

Defining the Interaction Between Users and Suppliers of Proteomics Services/Facilities

- <http://www.abrf.org/prg>

PRG Members 2010-2011

- **David Hawke** (Chair) - *MD Anderson Cancer Center*
- **Tracy M. Andacht** - *Center for Disease Control and Prevention*
- **Maureen K. Bunger** - (Incoming Chair) *Research Triangle Institute*
- **Cory Bystrom** - *Quest Diagnostics*
- **Larry Dangott** - *Texas A&M University*
- **Henrik Molina** - *Center for Genome Regulation (CRG)*
- **Robert E. Settlage** – (outgoing) *VBI Virginia Tech*
- **Robert L. Moritz** - *Institute for Systems Biology*
- **Chris Turck** (EB Liaison, outgoing) - *Max Planck Institute*
- **Newbies:** Keiryn Bennett, John Leczyk, Brett Phinney (EB)



Proteomics Research Group Mission

PRG2011

- The PRG is a volunteer scientific organization dedicated to sharing knowledge about the analysis of proteins.
- The PRG aims to assist protein scientists and resource facilities by sponsoring annual research studies that examine current techniques and capabilities.
- Through the promotion of broad participation and scientific excellence, the PRG aims to raise awareness, knowledge and education about modern methods of protein analysis.

Some Key Reminders

- These studies are NOT a competition
- These studies are meant to be challenging
- Studies are chosen to represent ‘real life’ examples of analyses that are requested of core facilities
- These studies are useful for laboratories to benchmark themselves against other groups.

Recent Research Studies

242 participants
85 members (35%)

96 requests
47 returns (49%)
6 members (18%)

49 requests
27 returns (55%)
30% members (8)

114 requests
57 returns (50%)
42% members (24)

87 requests
43 returns (49%)
51% members (22)

91 requests
52 returns (57%)
57% members (30)

- **PRG2011:** The Big Survey (only one was bigger, JBT 2006).
- **PRG2010:** Identifying unanticipated problems in an otherwise straight-forward analysis.
- **PRG2009:** A targeted relative protein quantification study relevant for a biomarker validation project.
- **PRG2008:** Identify differences between two samples that have different lengths of the same protein sequence
- **PRG2007:** Relative abundance of 12 proteins spiked into an *E. coli* lysate between 3 different samples
- **PRG2006:** Relative abundance of 8 proteins between 2 different samples

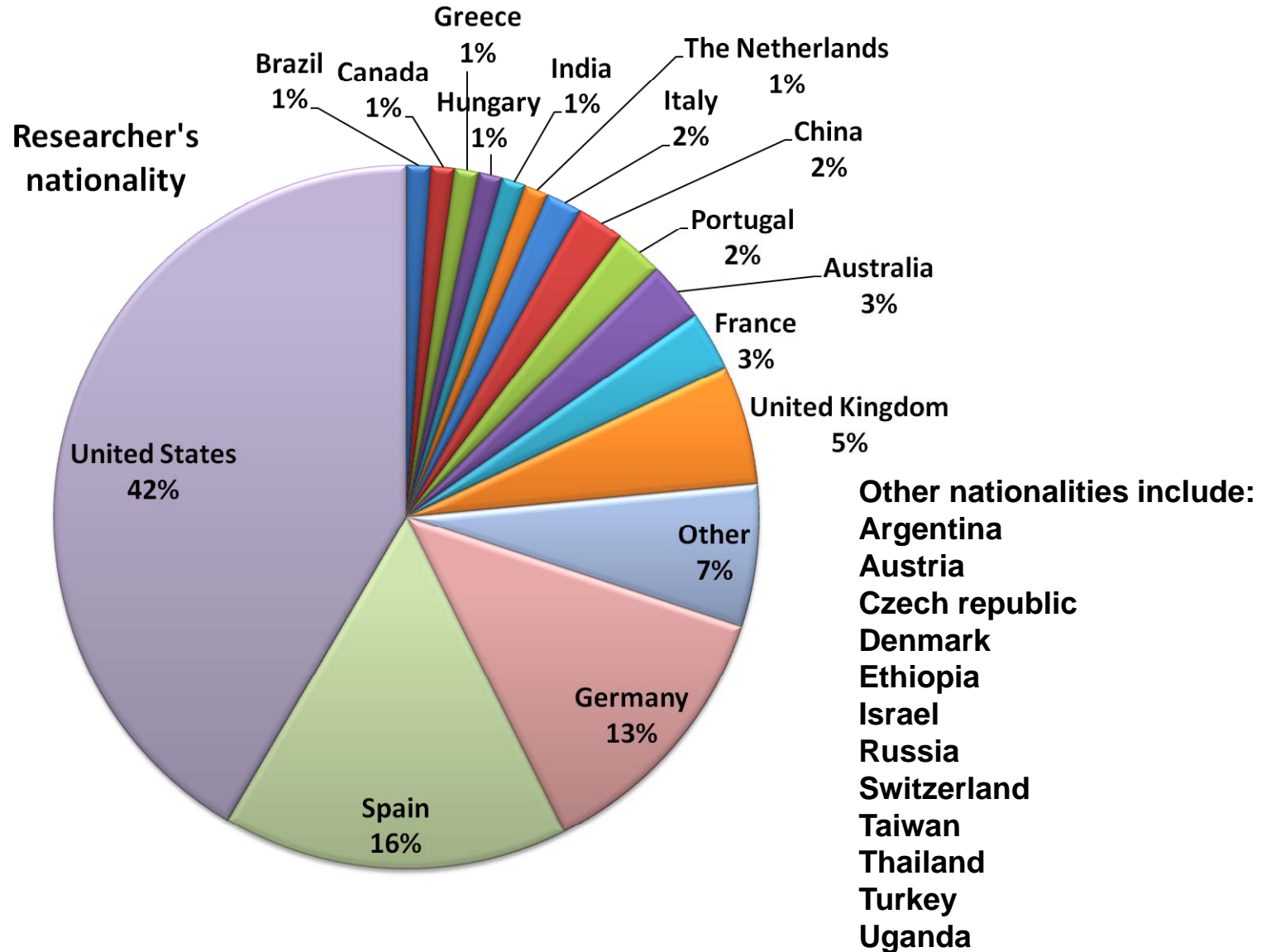
PRG2011 Study Objectives

- To probe how facilities and clients interact, assess key factors.
- Find trends in financial operations of facilities.
- Find trends in technologies available in facilities, and what users and facilities want.
- Probe how facilities and clients communicate.
- Assess interest in the ABRF and the PRG.

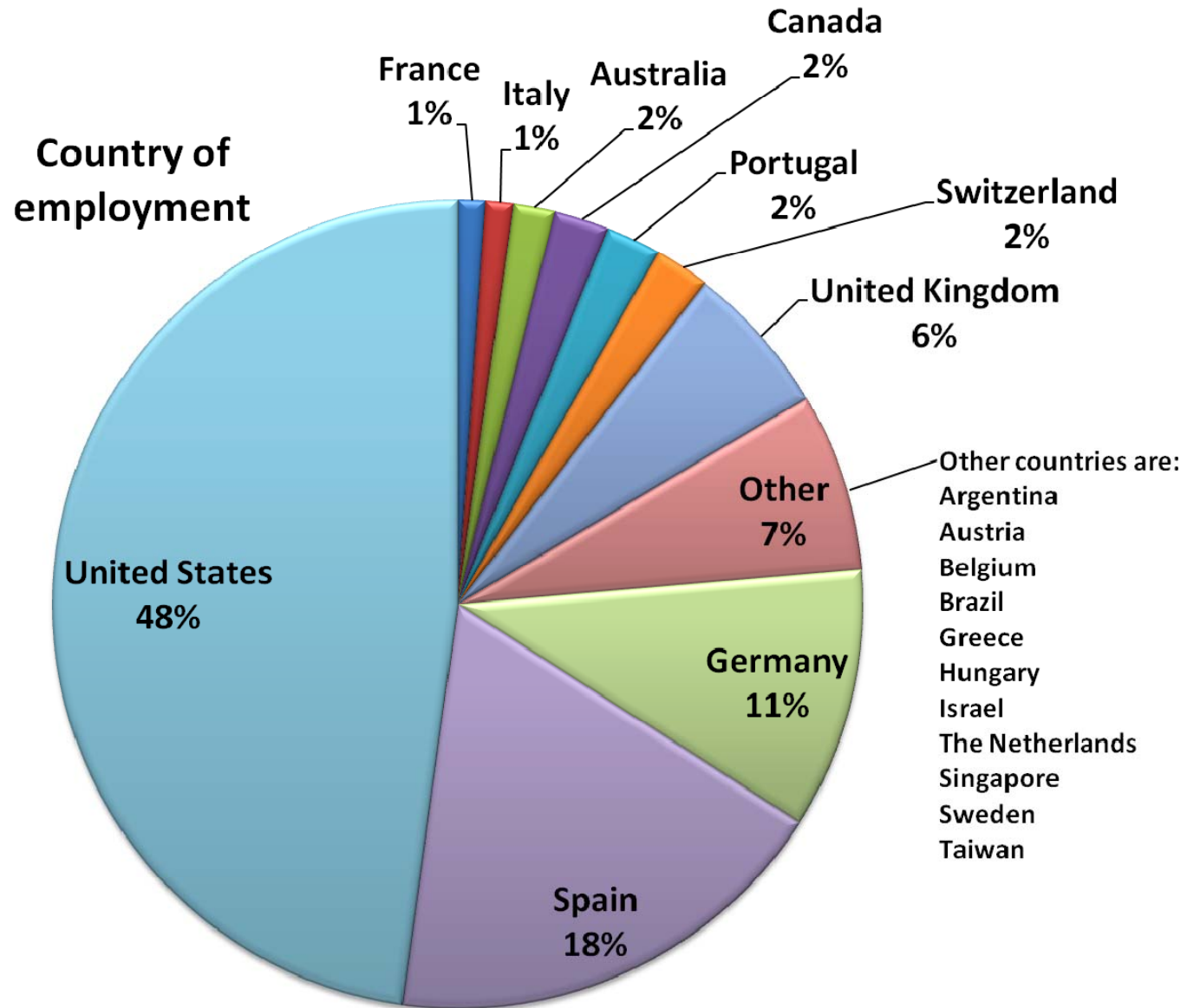
About the Survey

- 73 questions in total.
- Some common questions – demographics and ABRF-related.
- Separate tracks for Users, Facility Directors, and Facility Employees.
- Some other switches for certain responses.
- 242 total responses, but only 142 (59%) “completed” the survey according to Survey Monkey.

