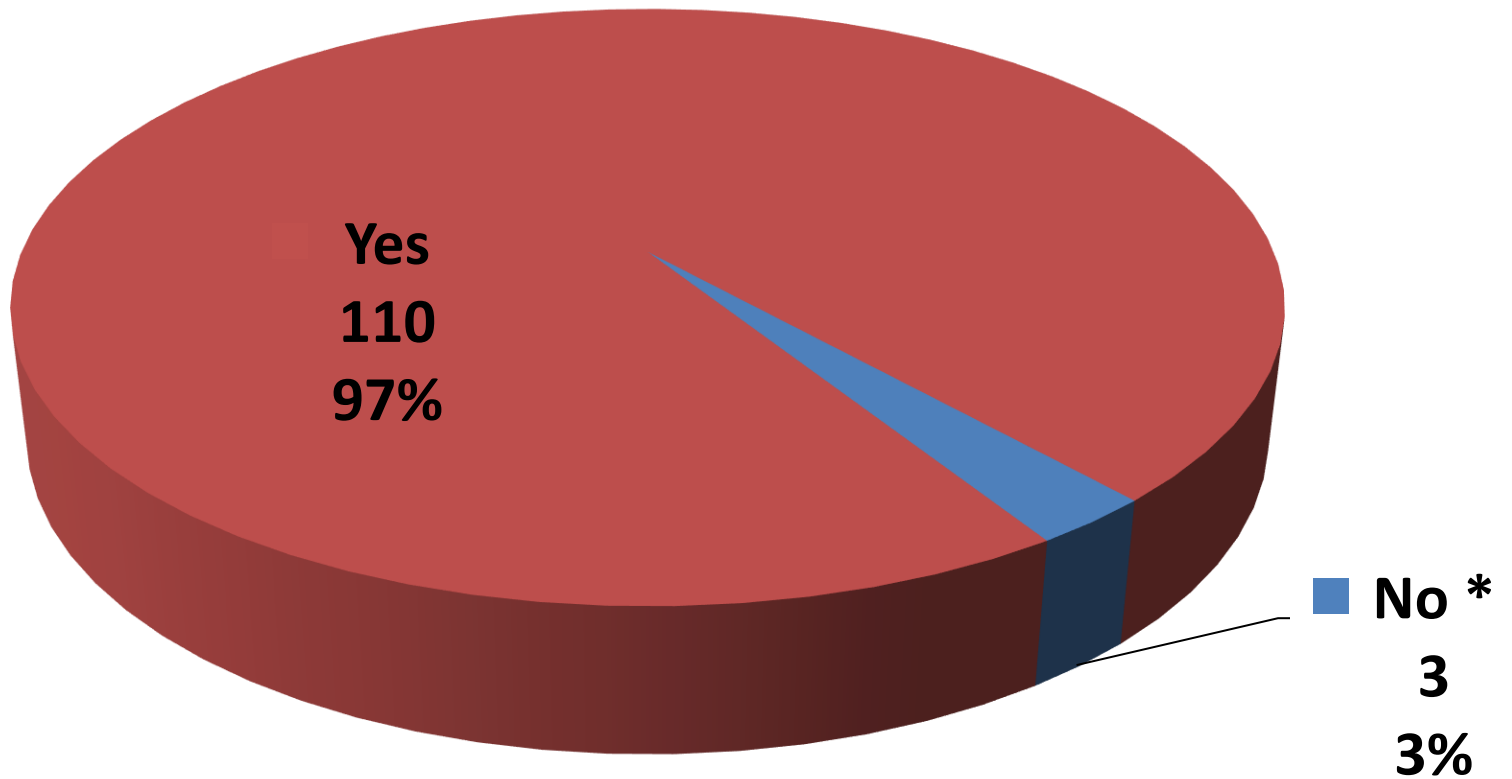
	Number	Percent
All In One General Area	16	50%
Scattered Throughout the Library	3	9%
In Several Groups Around the Library	2	6%

