

Digital Research Alliance Needs Assessment Survey: Ontario Results

Introduction

The Survey: Alliance Needs Assessment

- During its first fiscal year, the Digital Research Alliance of Canada (formerly known as NDRIO) launched a Canadian DRI needs assessment process to inform its 2022-2025 Strategic Plan
- As part of this process, the Alliance conducted a nation-wide survey that was shared with the broader Canadian research community to capture their DRI needs
- The survey was broken into three sections
 1. “Demographics” (academic and social identity)
 2. “General Use and Needs Related to DRI”
 3. “Technical DRI Needs”

The Survey: Alliance Needs Assessment

- A final report on the national needs assessment findings, including the survey, was released by the Alliance on 1 February 2022
- The report is available in the “Needs Assessment” section of the Alliance website or [directly at this link](#)

The National Survey

- Respondents were required to answer all the demographic questions (Section I) but could skip any of the questions in the other two sections
- The majority of respondents (82%) reached the end of section two but might not have answered all questions
- A minority of respondents (17%) attempted the third section
- Survey was available for 26 days beginning 5 February 2021

What Analysis Did Compute Ontario Do? Methods

- Analyzed data from Ontario-based respondents
- **Descriptive statistics** were used to summarize respondents' academic demographics (institution, discipline, role and sources of funding) as well as identity from first section of survey
- **Frequencies** were calculated for categorical variables examining general DRI needs from the second section of the survey
- Used the **Canadian Research and Development Classification (CRDC) 2020 Version 1.0** to categorize disciplines
- **Qualitative content analysis** utilized for open-ended questions