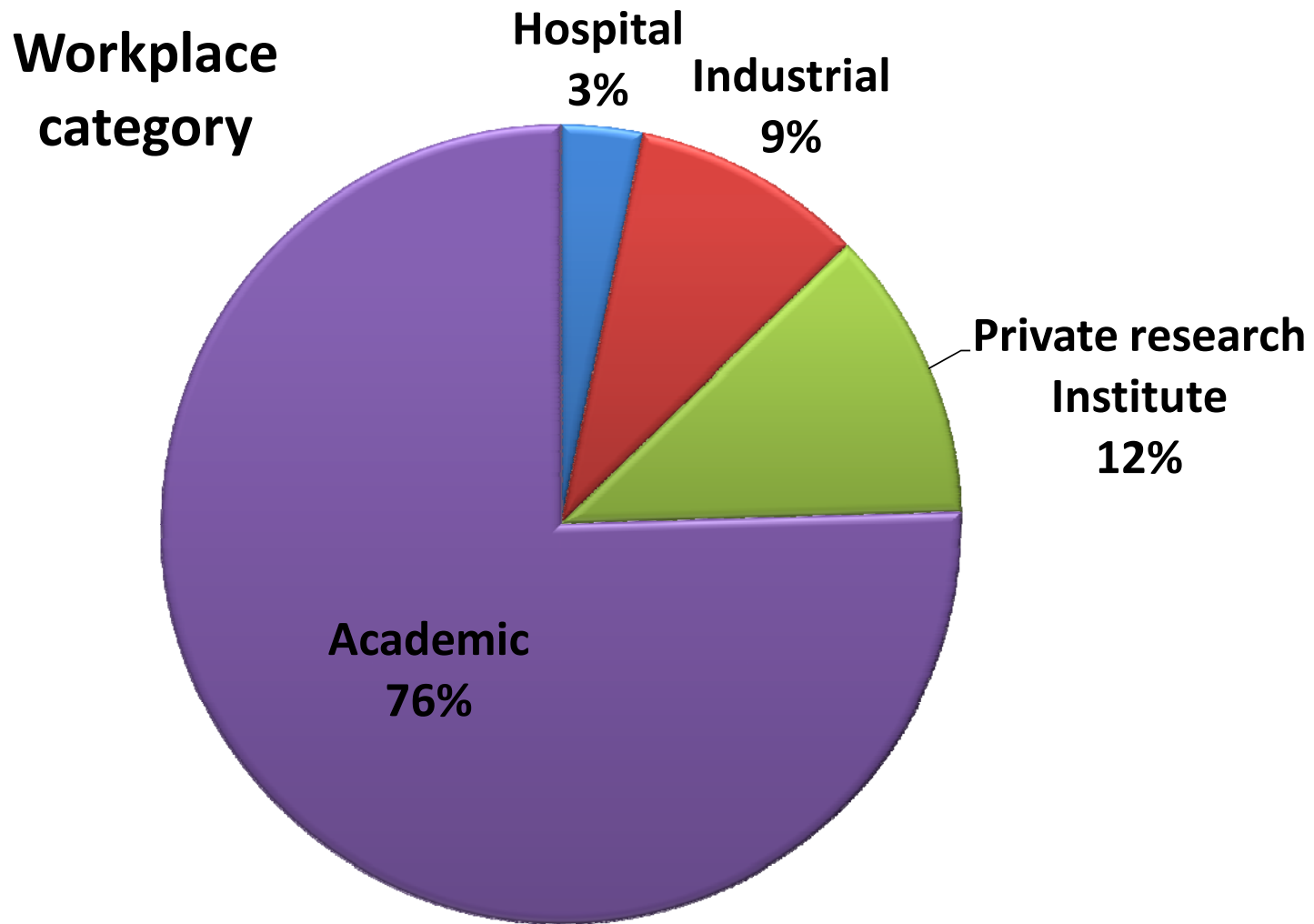
Demographics



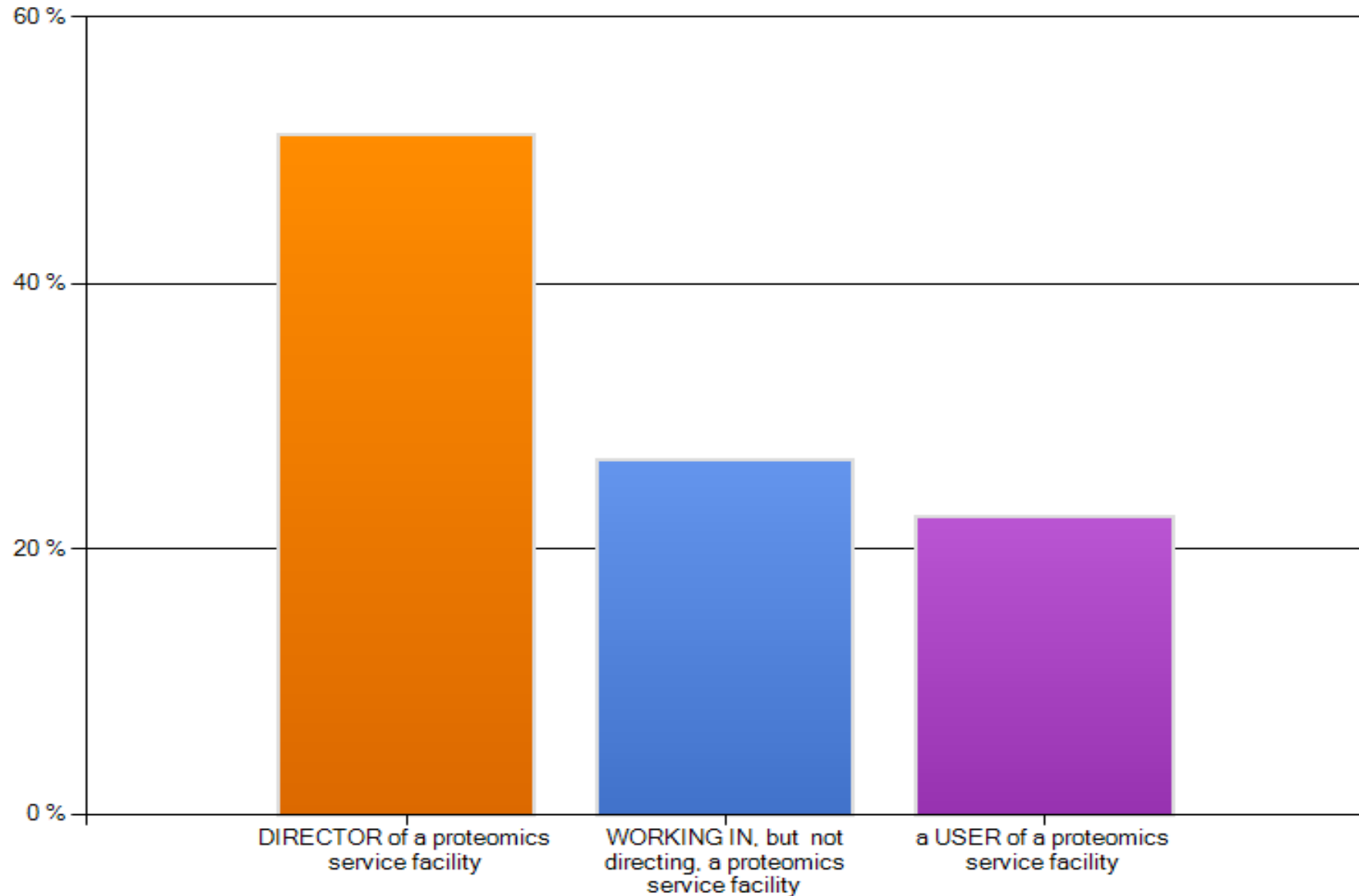
Demographics



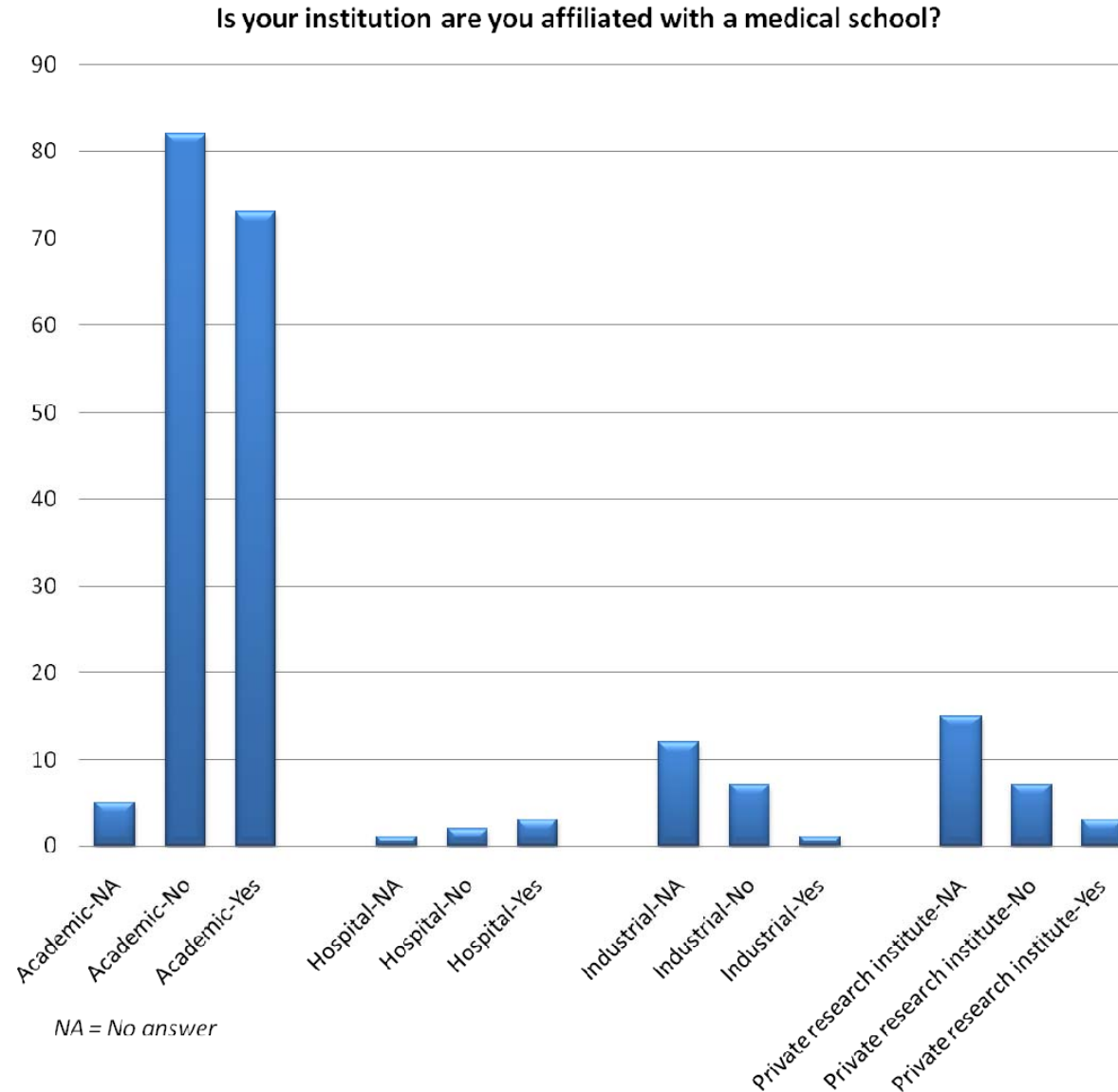
Demographics



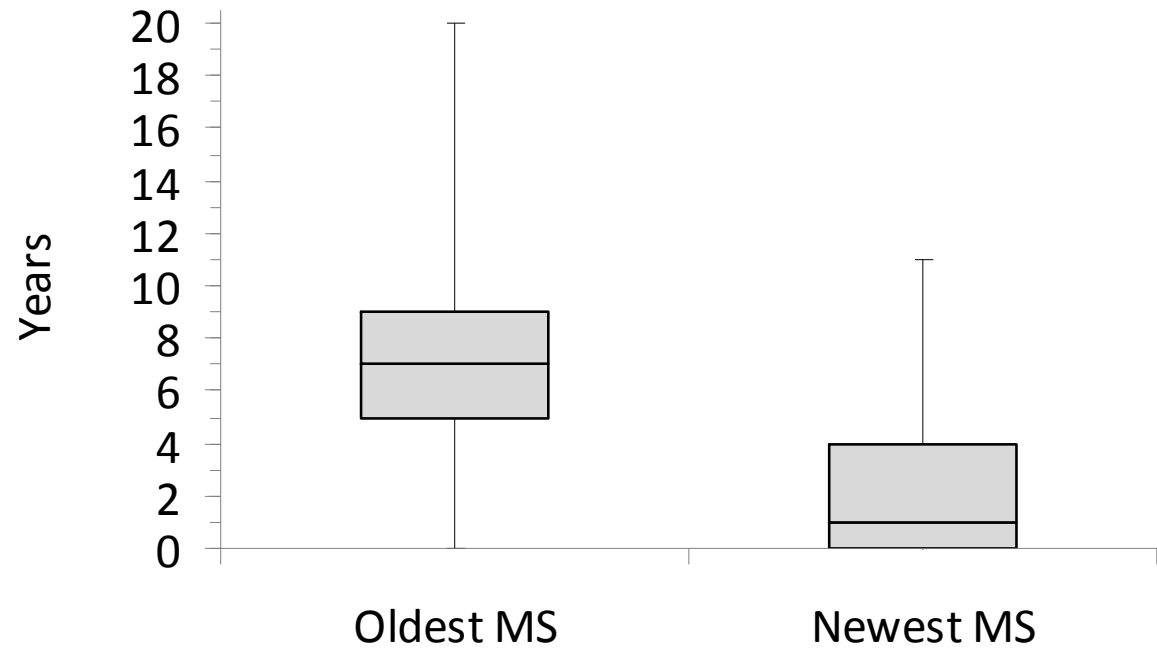
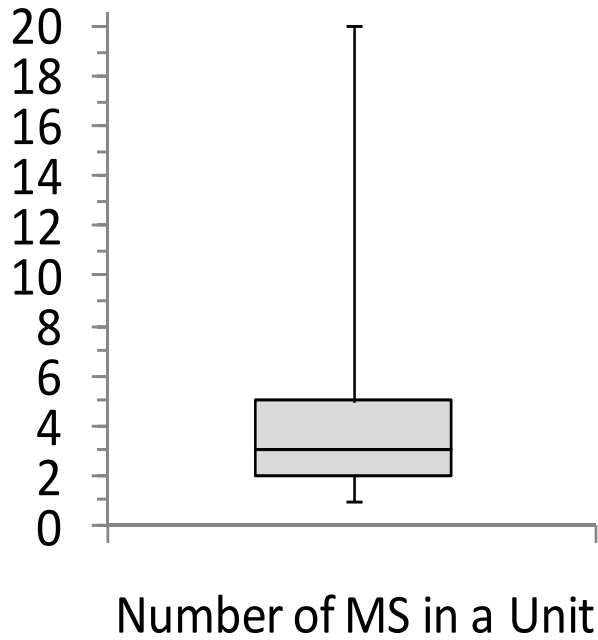
Users or Not



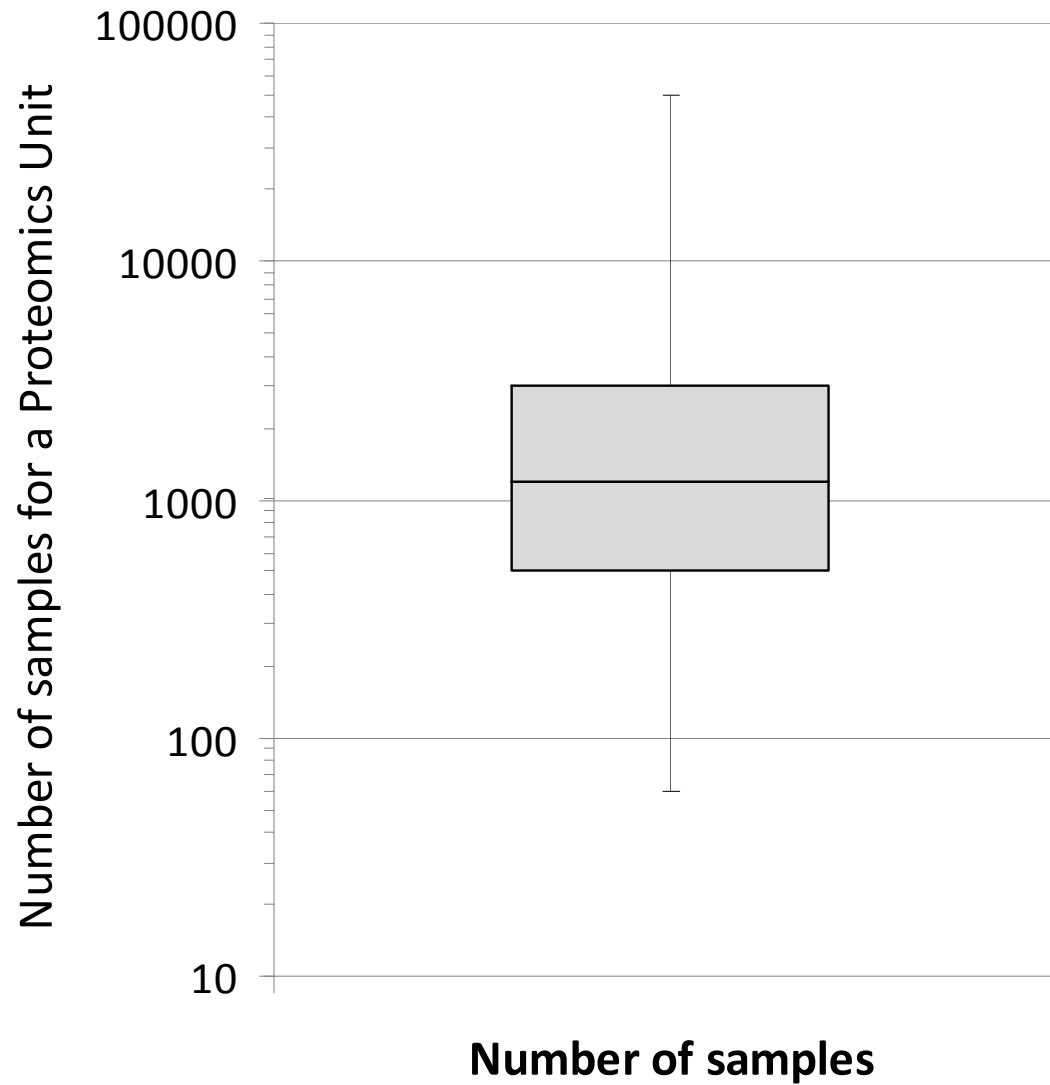
Is your institution affiliated with a medical school?



Mass Spectrometers

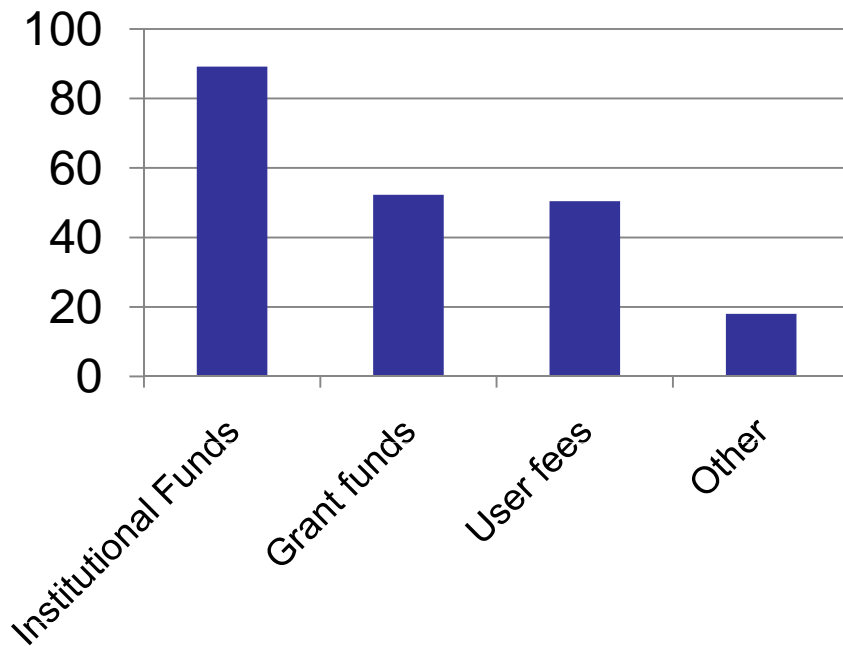


Samples per Year

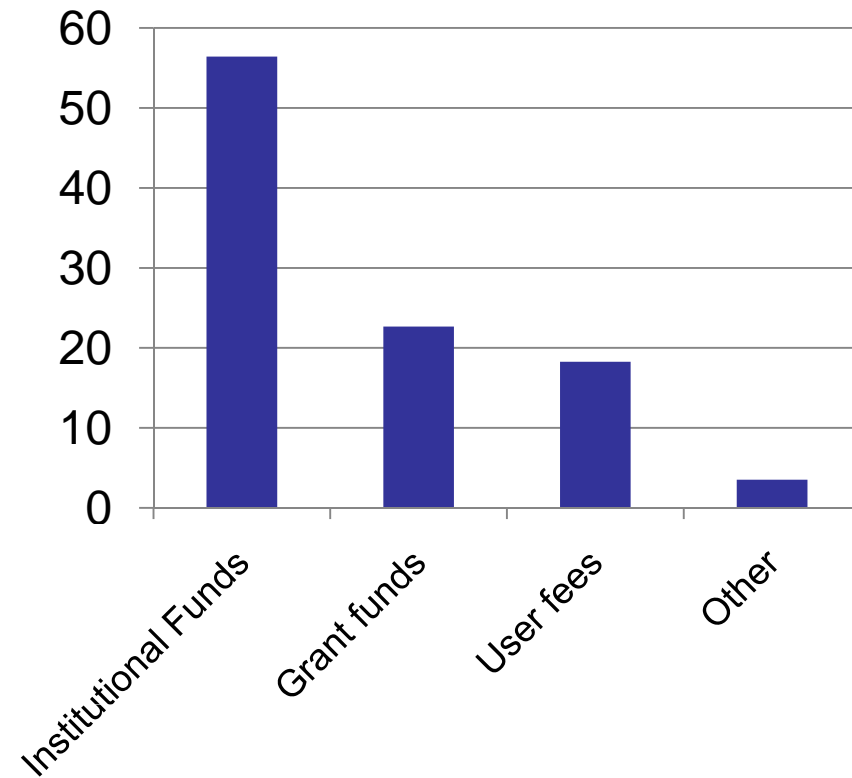


How are Personnel Funded?