Wireless Access



Wireless Access

(all 113 libraries)



* All 3 are Community Colleges

Library Has a Different Wireless Policy

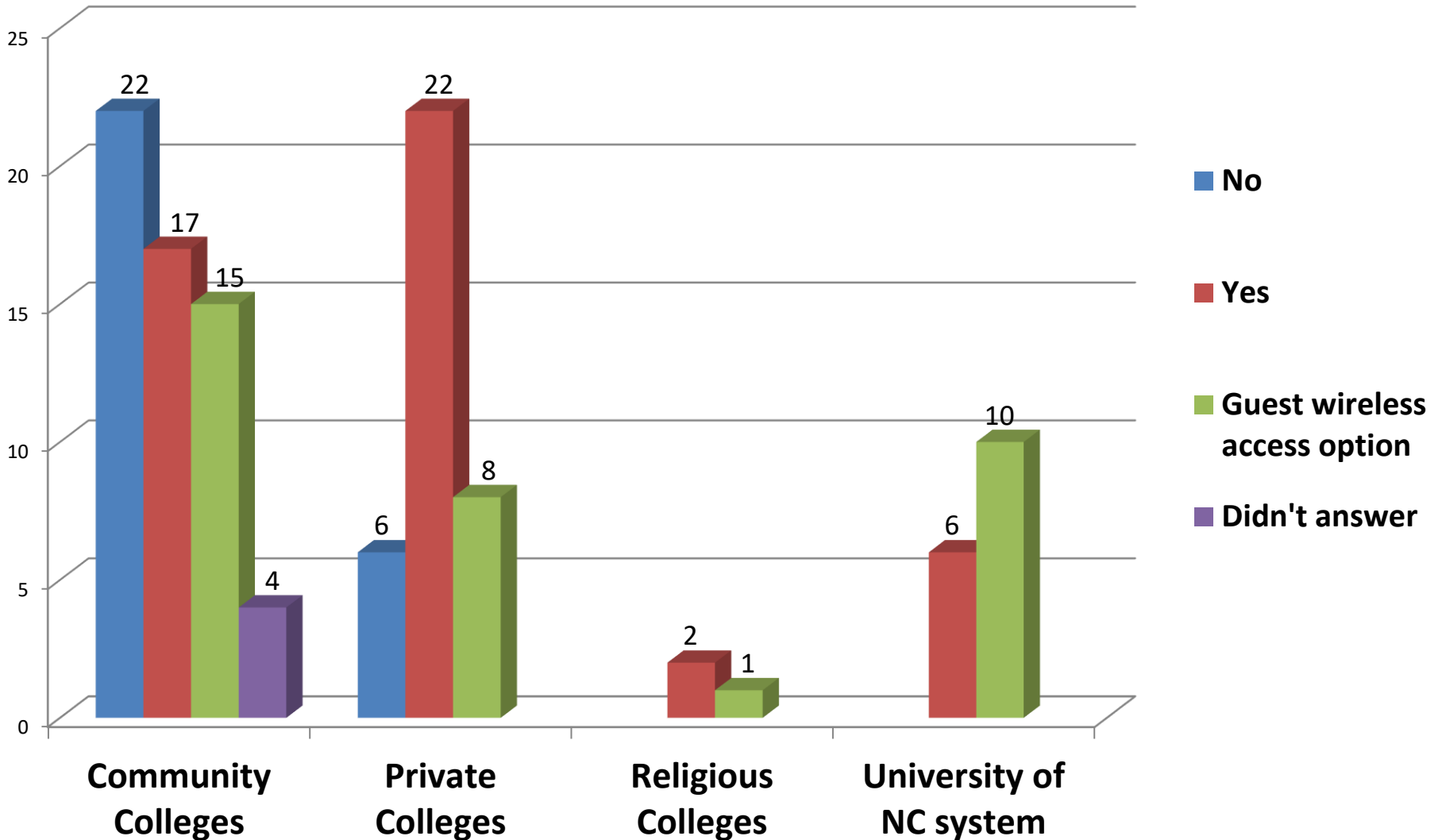
(all 113 libraries)