Demographic Information

Ontario Respondent Characteristics

573

Total Respondents

96.9%

of Respondents Were
University-Based

67.2%

of Respondents Were
Faculty Researchers

Social Identity Characteristics

WOMEN

38.1%

53.4%

MEN

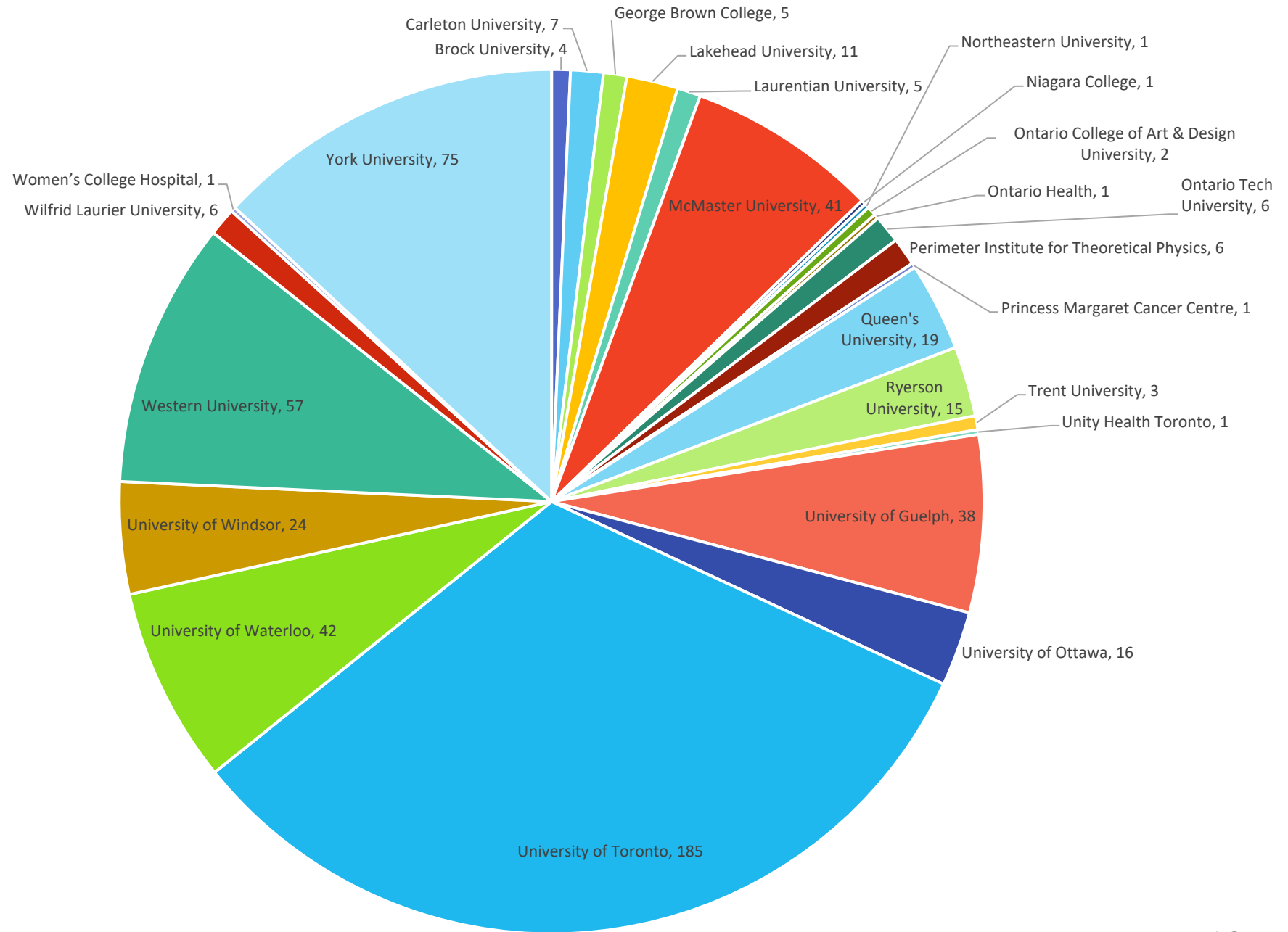
PREFER NOT TO SAY

6.8%

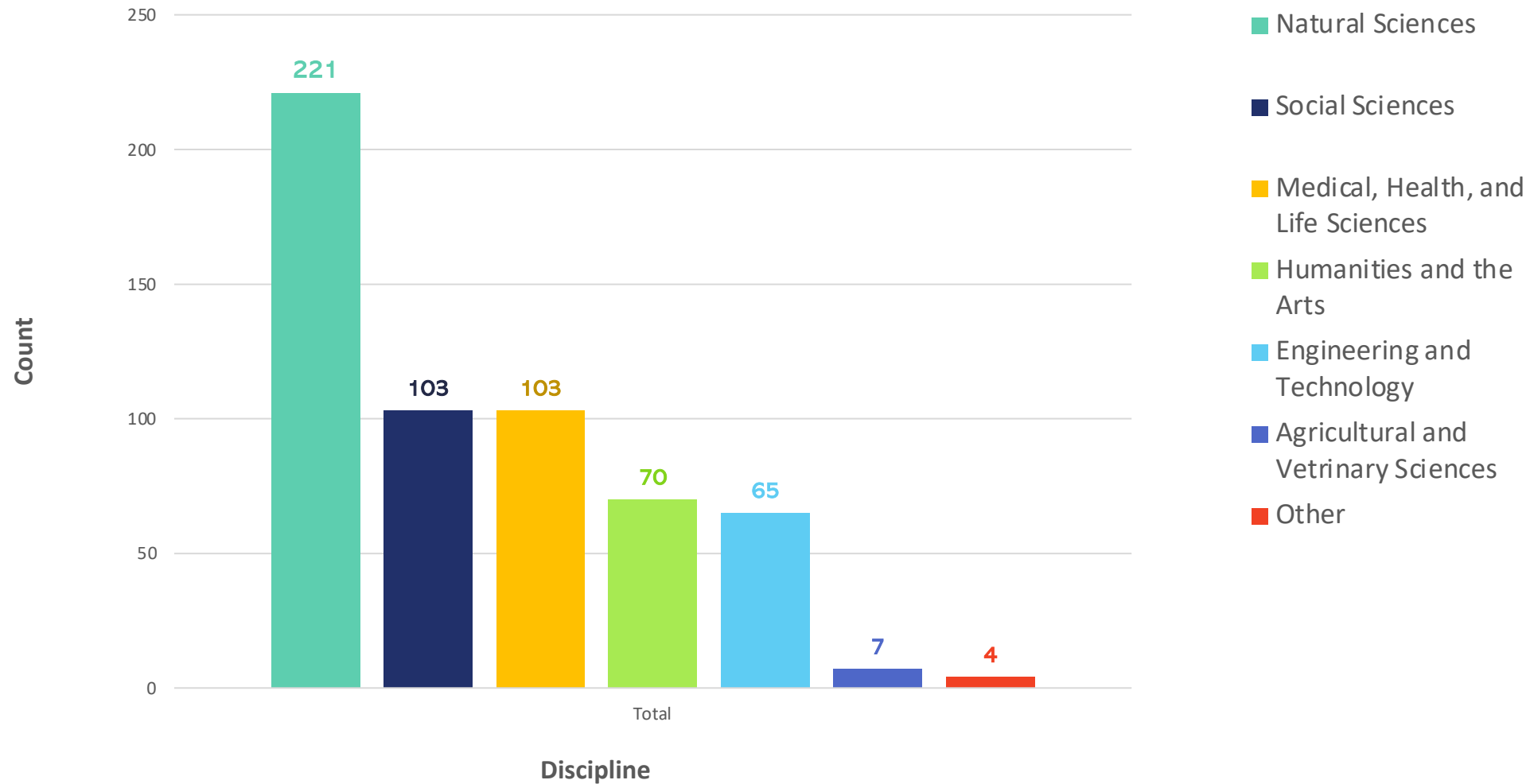
1.1%