Percentage of facilities using each type of funding for personnel

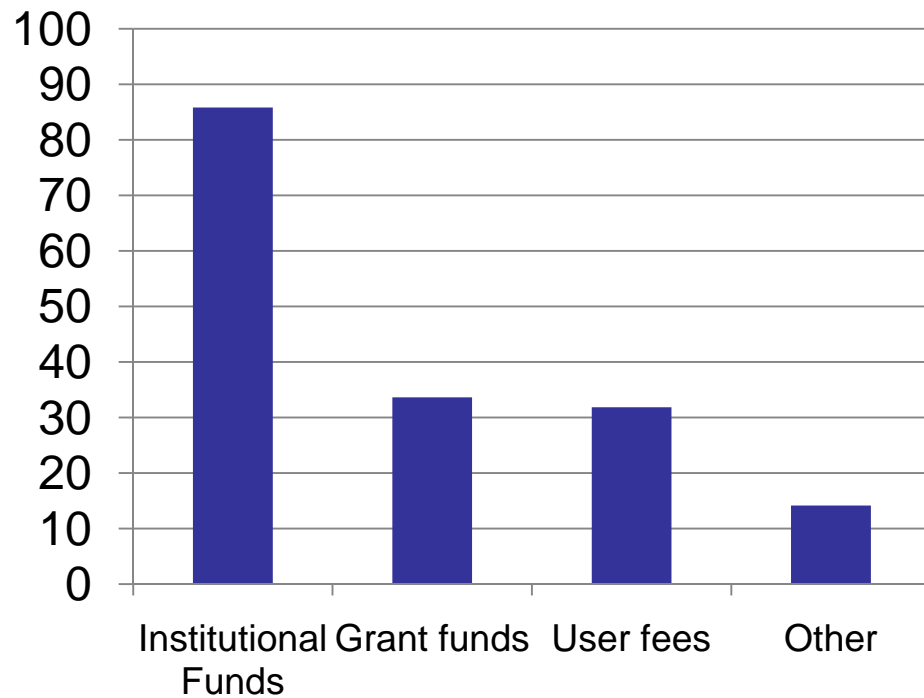


Overall contribution to funding personnel

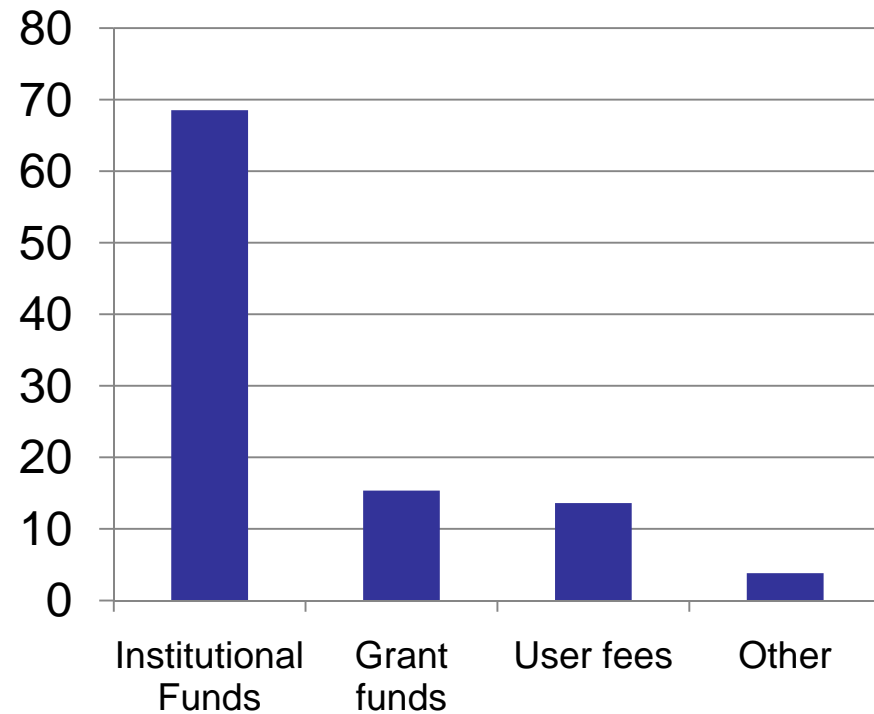


How is the Director Funded?

Percentage of facilities using each type of funding

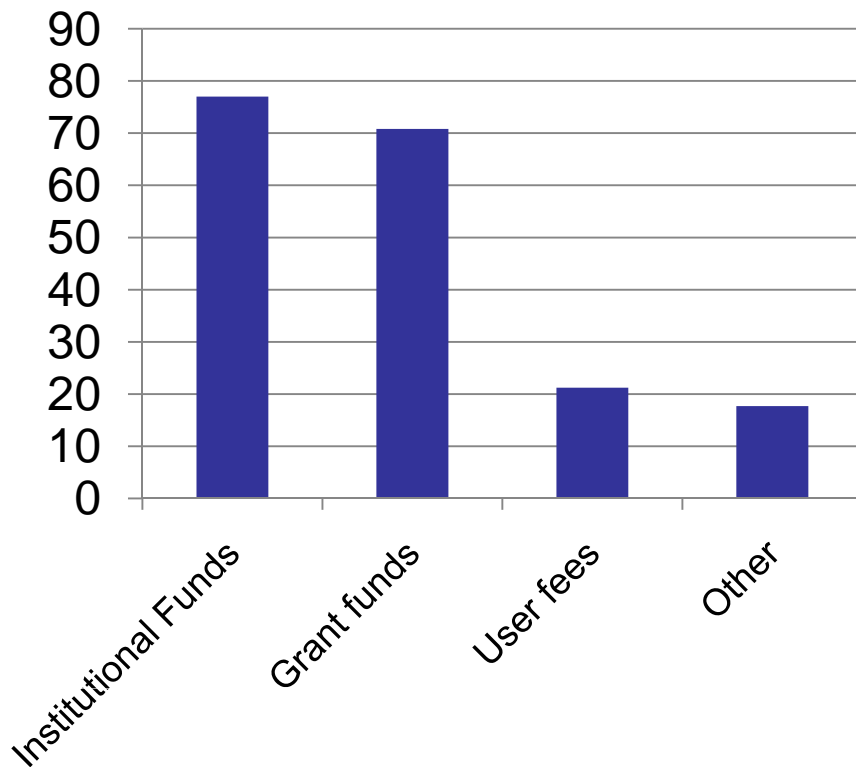


Overall contribution to funding the director

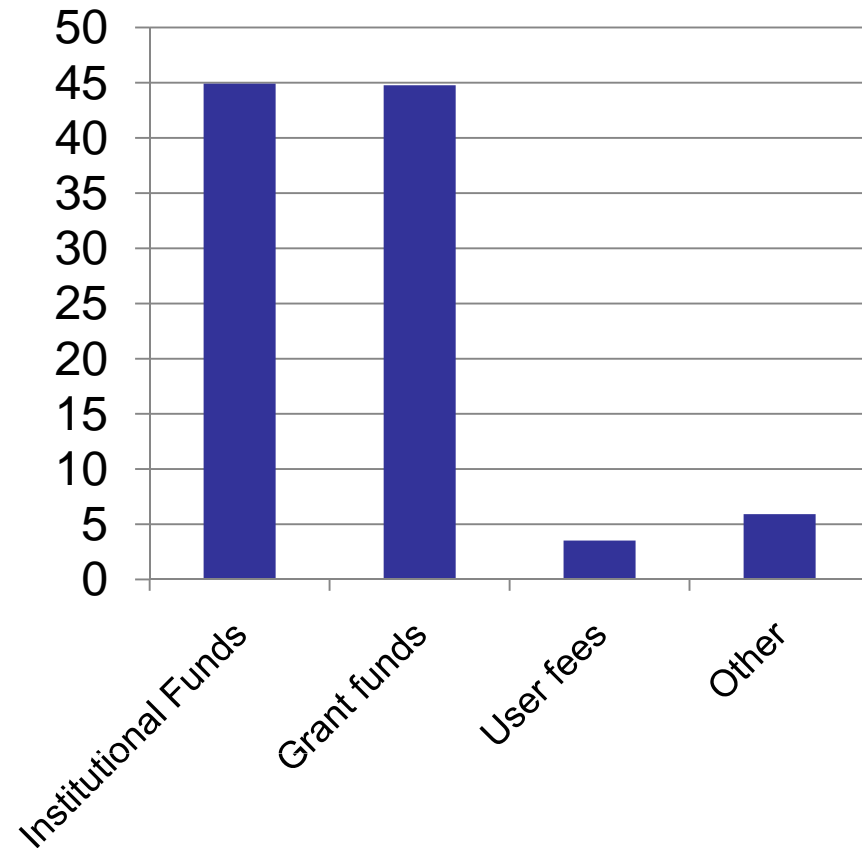


How is Instrumentation Funded?

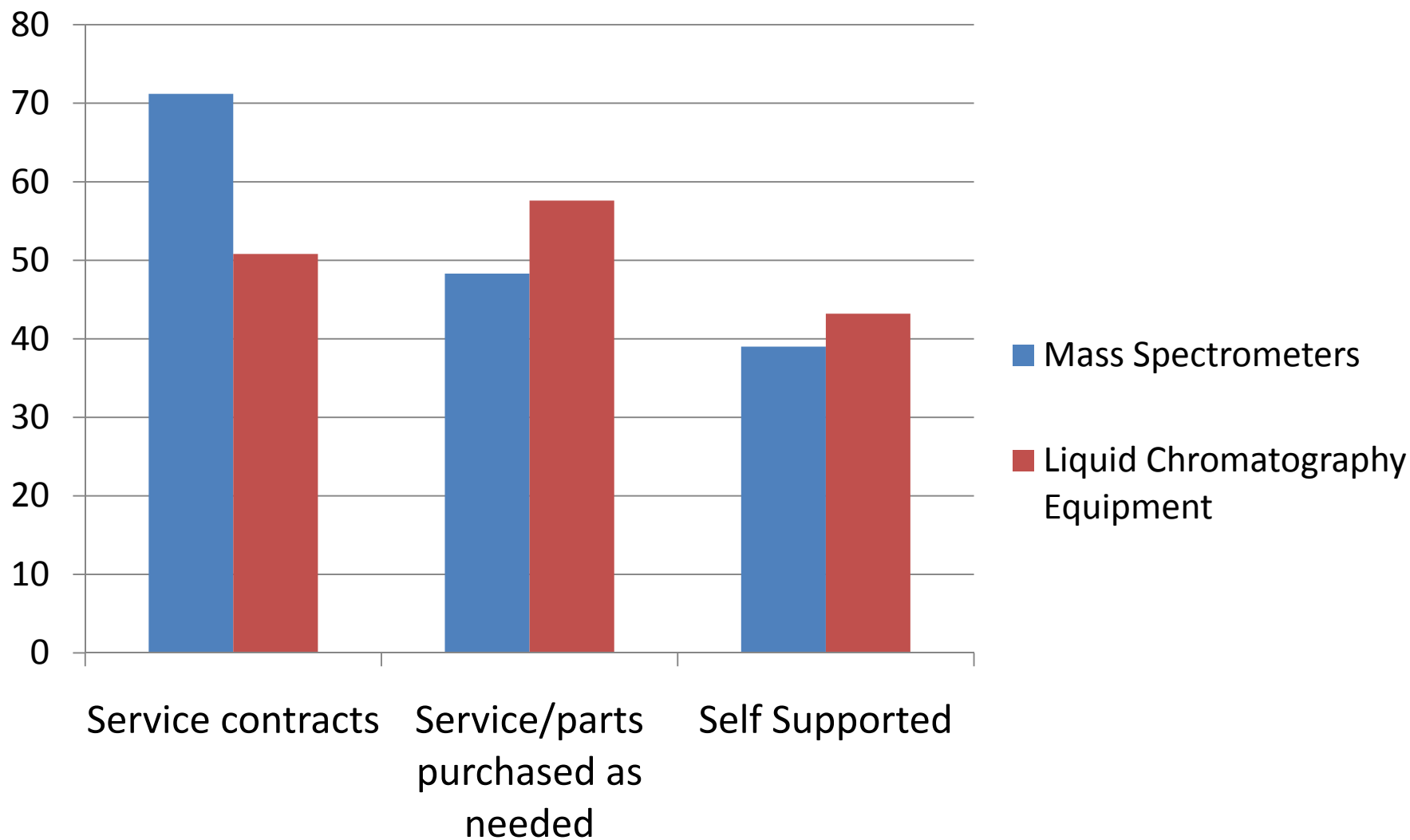
Percentage of facilities using each type of funding



Overall contribution to funding instrumentation

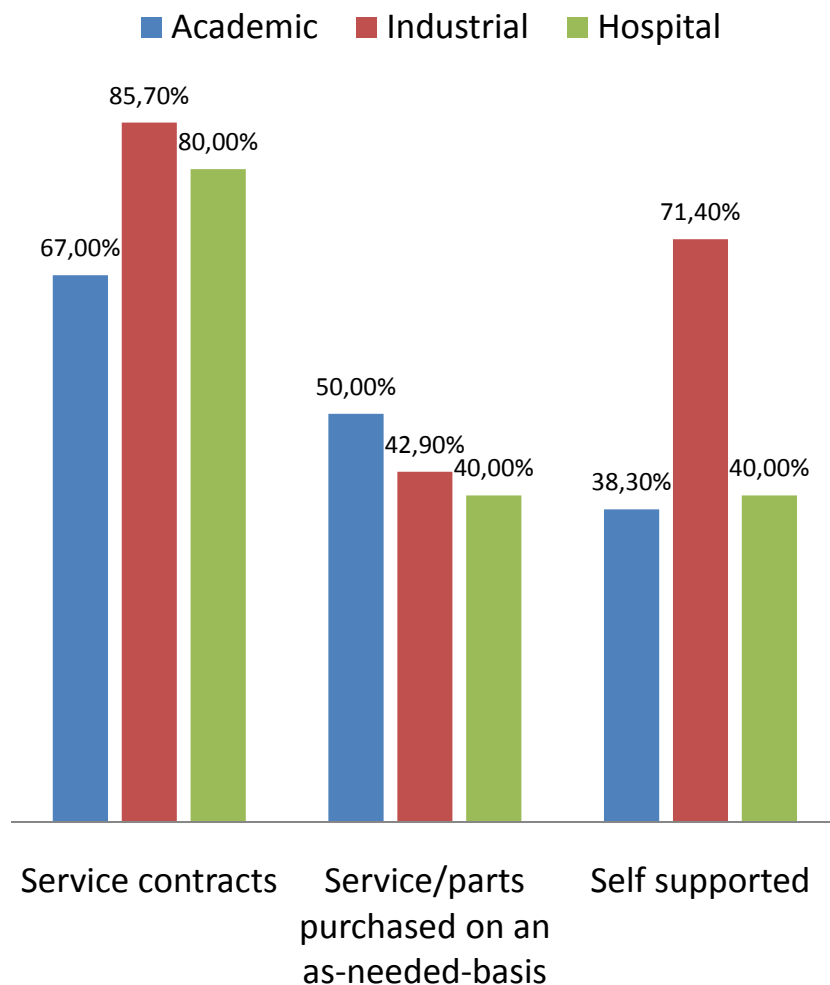


How do you Manage Maintenance for your most used Instruments?