	Number	Percent
No	79	70%
Yes *	3	3%
Didn't answer	31	27%

* 2 Community Colleges and 1 Private College (outside agency runs wireless)

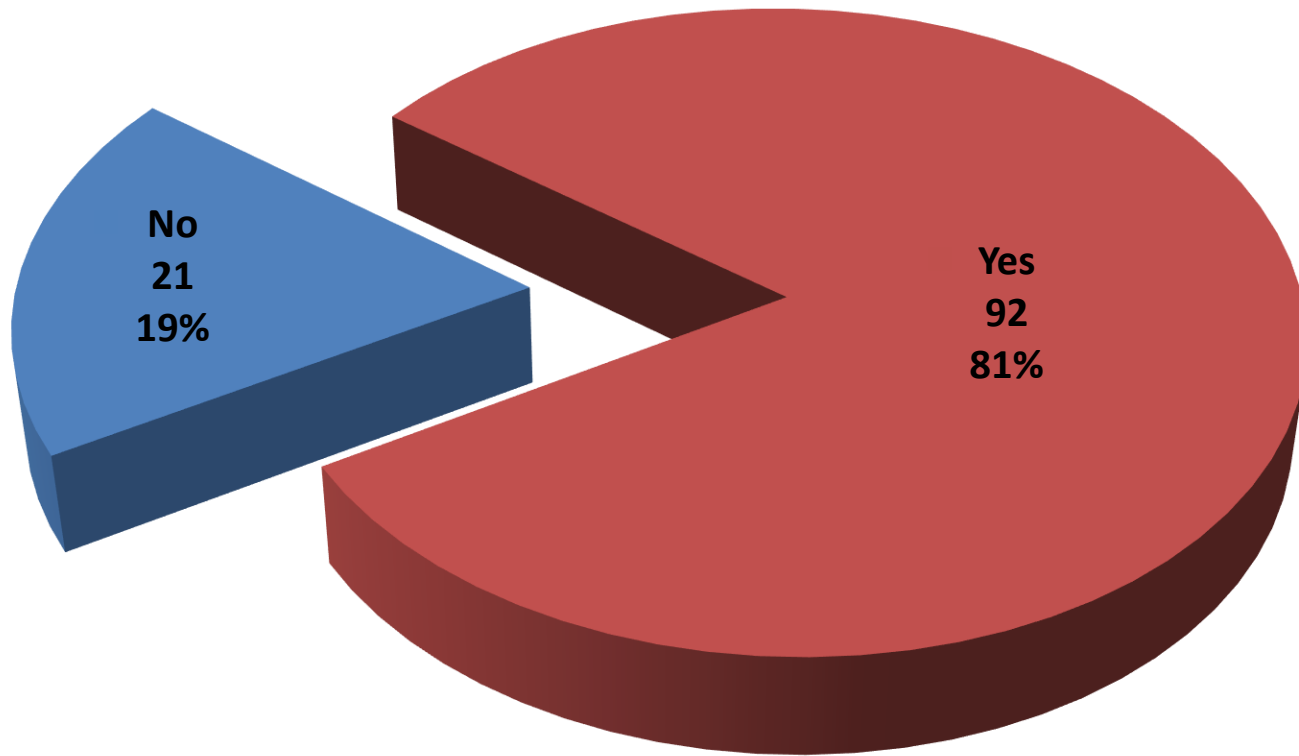
Wireless Authentication

(by type of institution)