NON-BINARY or GENDER-FLUID

Institutional Breakdown

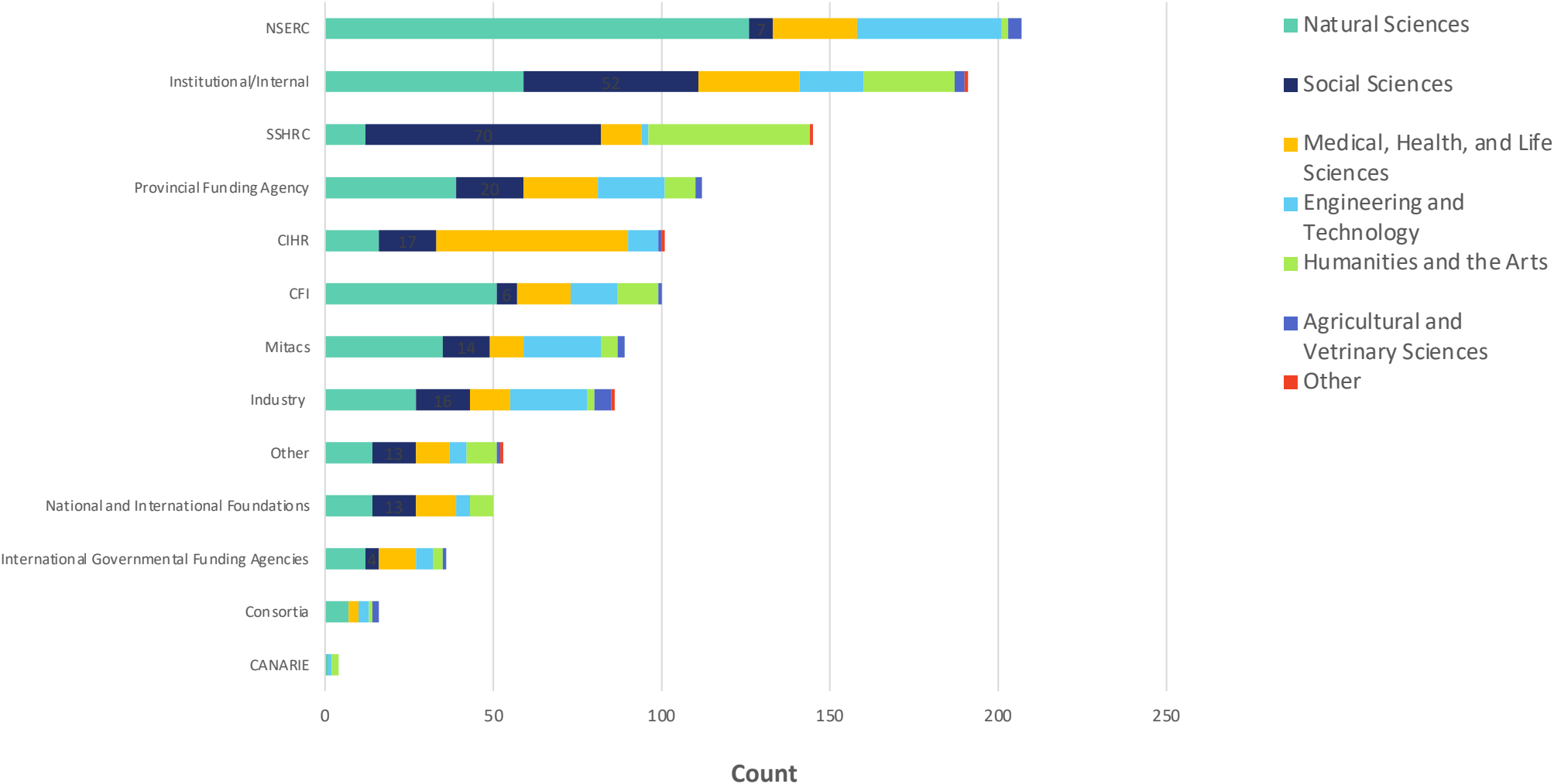


Discipline Breakdown



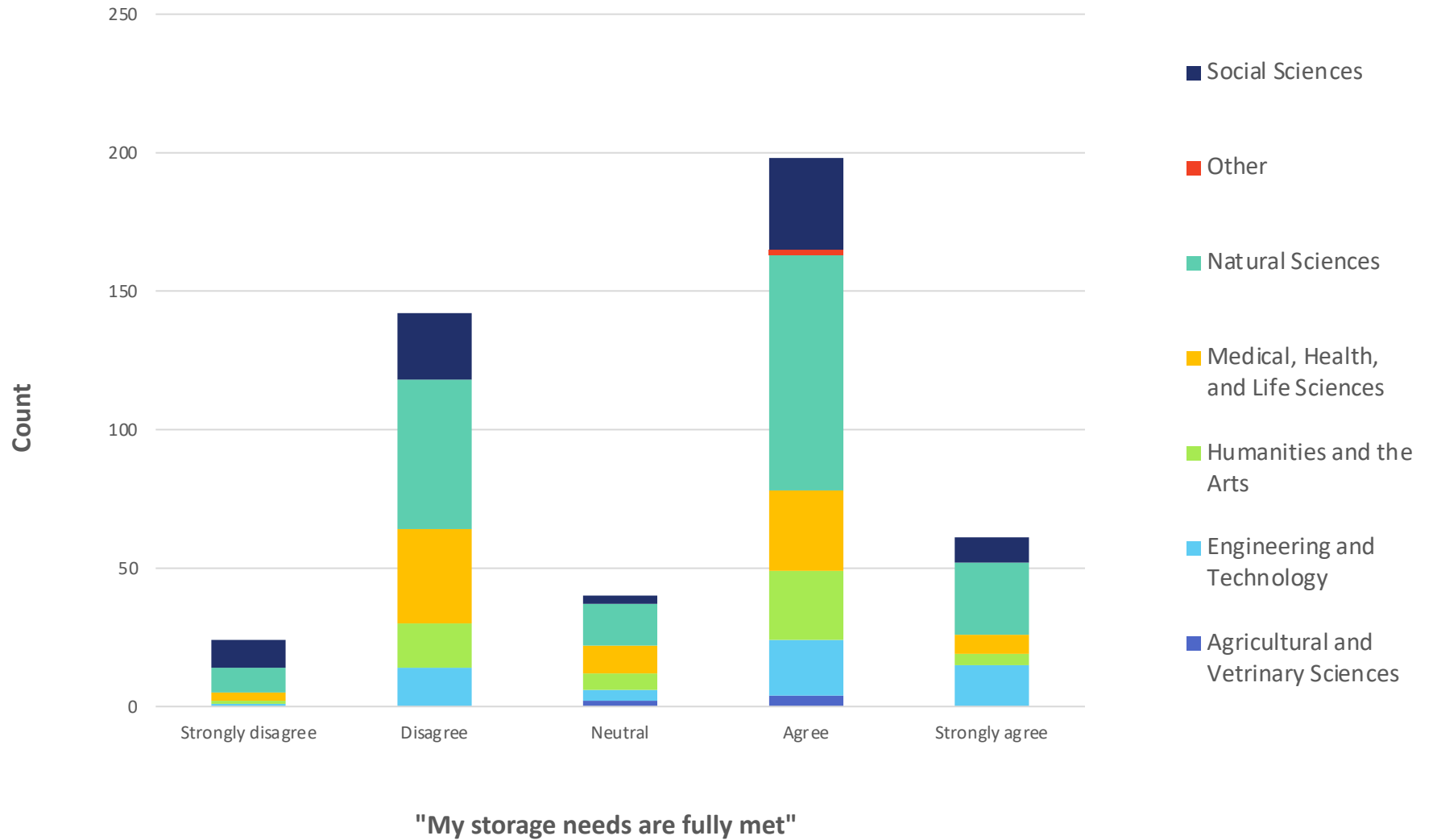
Sources of Funding

Select up to 5 sources you rely on the most to fund your research



Digital Research Infrastructure Needs

Storage Needs



Overview of Comments: Storage Needs

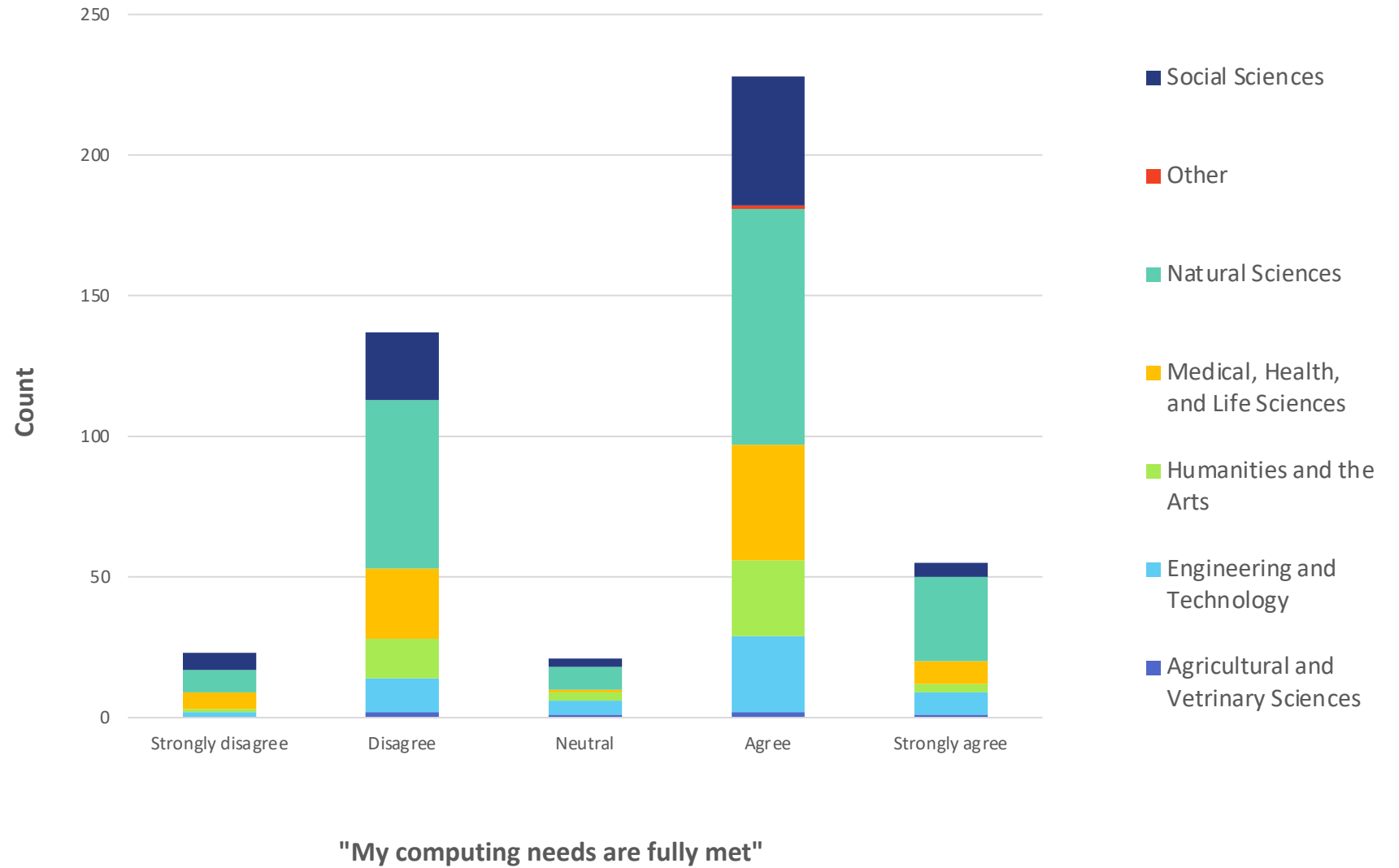
Challenges

- Speed and accessibility of current system seen as a barrier
- Current CC allocations temporary, not sustained throughout a project's lifecycle
- Lack of understanding of storage options available
- Absence of proper data archives in Canada
- Many using personal funds to purchase commercial solutions

Recommendations

- More reliable, high-speed storage options (cloud/virtual and physical storage)
- Solutions must store large amounts of data for long periods of time and be suited to sensitive data

Computing Needs



Overview of Comments : Computing Needs

Overall

- Researchers are using CC systems, institutional resources, and individually-sourced resources to meet their computing needs.