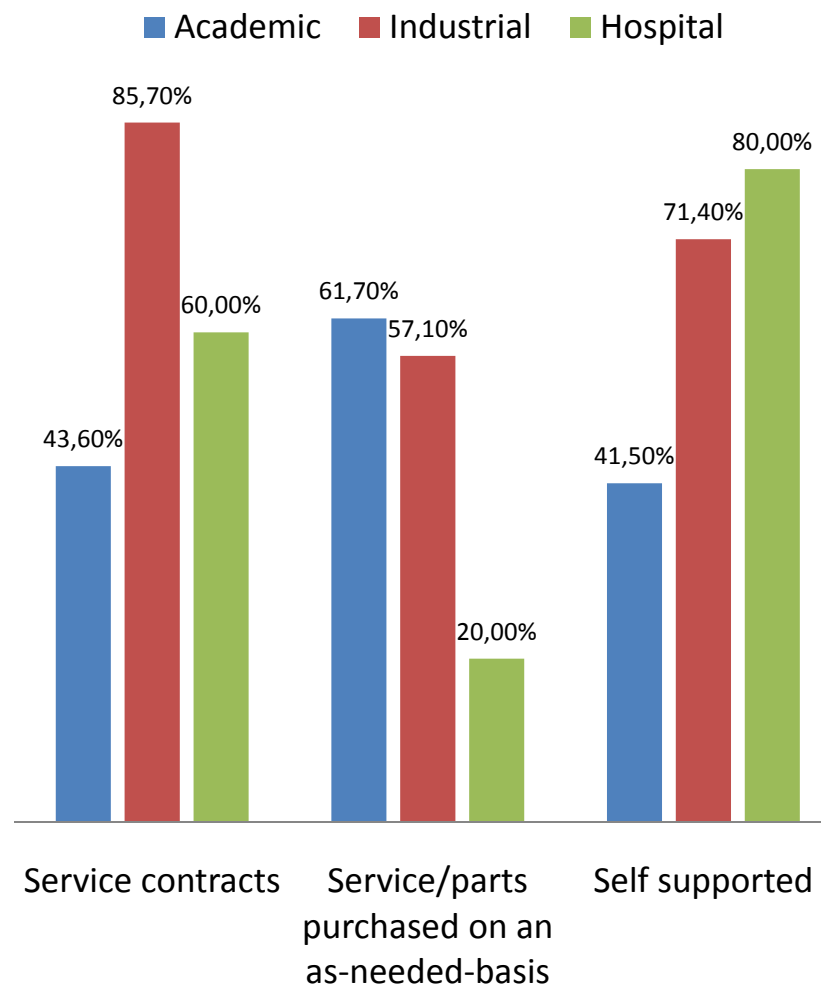


How do you Manage Maintenance for your most used Instruments?

Mass Spectrometers

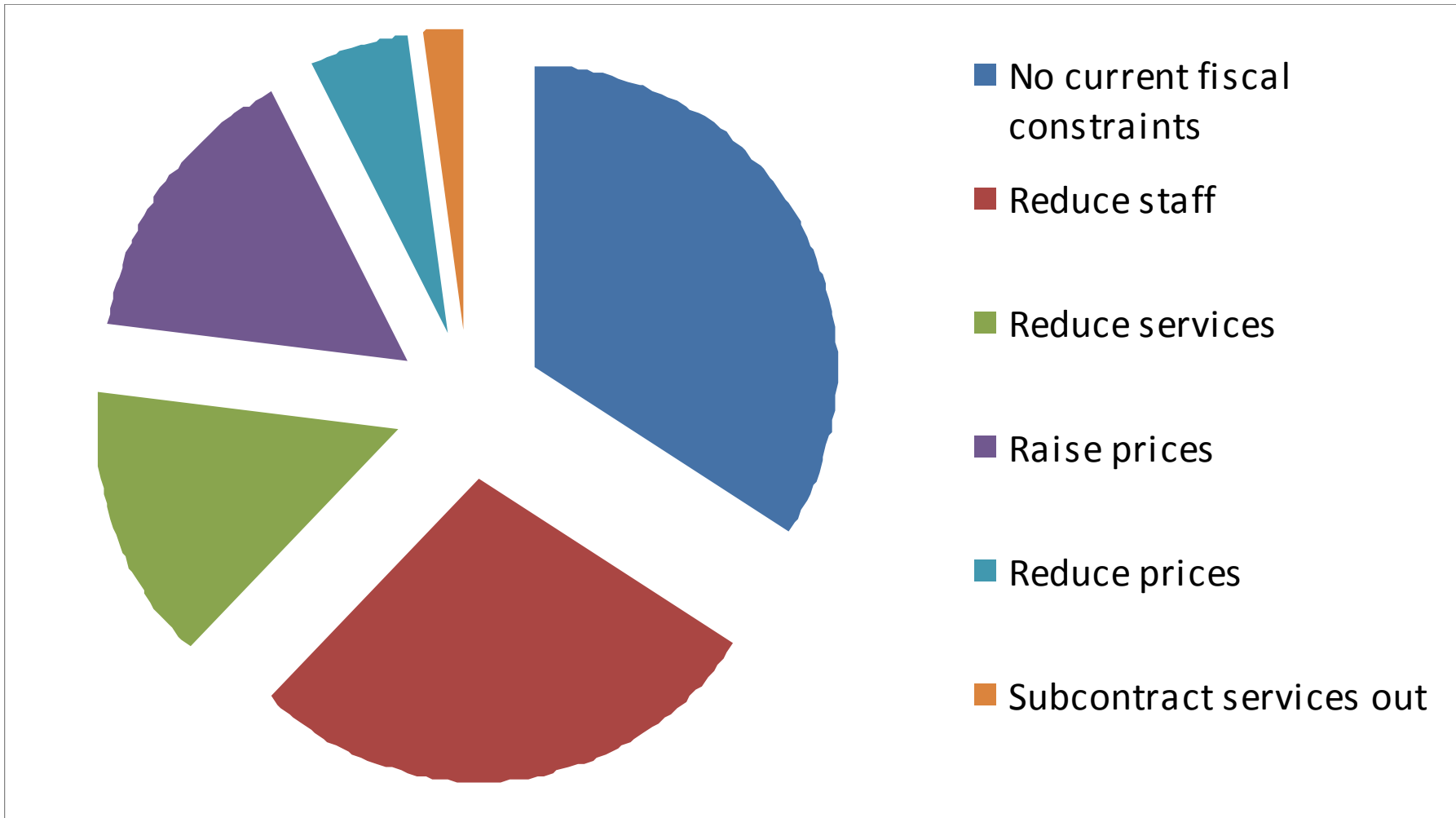


Liquid Chromatography Equip.

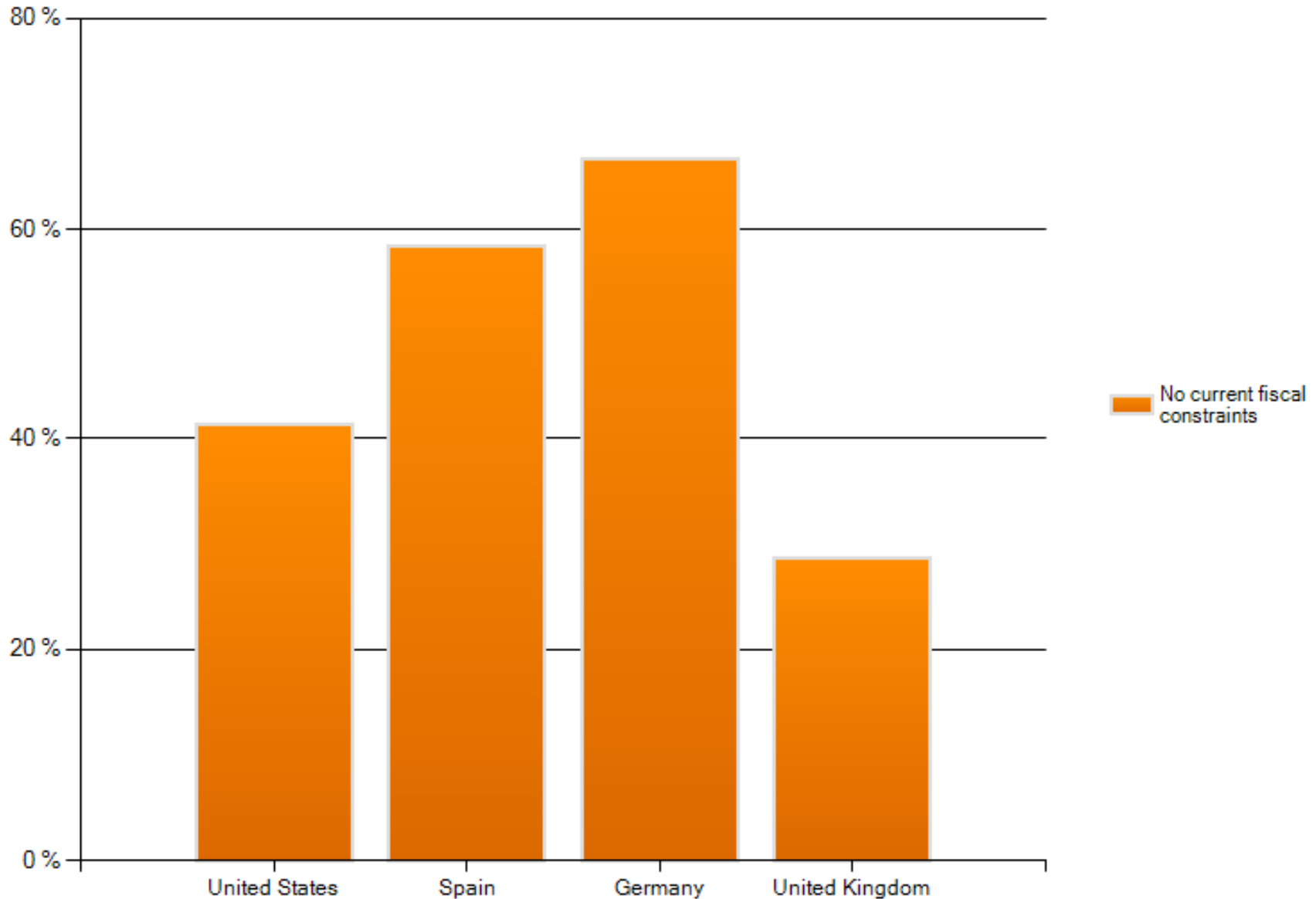


How do you deal with Fiscal Constraints?

PRG2011



Labs in Germany and Spain more likely to report “no fiscal constraints”

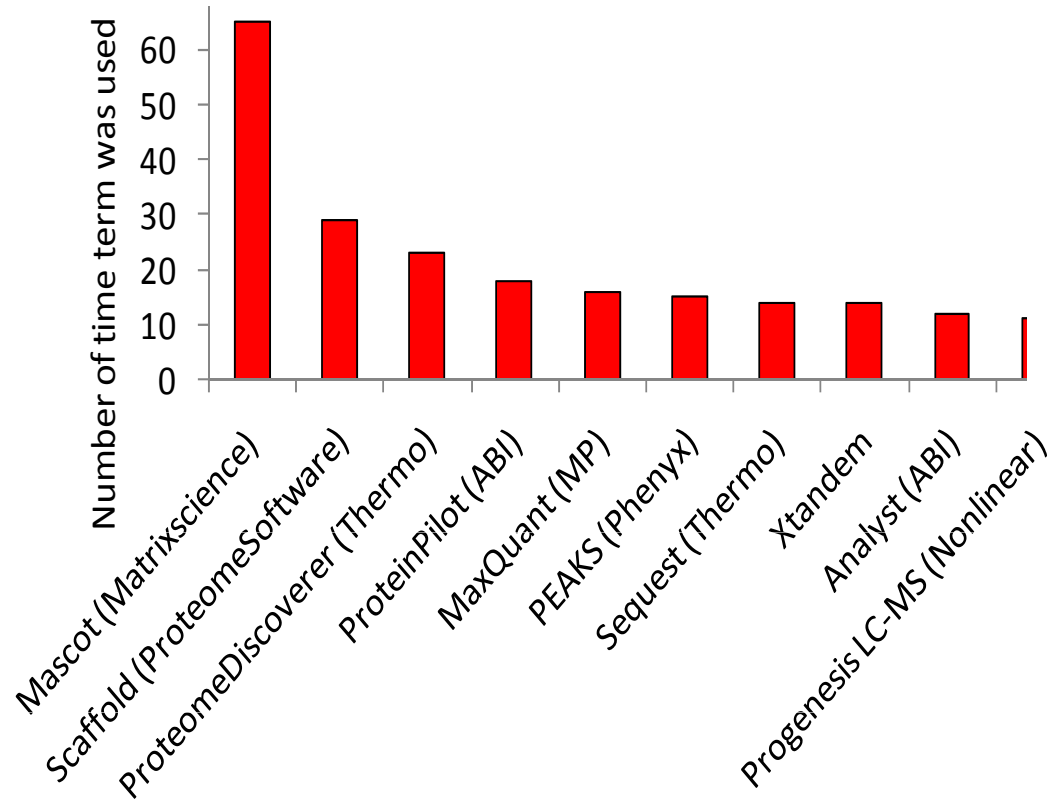


Academic vs. Industry Labs

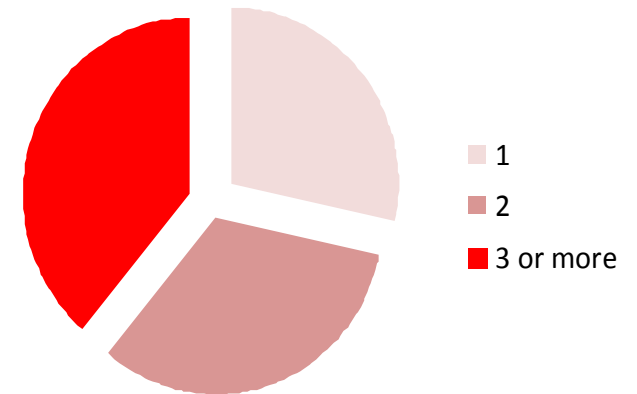
- Industry labs are more likely to have funding come from one source (user fees or institute, not both).
- Industry labs had, on average, twice as many personnel (12 vs 6) as academic labs.
- Industry labs were more likely to lease instruments (14% vs 7%).
- Industry labs were more likely to have service contracts on some instruments (85% vs 63%) but also more likely to report a proportion of instrumentation was self-supported (71% vs 38%).
- Industry labs were more likely to coordinate operations with other cores to control costs (83% vs 23%).