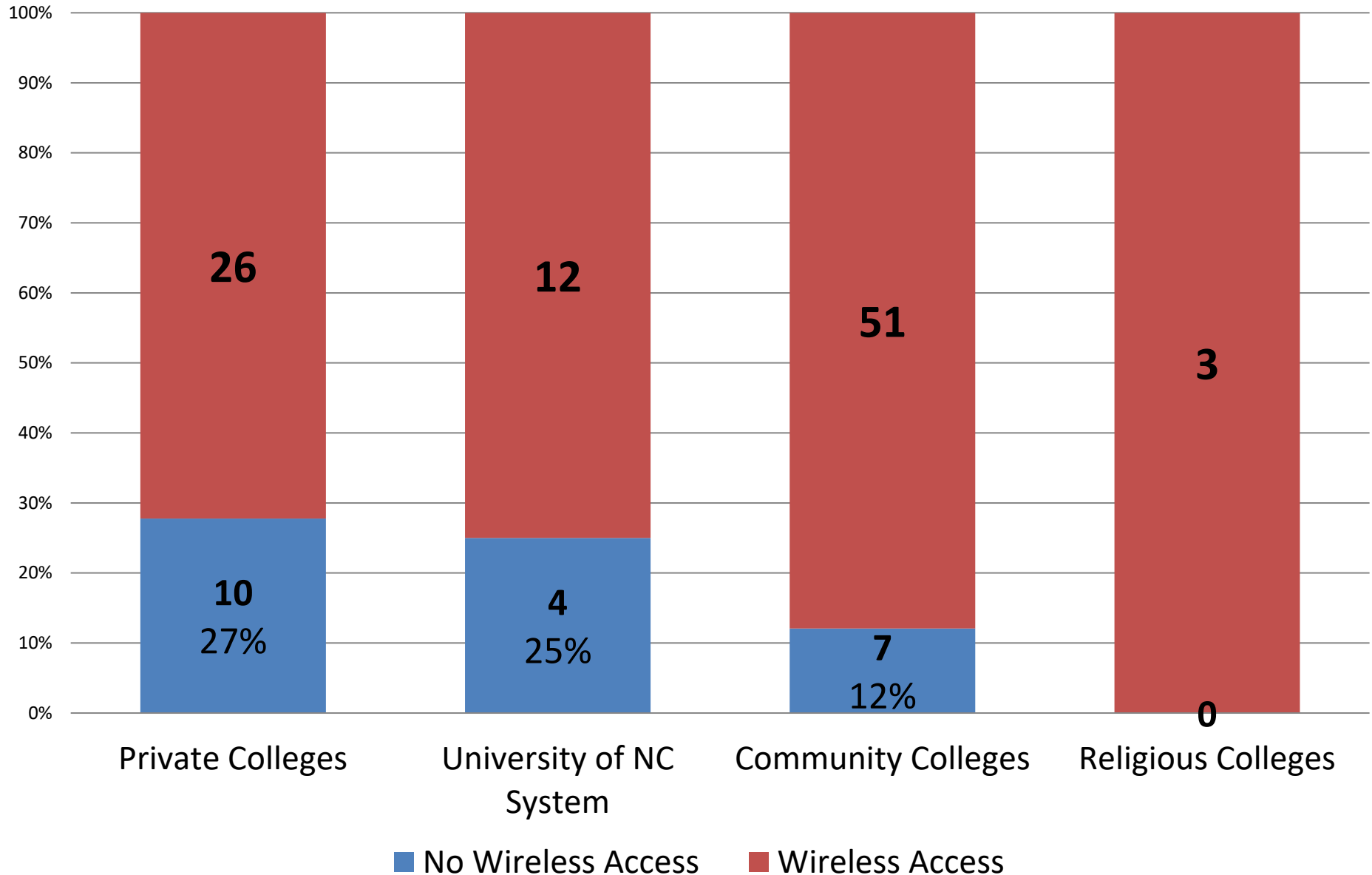


Wireless Access Given to Guests or General Public

(all 113 libraries)



No Wireless Access Given to Guest or General Public (21 Libraries by type of institution) (switch colors)