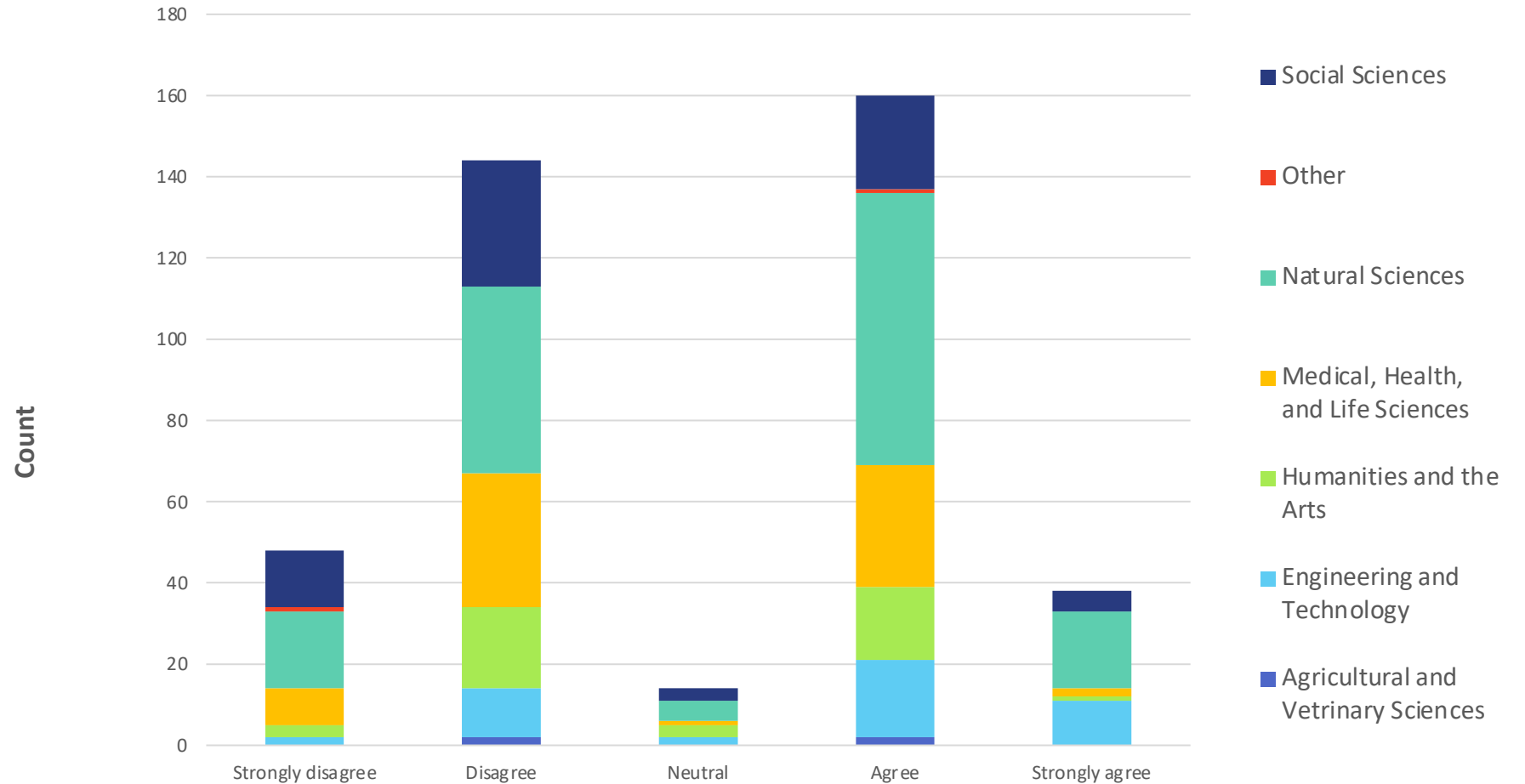
Challenges

- Rising demand for computing resources
- More HQP are needed to support system/user needs
- Lack of disciplinary consideration in computing resources

Recommendations

- Scale systems in accordance with growing computing needs
- Consider “non-traditional” HPC disciplines in computing systems
- Implement adequate institutional support personnel to address user and infrastructure needs

User Support Needs



“My user support needs are fully met (e.g. Analysts, System Administrators, Software Developers, Data Analysts, Data Managers/Curators)”

Overview of Comments: **User Support Needs**

Overall

- Respondents indicated satisfaction with CC resources
- Reliance on support from graduate and undergraduate students for computing, code development, and analytics