Software

10 most used Software

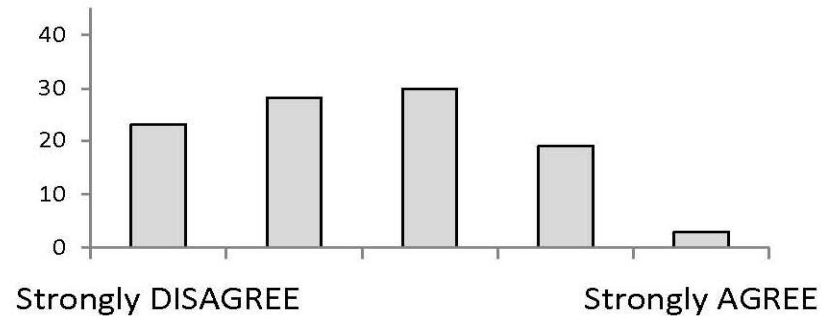


Number of search algorithms used in a facility

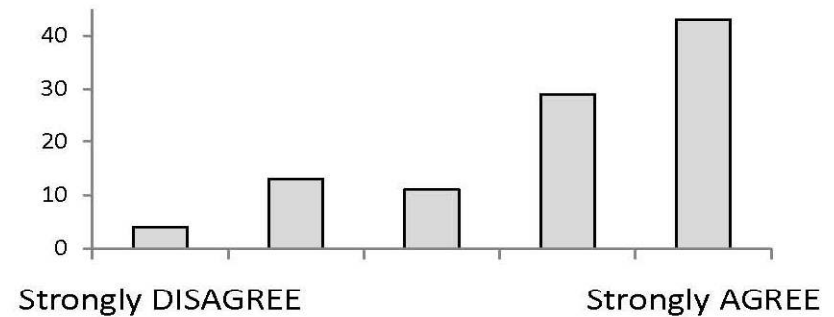


Software

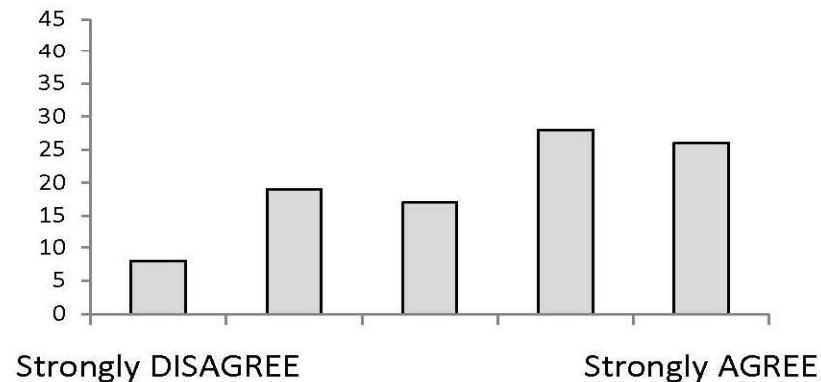
Vendor supplied software is sufficient to complete most of the analyses we do.



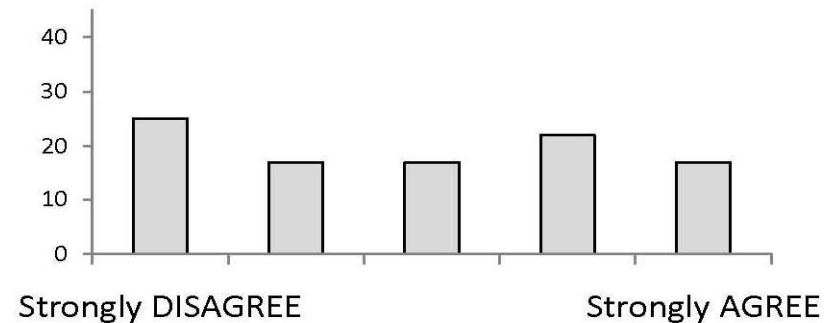
Third party software is necessary for us to accomplish our mission