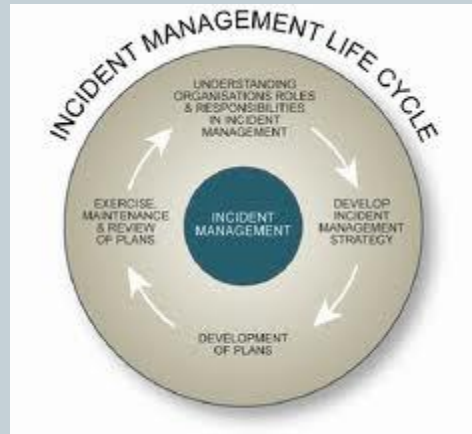


Other Methods Used to Give Guest and Public Wireless Access

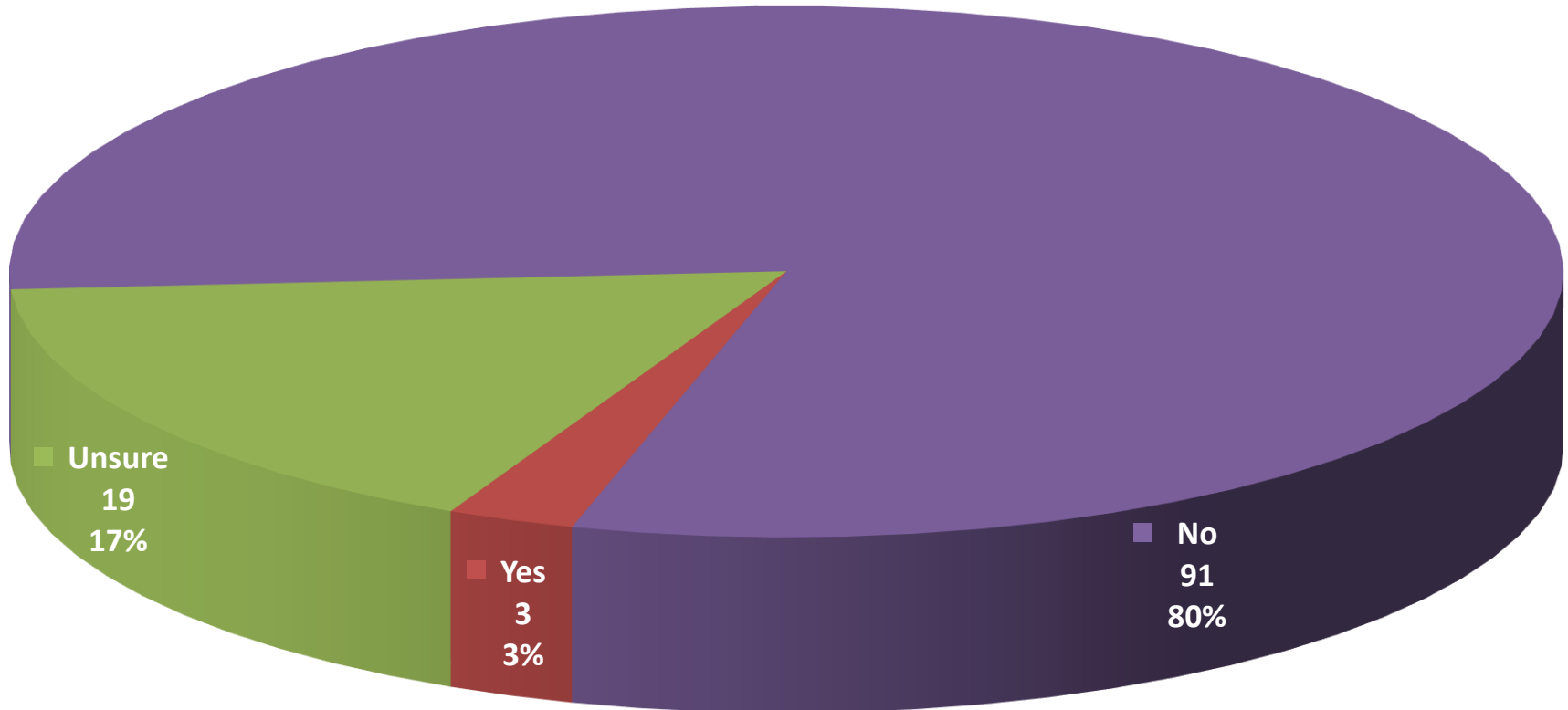
(of the 110 libraries with wireless)