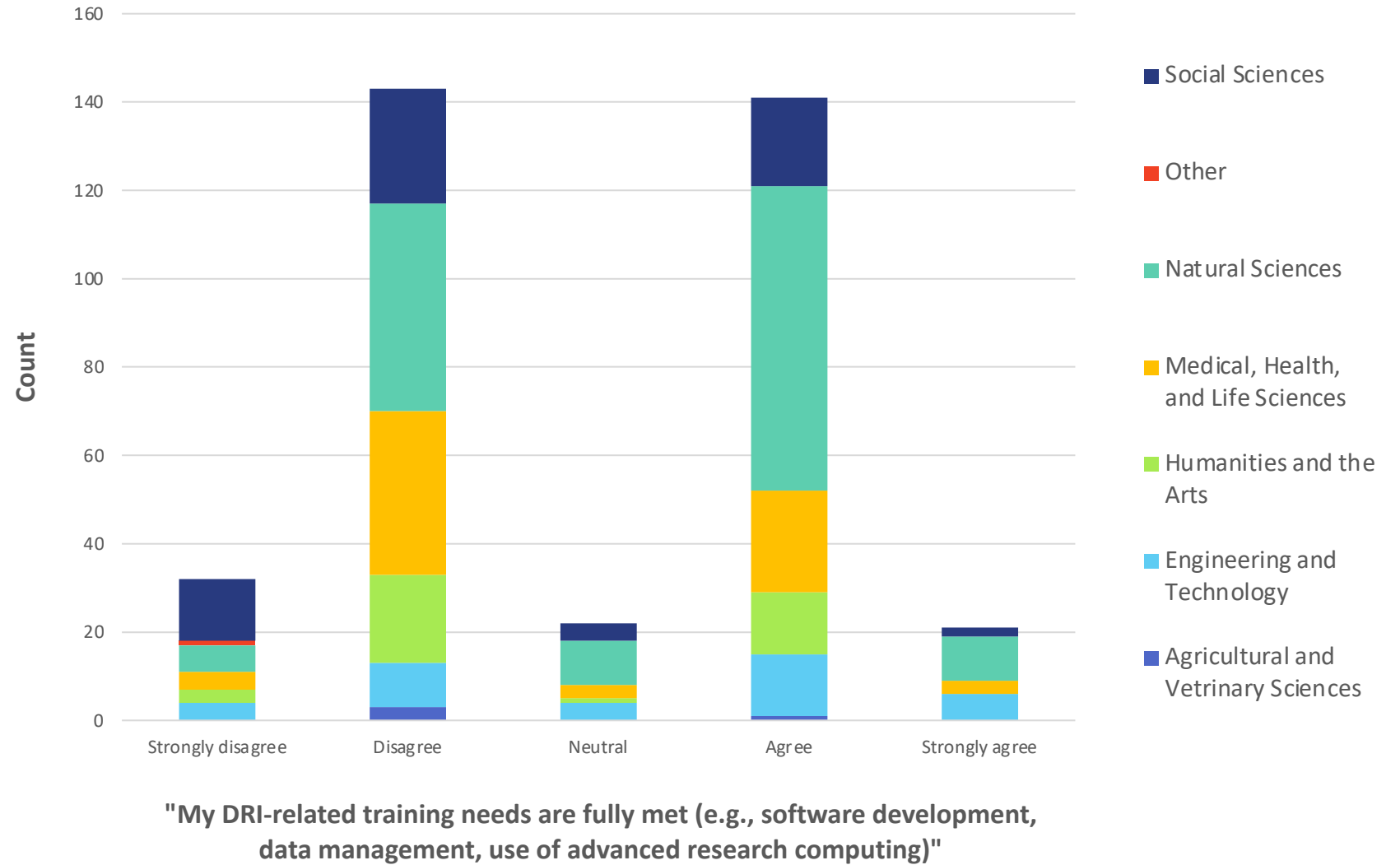
Challenges

- Services lacking in domain-specific expertise
- Lack of adequate staffing for DRI system administration needs

Recommendations

- Increase availability of system administrators, programmers, data analysts, data managers, hardware developers, and software developers for university infrastructure as well as researcher managed resources

DRI-Related Training



Overview of Comments: DRI-Related Training Needs

Overall

- More training programs/resources are required for graduate students, undergraduates, as well as faculty members on AI/ML, research data management, data analytics, as well as software/code development and use among others
- DRI-related skills are largely being self-taught