We use open source software as part of our analytical pipeline

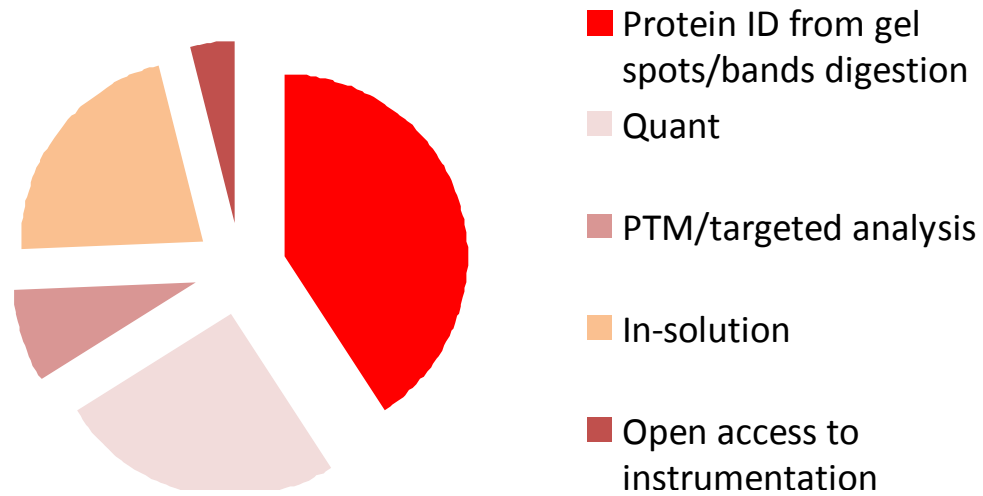


We engage in custom software development for specific projects

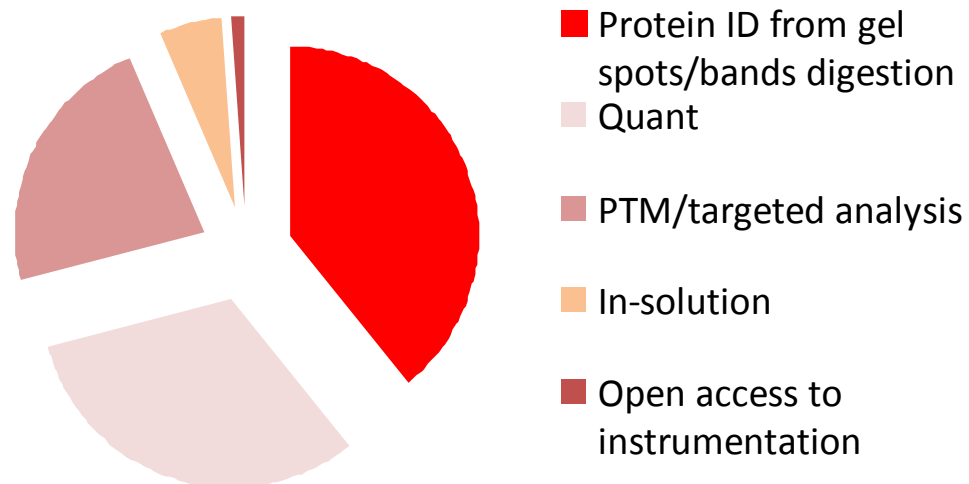


Services

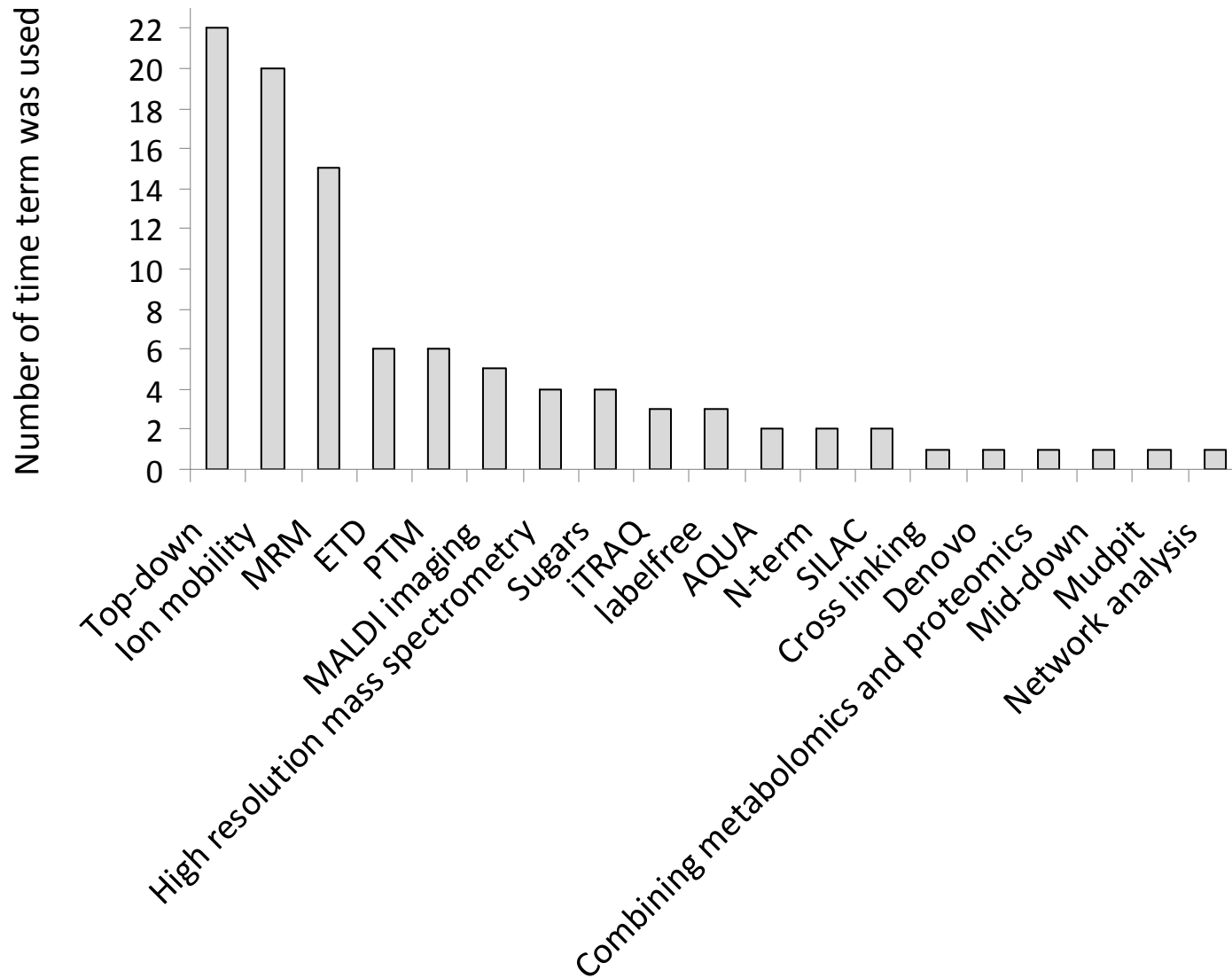
As seen from Unit



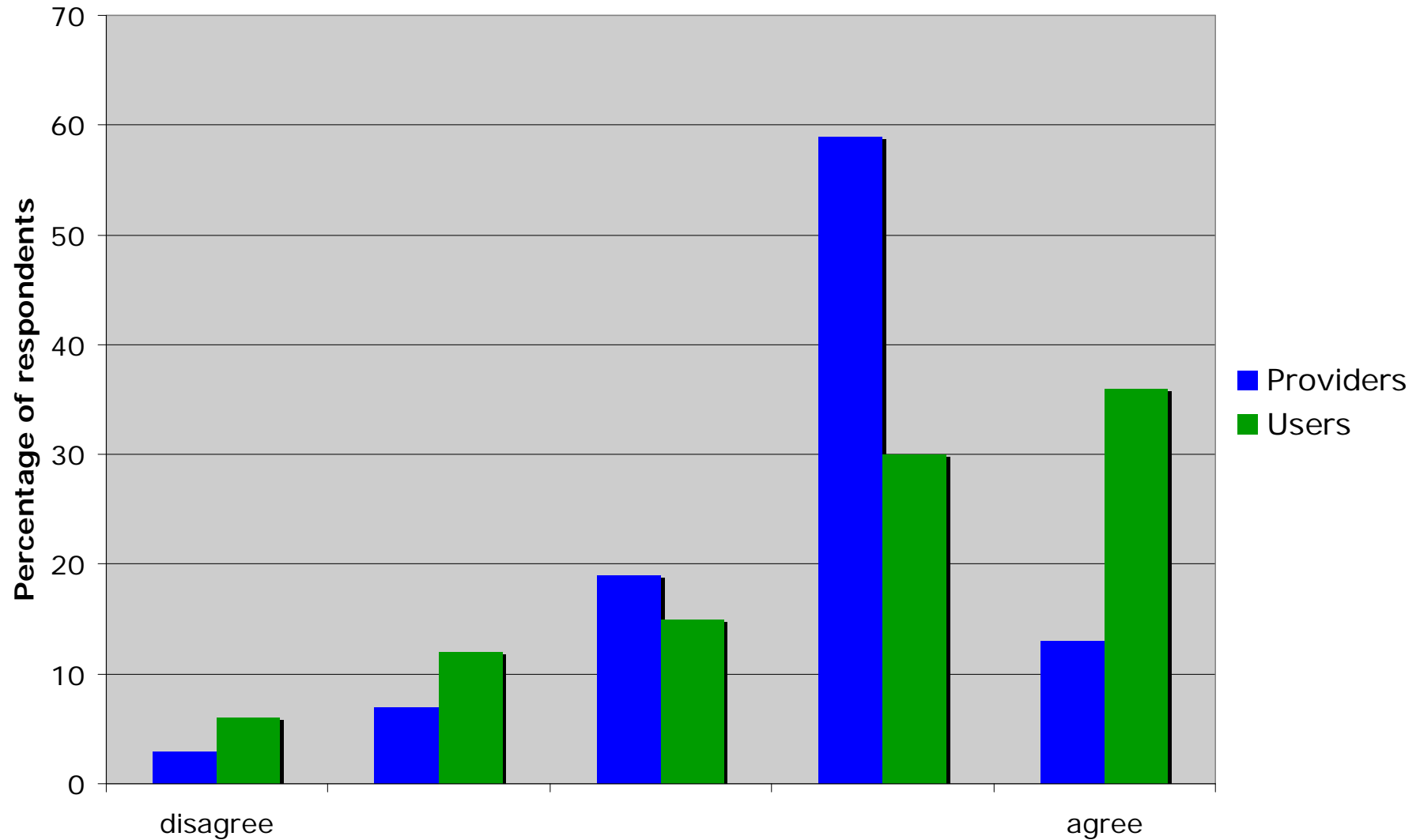
As seen from user

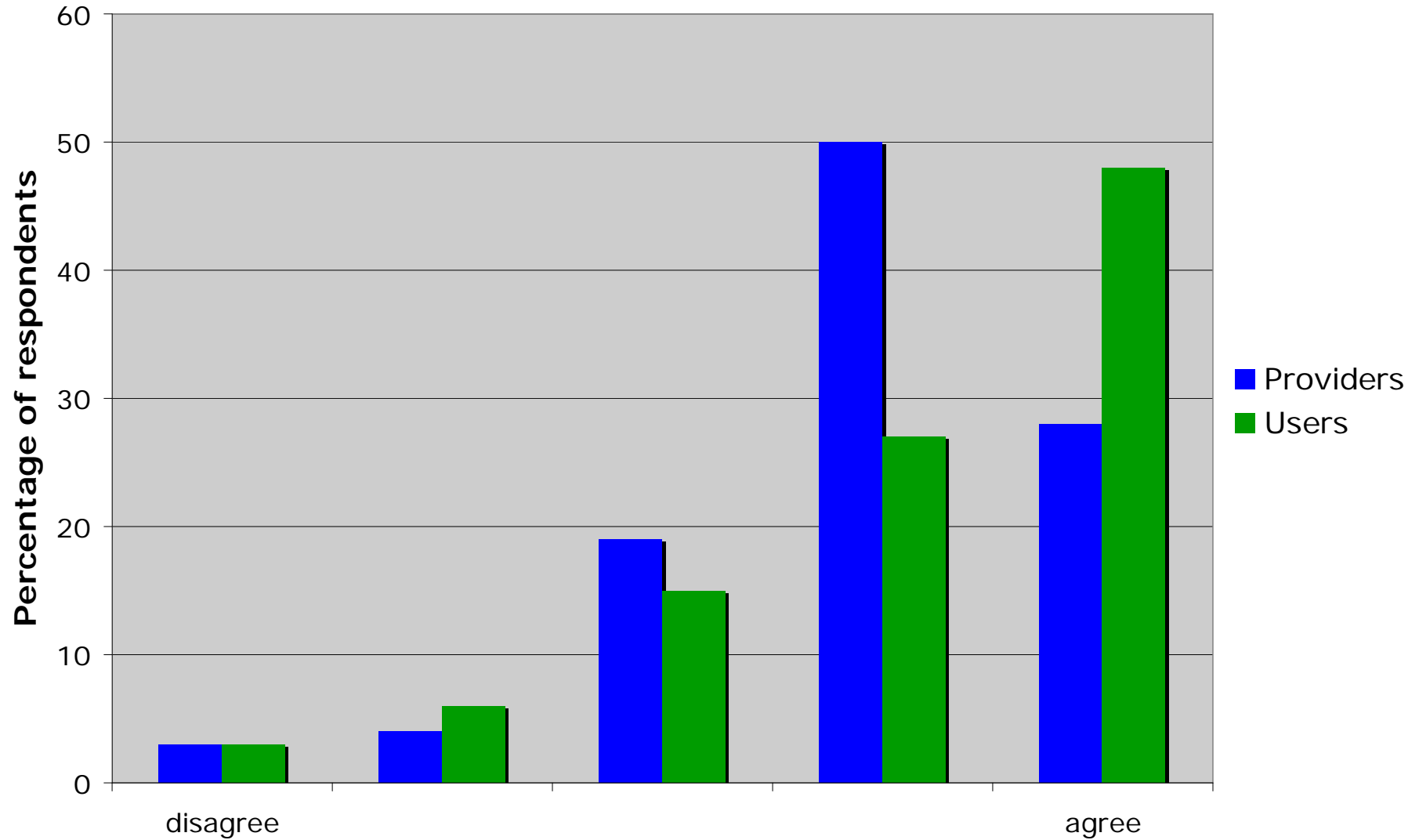


Technology Wish List



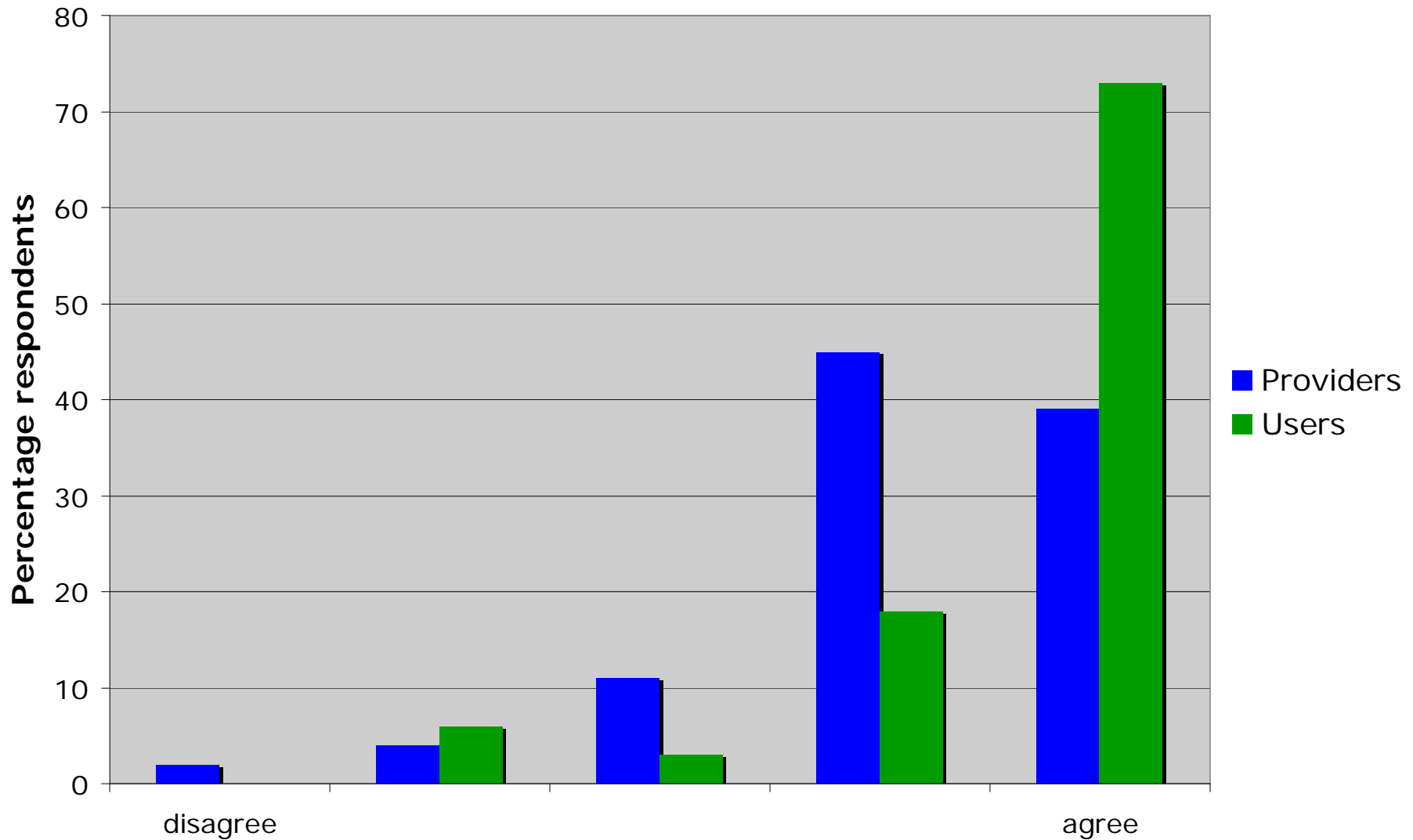
Satisfaction with Timeliness



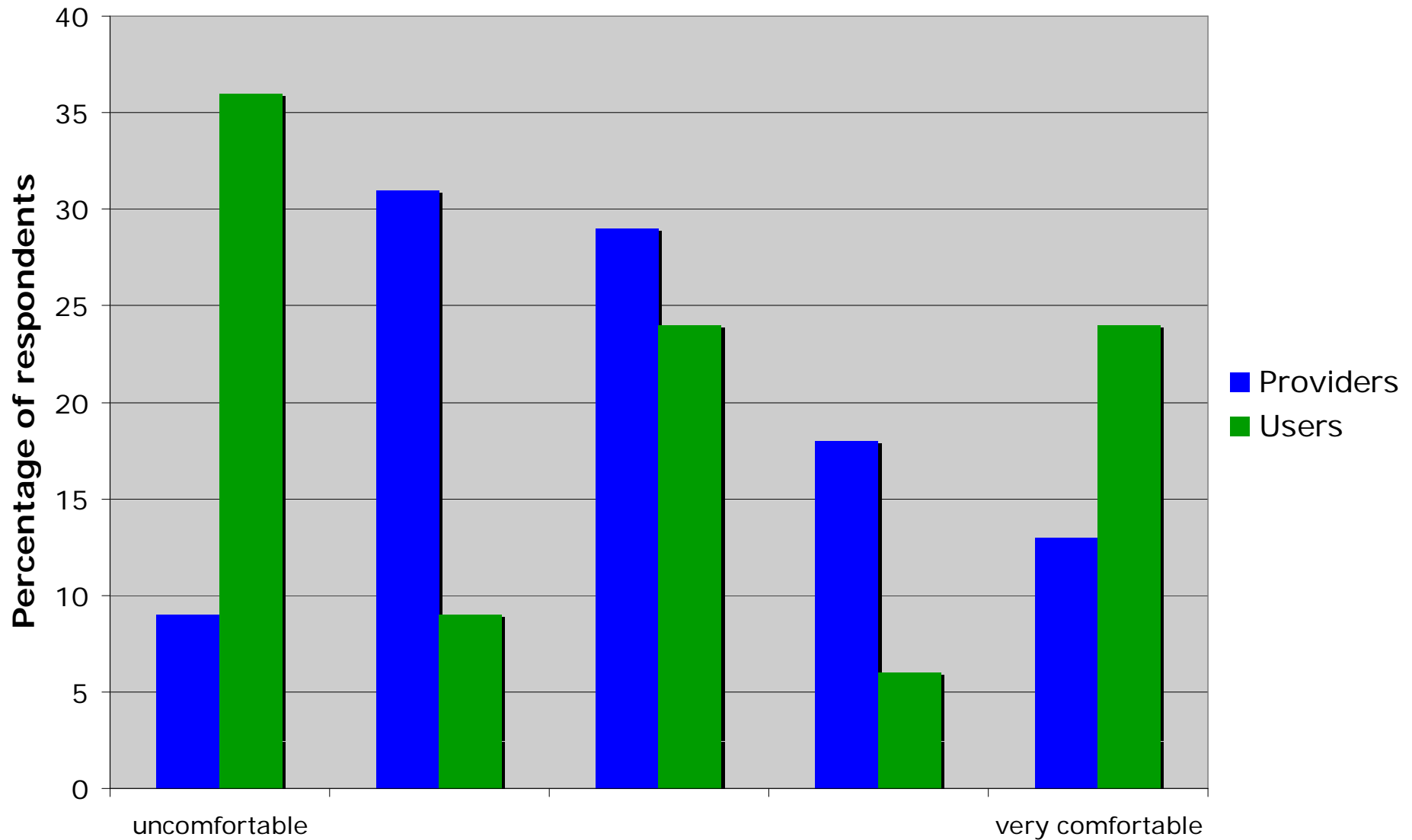


Proteomics core consults extensively

PRG2011

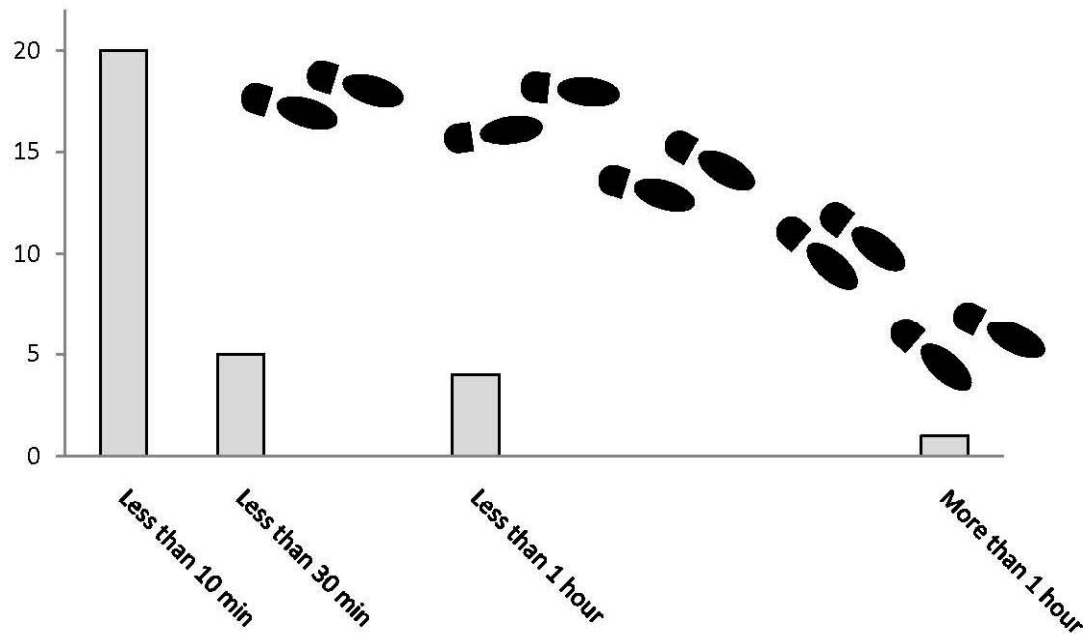


Comfort in mass spec data analysis

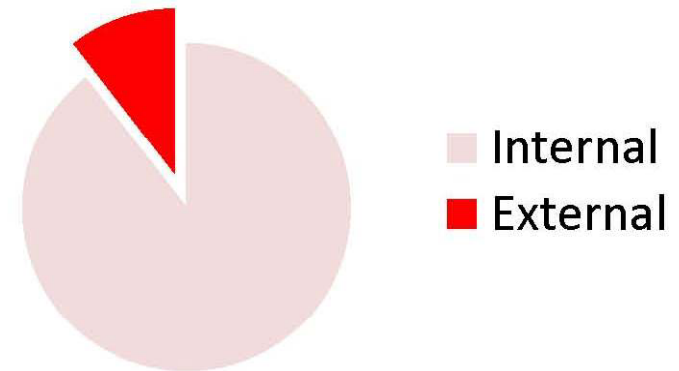


Local Labs are CLOSE!