Method of Control	Number	Percent
Limited access by time	10	9%
Limited access by resources (such as Internet access only)	10	9%
Paperwork and/or signature required before access given	8	7%
Special groups get full access	2	2%

Incident Responses

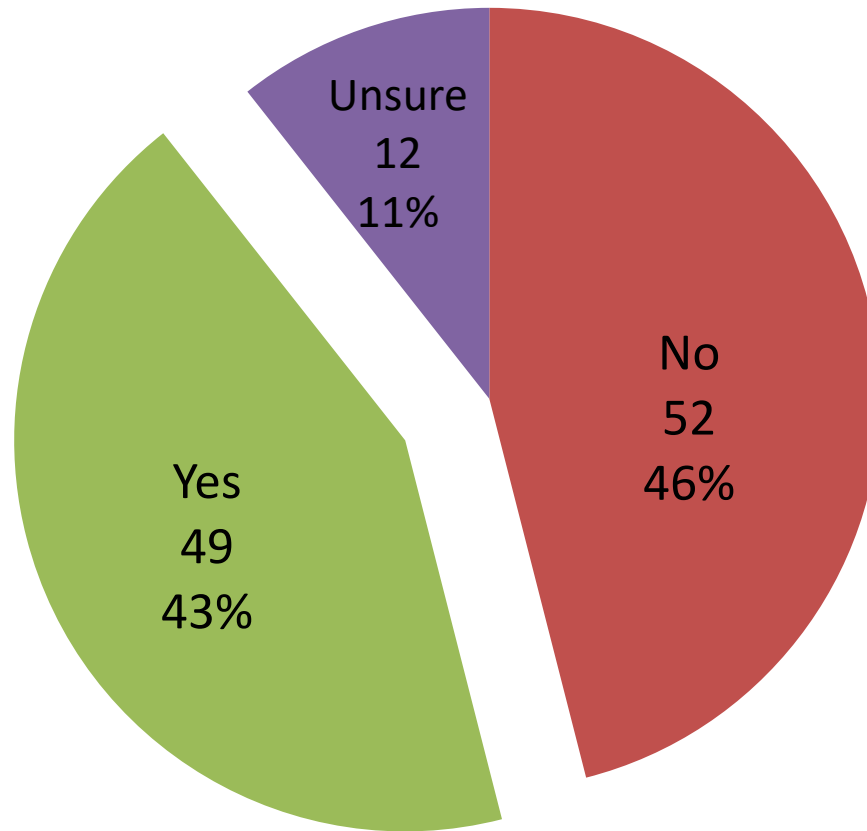


Known Incidents of Breach of Privacy (all 113 libraries)