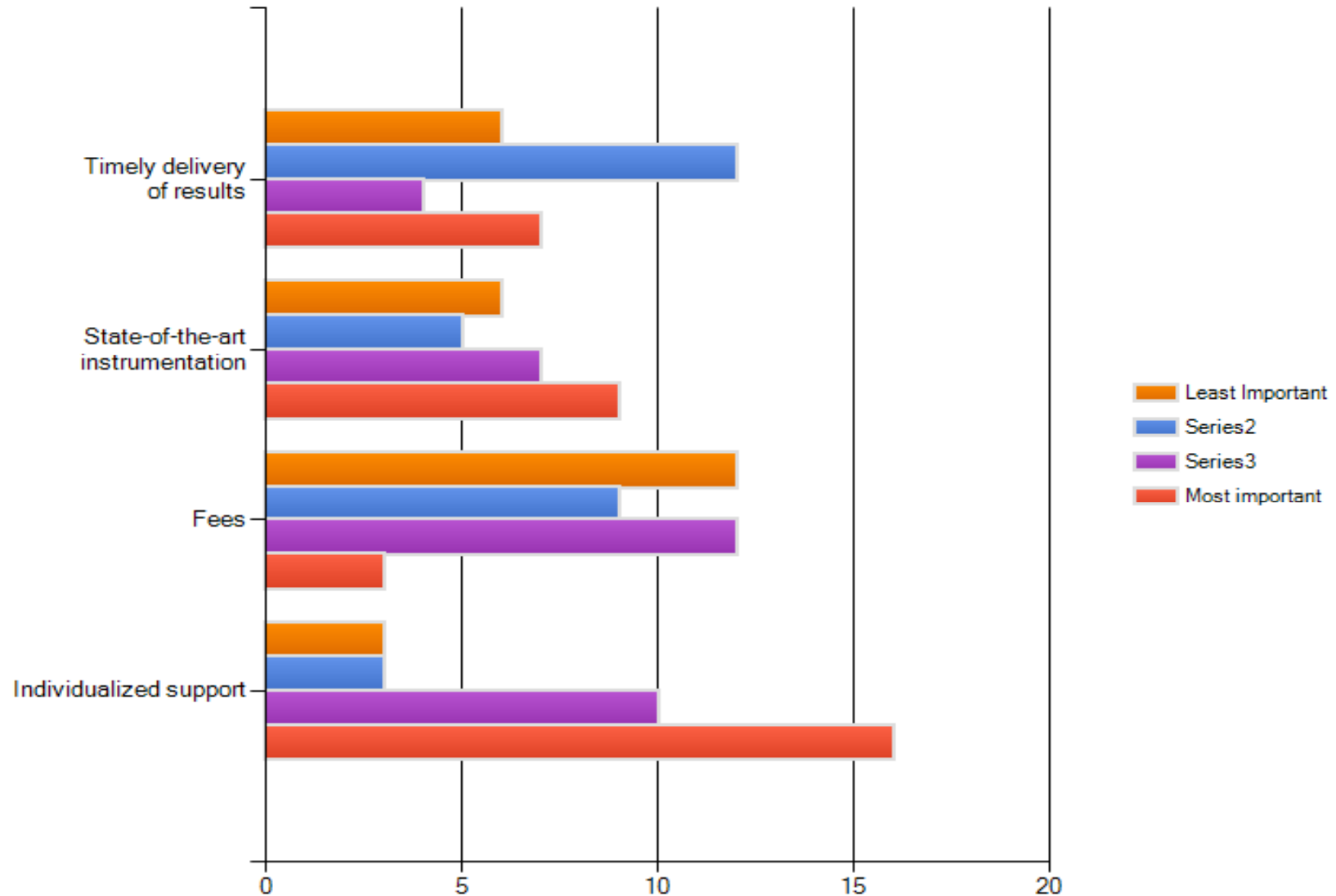
If you deliver your samples for analysis in-person, how long does it take to reach the proteomics service facility?



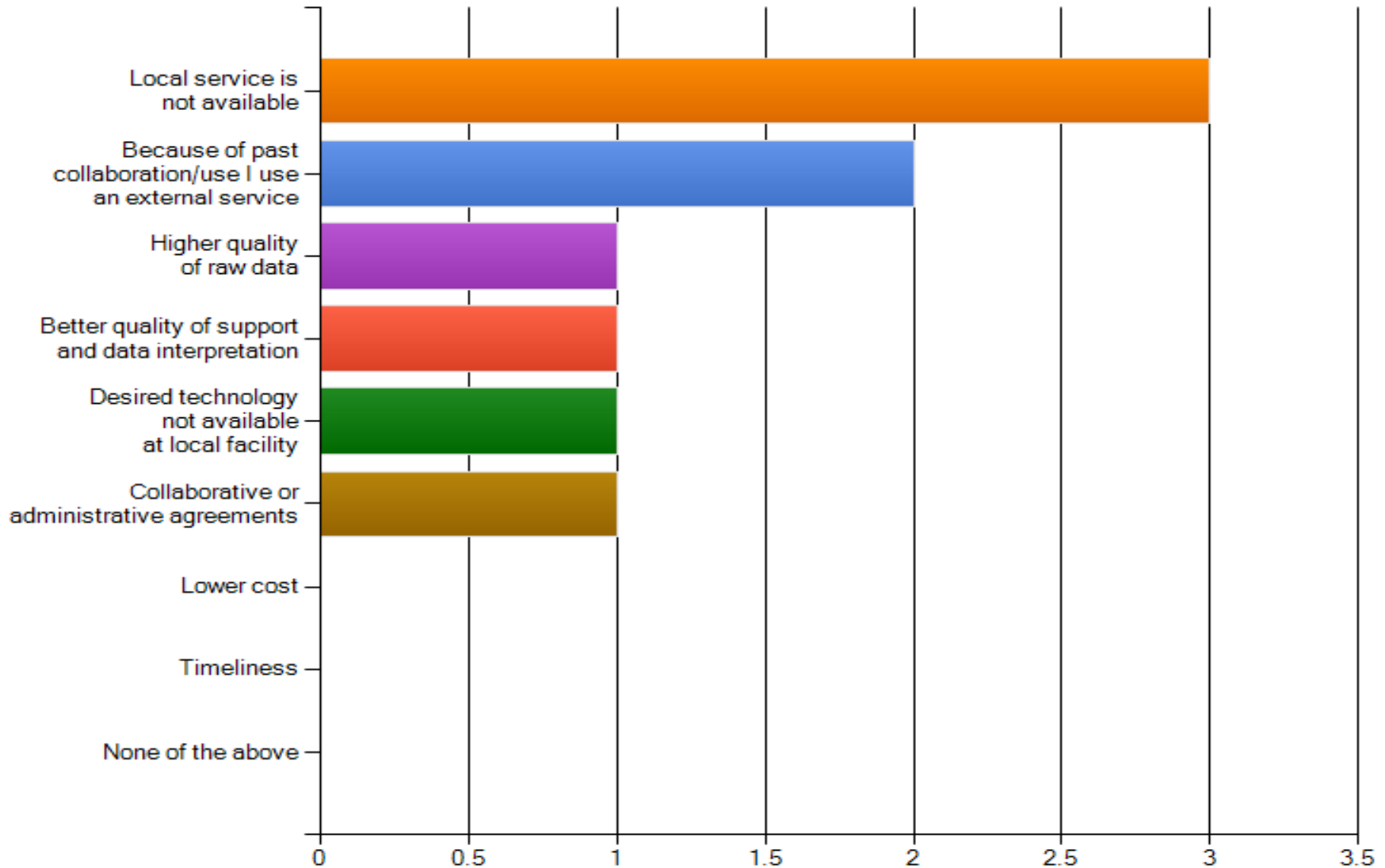
The proteomics lab that you mostly use is:



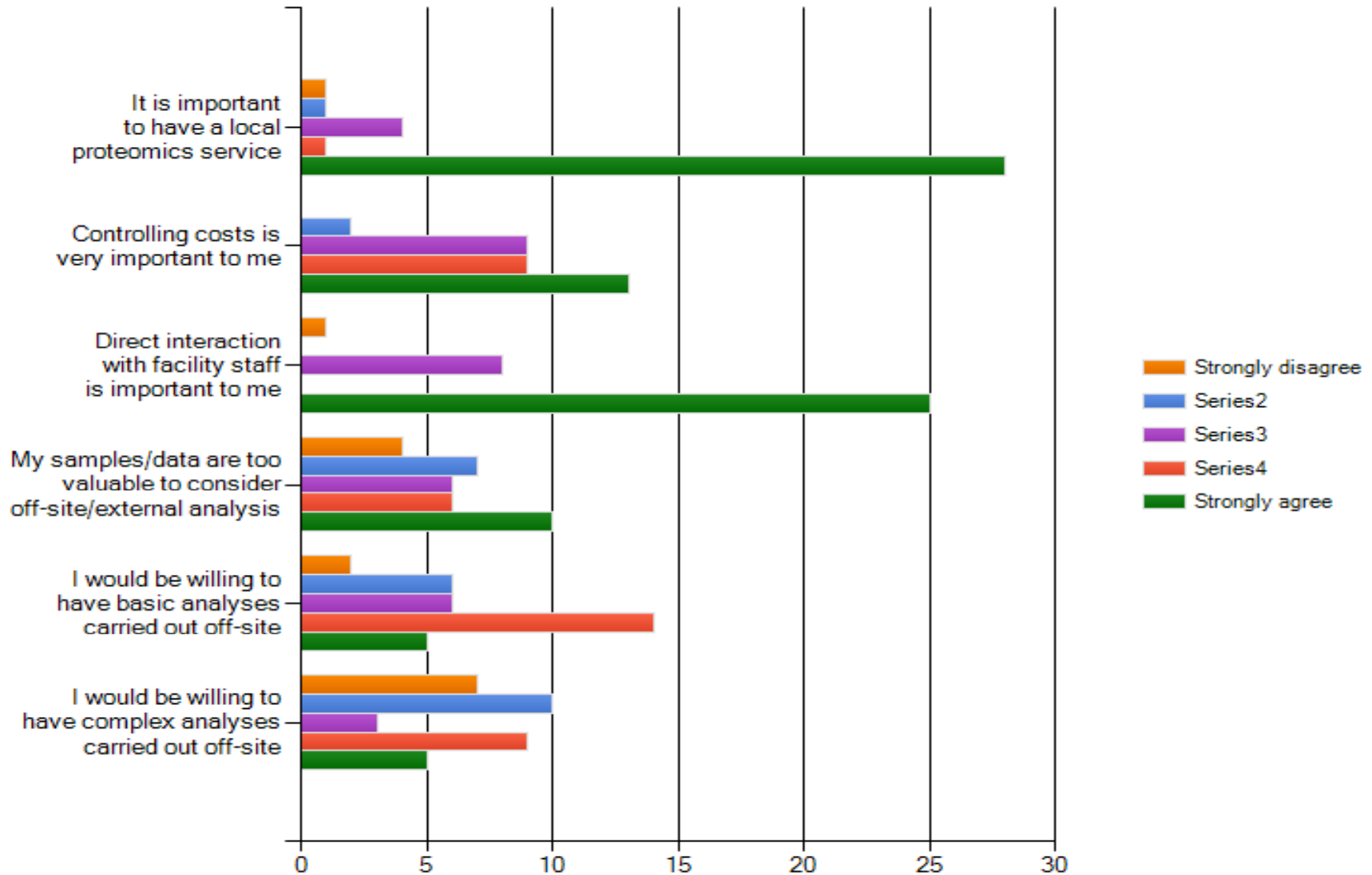
Important Factors in Lab Choice



Why not use a Local Lab?



Local vs. External Lab



Selected Results

- The largest fraction of respondents were academics. The US, Spain, Germany and the UK accounted for about $\frac{3}{4}$ of the responders.
- Although some labs have rather old instruments (~20 yrs!) the median oldest instrument age is 7 yrs, while most labs have bought a new instrument within the last 3 or 4 years.
- The primary service offered remains basic protein identification, but high on the wish-list for new services are top-down, ion-mobility and SRM.
- Mascot is the most-used search engine, but most labs employ more than one.
- Internal facilities are hugely preferred, and cost is low on the factors list, communication and local support are high.



The one question **EVERYBODY** answered!

PRG2011

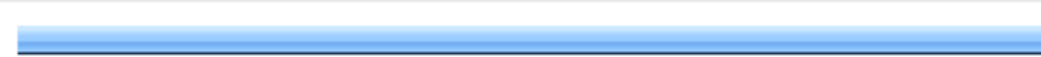

ABRF's PRG survey 2011



1. Are you an ABRF (Association of Biomolecular Resource Facilities, www.abrf.org) member?

| | | Response Percent | Response Count |
|-----|--|-------------------|----------------|
| Yes | | 35.1% | 85 |
| No | | 64.5% | 157 |
| | | answered question | 242 |
| | | skipped question | 0 |

If not, why not?

| 38. Are you aware of ABRF (Association of Biomolecular Resource Facilities, www.abrf.org)? | | | |
|---|--|------------------|----------------|
| | | Response Percent | Response Count |
| Yes |  | 93.1% | 94 |
| No |  | 6.9% | 7 |
| answered question | | | 101 |
| skipped question | | | 141 |



PRG2011

ABRF and PRG Questions

| | <u>Yes</u> |
|--------------------------------------|----------------------|
| Attended an ABRF meeting? | 42% |
| Aware of Research Groups? | 72% |
| Does PRG make useful contributions? | 71% what is PRG? 26% |
| PRG studies useful for benchmarking? | 79% |
| Requested PRG samples? | 57% |
| Completed Study? | 71% |
| Should xPRGs conduct joint studies? | 46% no opinion 44% |

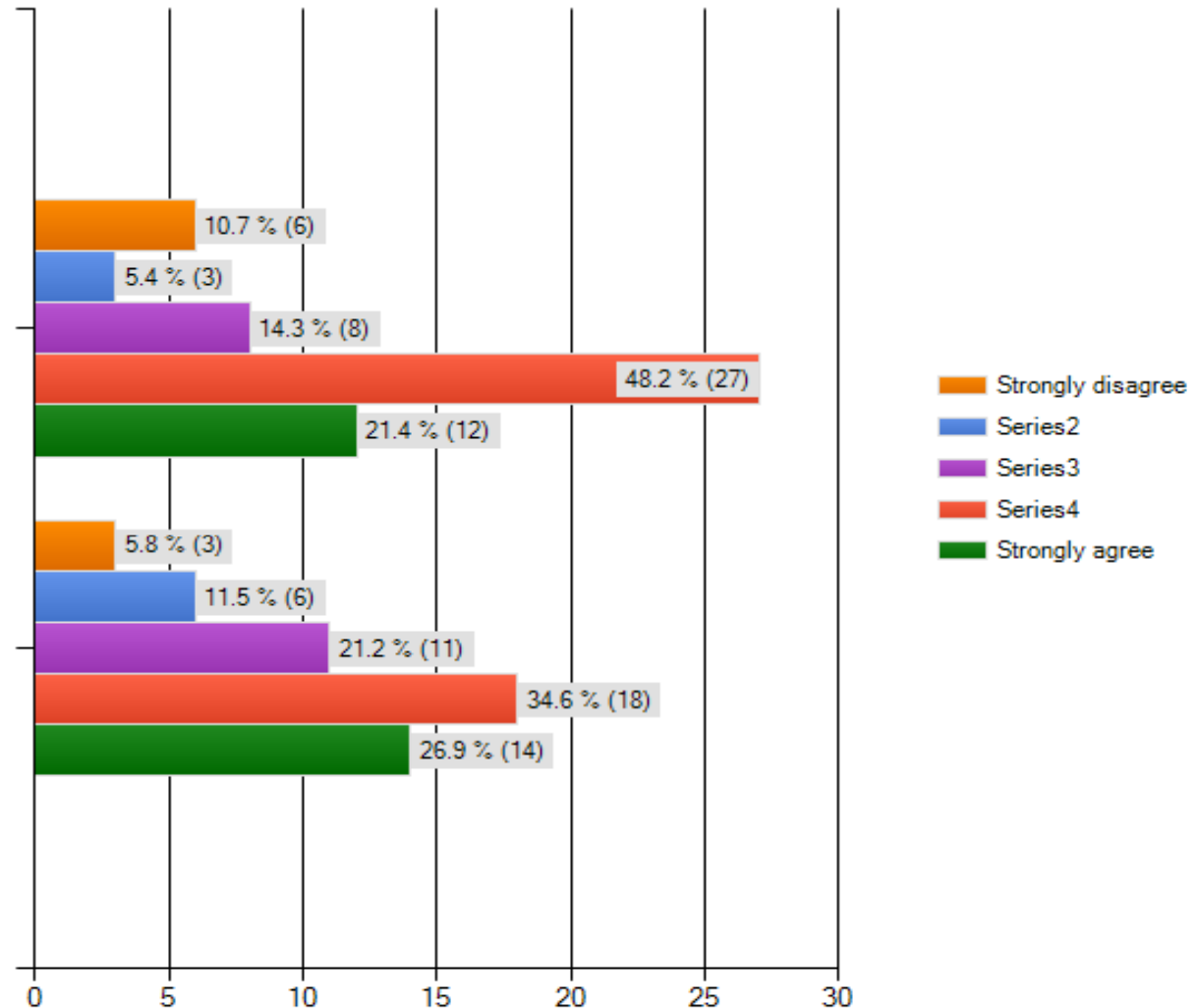
Most Attendees get Useful Info at the Meeting

PRG2011

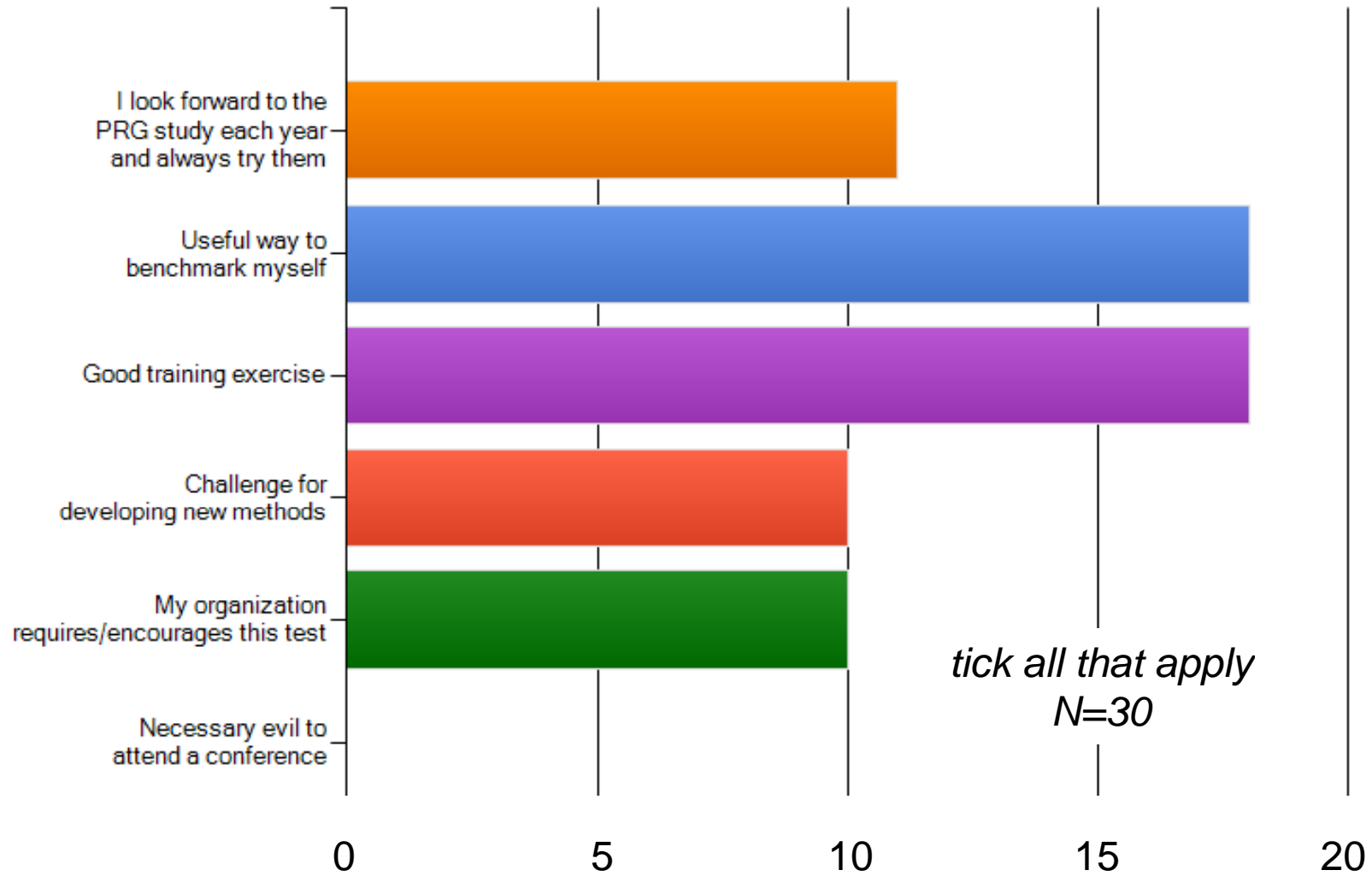
Please describe your ABRF meeting experience

At the annual ABRF meeting, I get useful information which helps my research.

At the annual ABRF meeting, I get useful information which helps me manage the operation of my core facility.



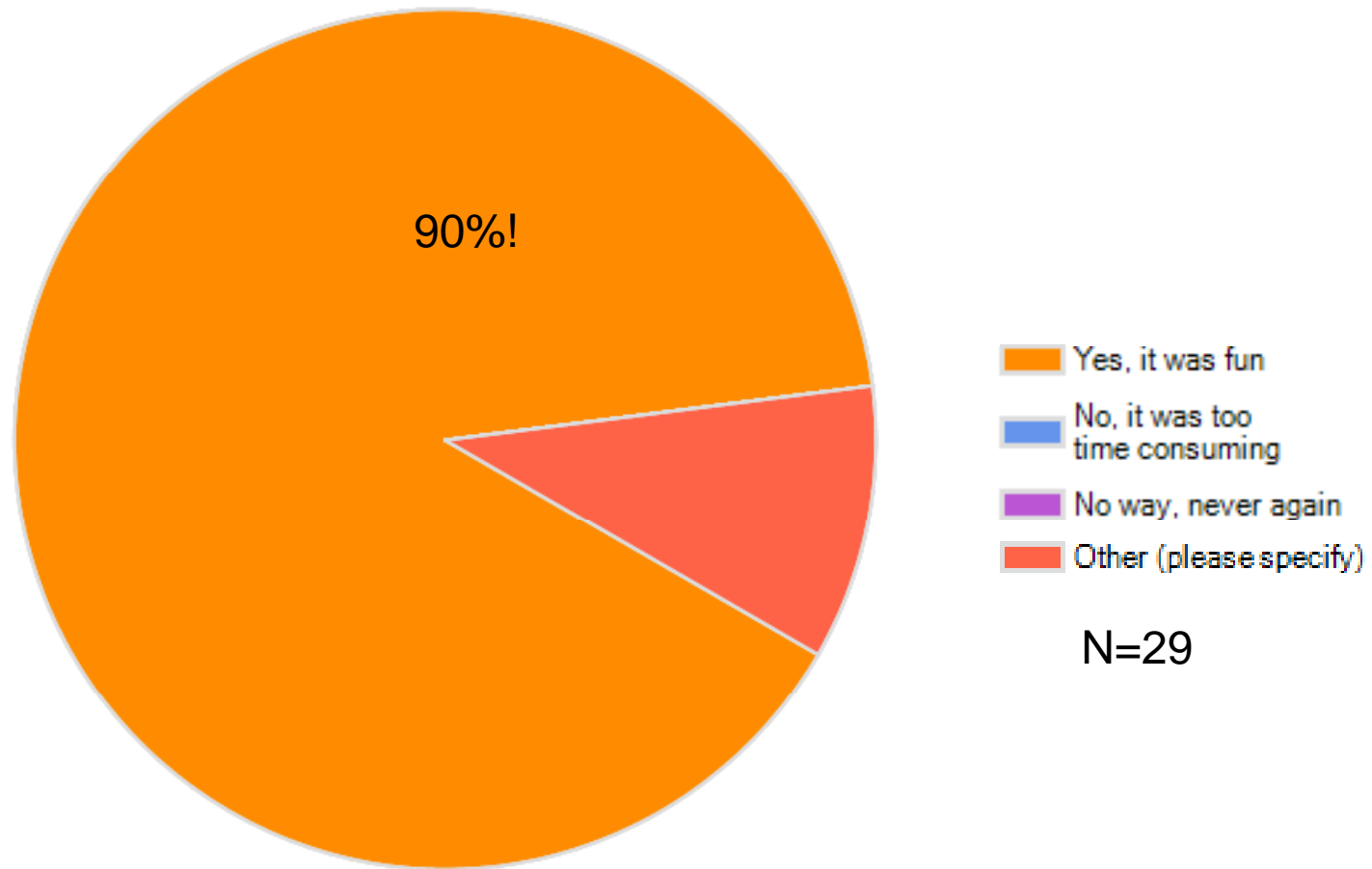
Motivation (from PRG2010)



tick all that apply
N=30

Do It Again? (from PRG2010)

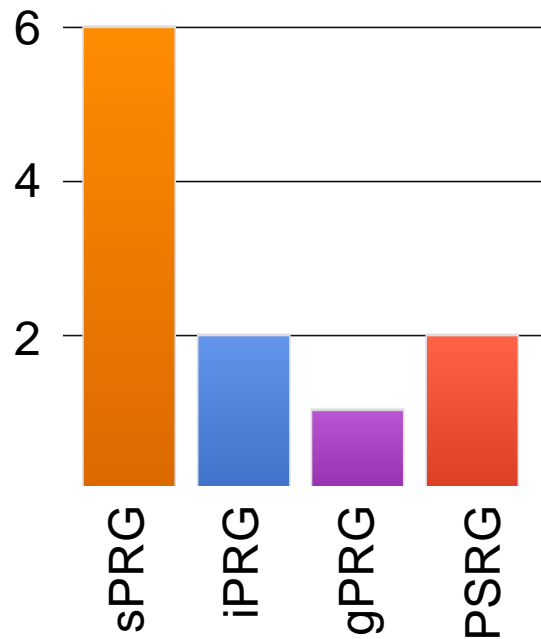
Would you try and do this type of experiment again?



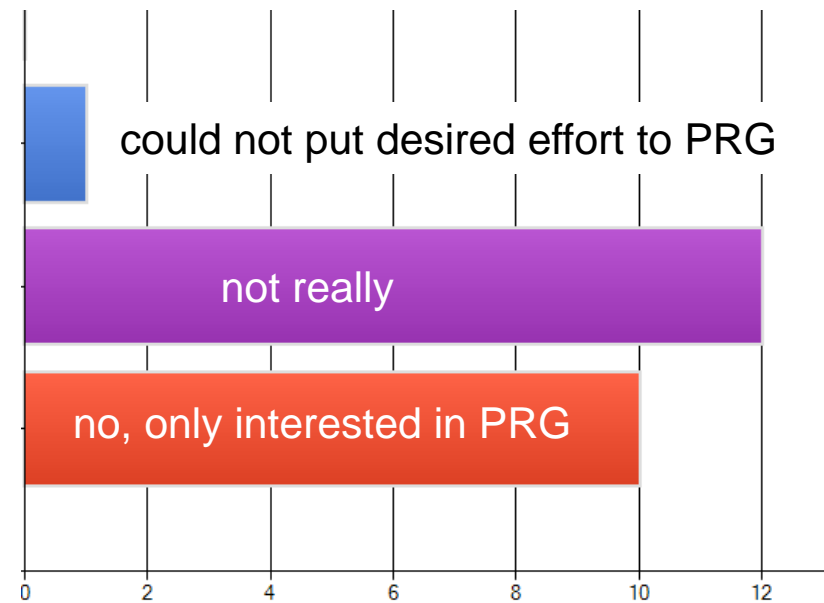
Other RG Studies (from PRG2010)

PRG2011

other RG participation
N=10

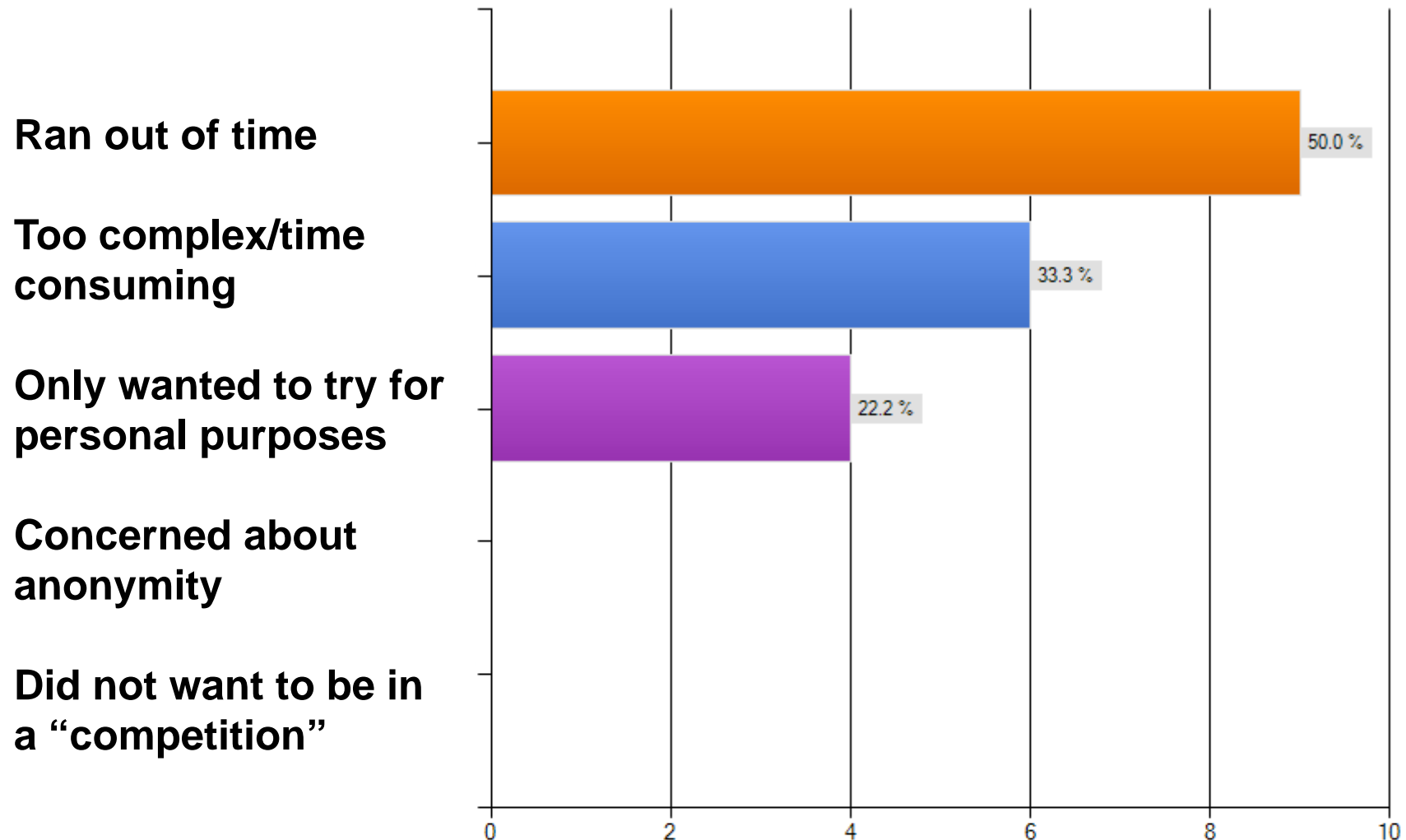


impact on PRG effort?
N=23



Time and Complexity as Deterrents (from PRG2010)

Please tell us why you did not complete the study.





If you did not complete or perform the study (from PRG2010), why not?

PRG2011



DOH! I totally forgot!! (0)

I really thought we were going to get a t-shirt or something ... (0)

Conclusions

The 2011 PRG survey results presented a surprisingly upbeat assessment of the relationship between proteomics service laboratories and their users. By in large, users desire a reasonably staffed local lab that can provide extensive consultation and quality data throughout the life of a project and agree that their needs are being met. Fortunately, local service labs assess their own performance favorably and report being highly involved in consulting, training and outreach. Of particular interest, few service labs reported significant fiscal constraints and users consistently ranked the costs of working with a service lab as being much less important to their satisfaction than the ability to obtain essential data from a local lab. This indicates that the value proposition of a core lab lies in its ability to provide high quality data and personal attention to users. We feel that the results reflect favorably on the collegial relationships that have been established between users and providers and should be viewed as a strong, positive commentary on the value of proteomics research facilities.

Acknowledgements

The Proteomics Research Group (PRG) gratefully acknowledges the ABRF and the Executive Board for their generous support in the production of this survey. Special thanks to all the participants in this year's and previous studies.

Thank You!