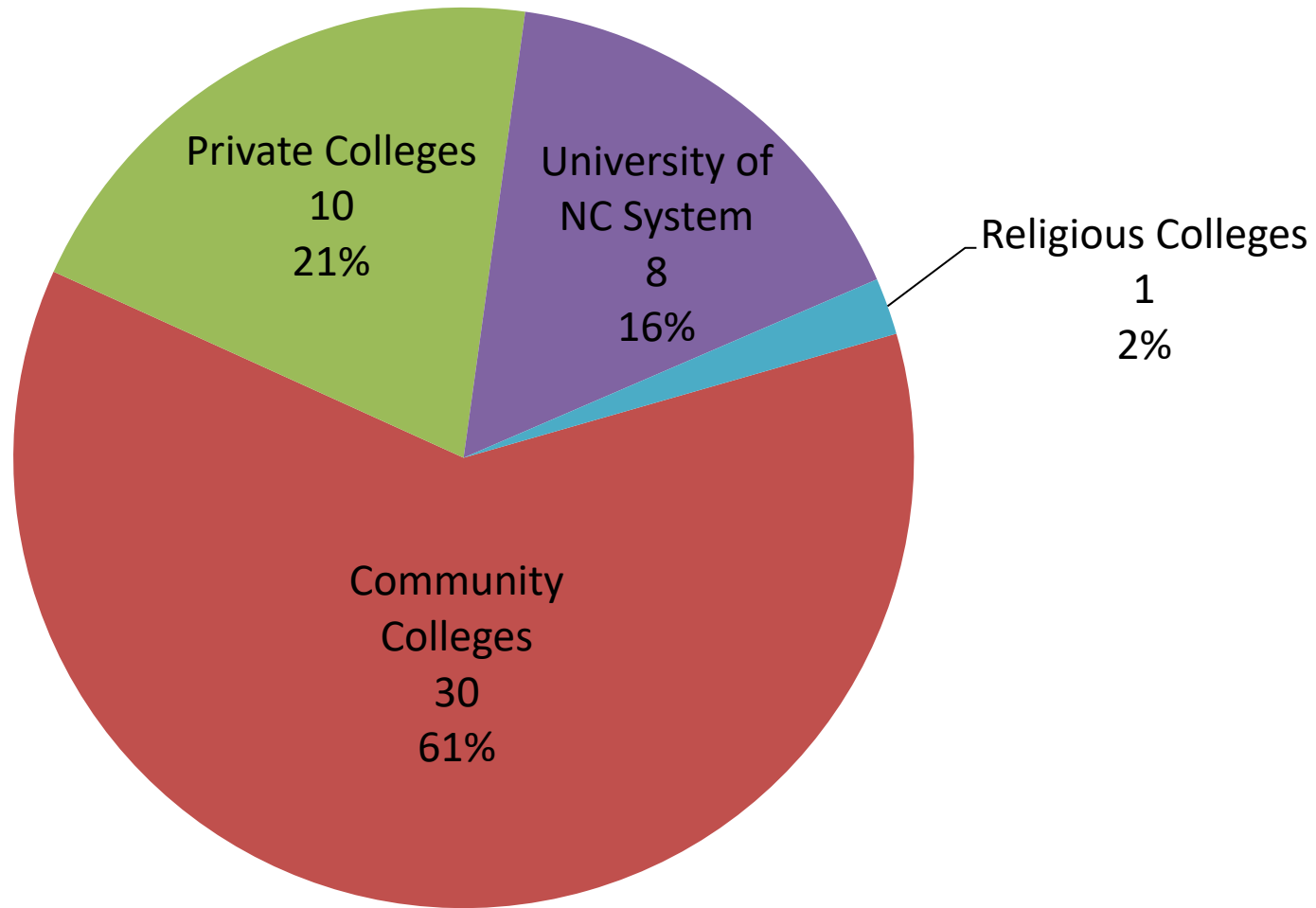
Improper Use of the Public PCs Reported

(all 113 institutions)



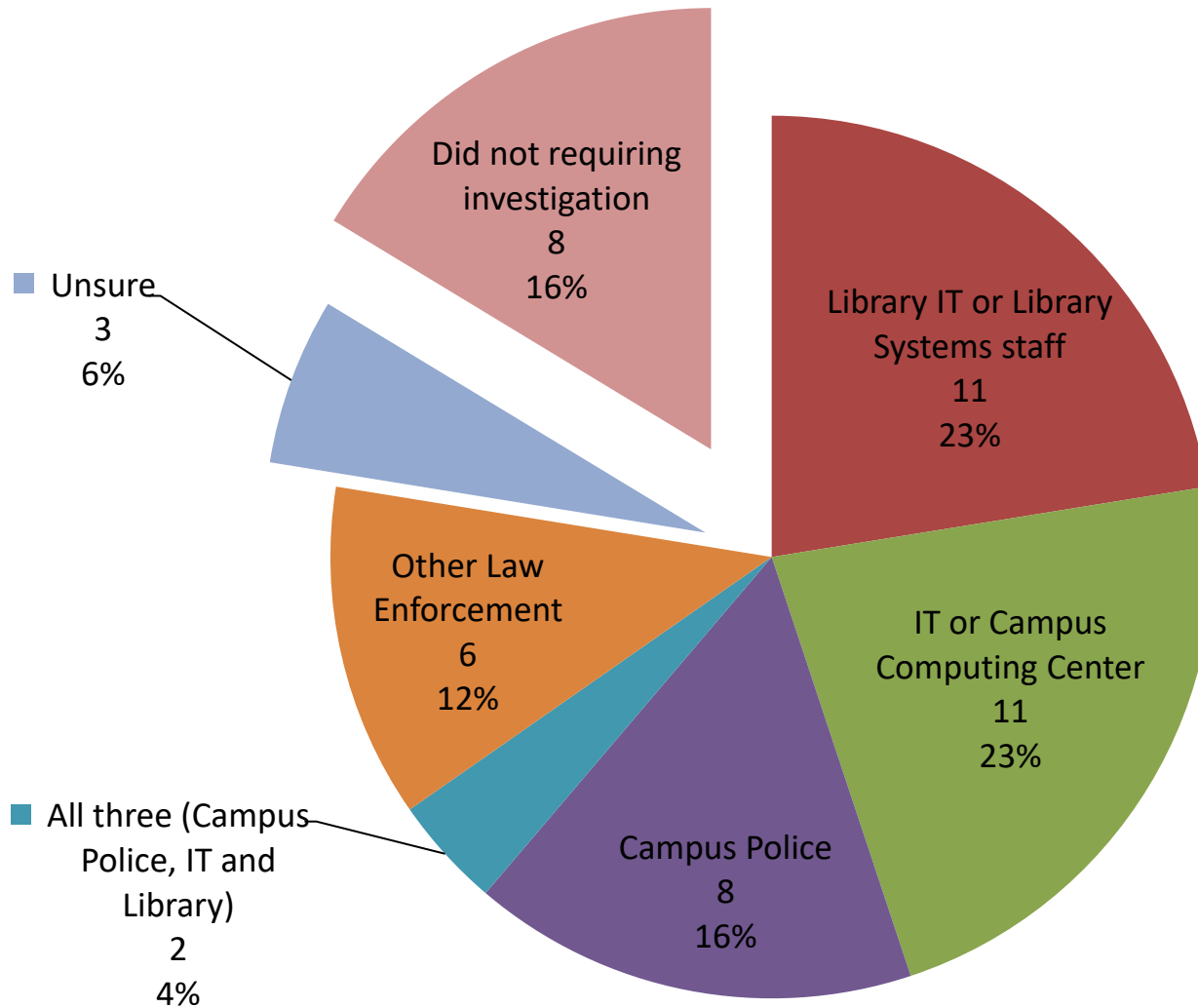
Type of Institutions Reporting Improper Use?

(Of the 49 libraries reported incidents)



Who Handled the Investigation?

(Of the 49 libraries that reported incidents)



Computer Activity Logs



What Kind and For How Long Computer Logs are Kept (all 113 Libraries)

Computer Activity Logs	Number	Of total libraries	Don't know how long data is kept (unsure)
Unsure	59	52%	100%
Authentication logs (who logged in)	28	25%	60%
None	21	19%	--
Browsing history (kept in centralized log files)	14	12%	86%
Scheduling logs (manual or software)	10	9%	70%
Browsing history (kept on PC after reboot)	7	6%	57%
Software use logs	6	5%	33%
Library system	4	4%	75%
Other	2	2%	--

Future Directions in Our Research



- **Conclusions?**
 - Surprises in the findings
 - Privacy and ethics
- **Further correlation and research with the responses**
- **What we didn't ask**