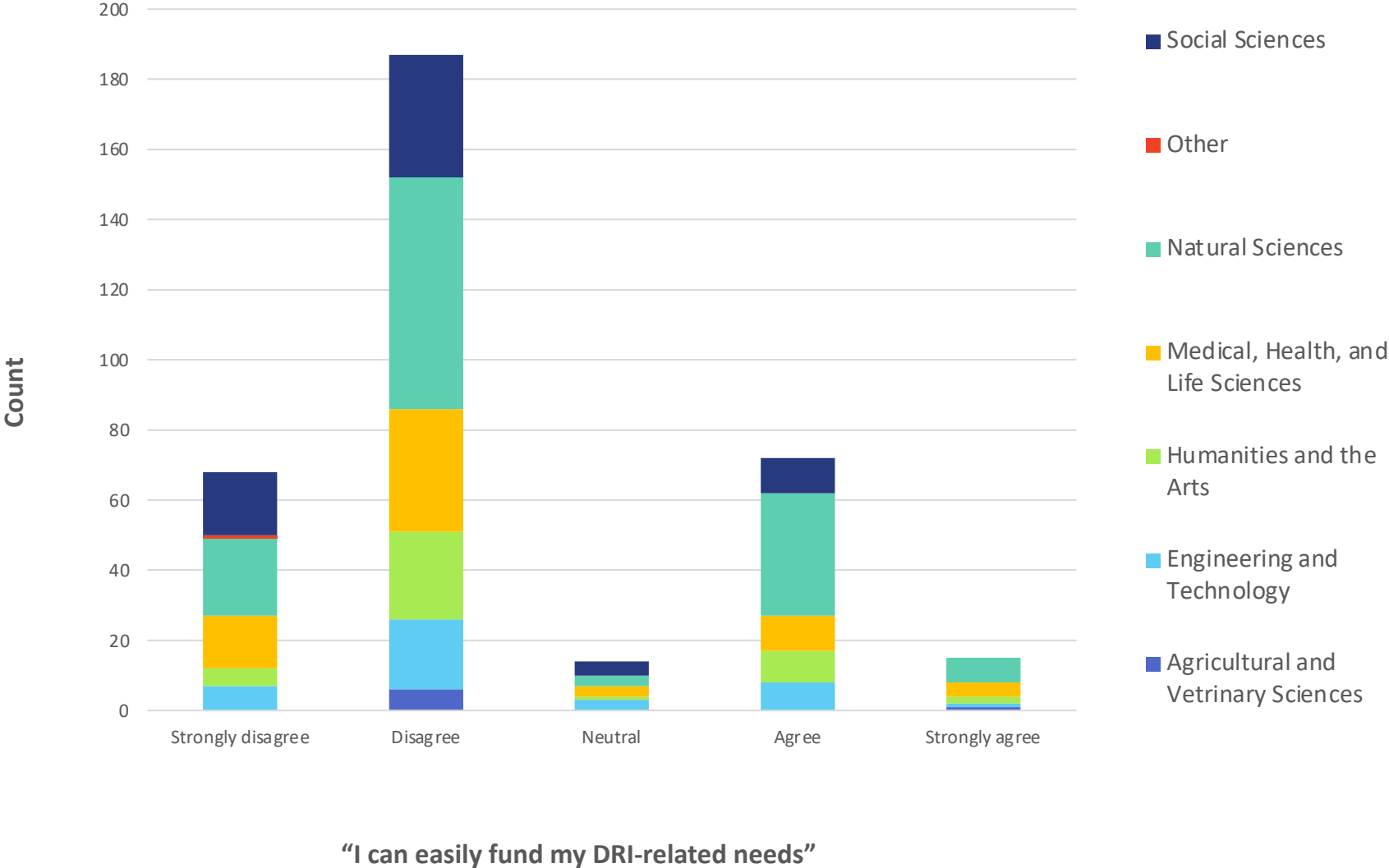
Challenges

- Difficult to find the time and funding to train new research members
- Issues with the “reactive” model that is currently available

Recommendations

- More “proactive” training should be offered
- More training opportunities for both beginner and advanced topics are needed

DRI-Related Funding



Overview of Comments: DRI-Related Funding Needs

Overall

- Obtaining sufficient and sustainable funding for DRI-related needs is extremely challenging

Challenges

- Tri-council agency funding does not allow for long-term planning or training with respect to DRI
- RAC model based on project cycles described as unsustainable
 - Does not promote building shared infrastructure and long-term scalability of digital literacy and resources
- Lack of institutional funding/support available for DRI
- Personnel and infrastructure funding is reliant on temporary grants

Overview of Comments: DRI Roadblocks and Bottlenecks

Overall

- Funding is the primary challenge for researchers
- Lack of sufficient HQP for supporting DRI needs (software developers, system administrators, analysts, curators, and lab managers)
- Lack of training availability and vast learning curve to being able to engage with DRI
- Lack of training opportunities and resources for disciplines outside of STEM
- Long wait times and unreliable access to CC systems
- Lack of availability of long-term storage
- Lack of awareness of DRI resources available in general
- Lack of sufficient HPC resources (GPUs, CPUs)

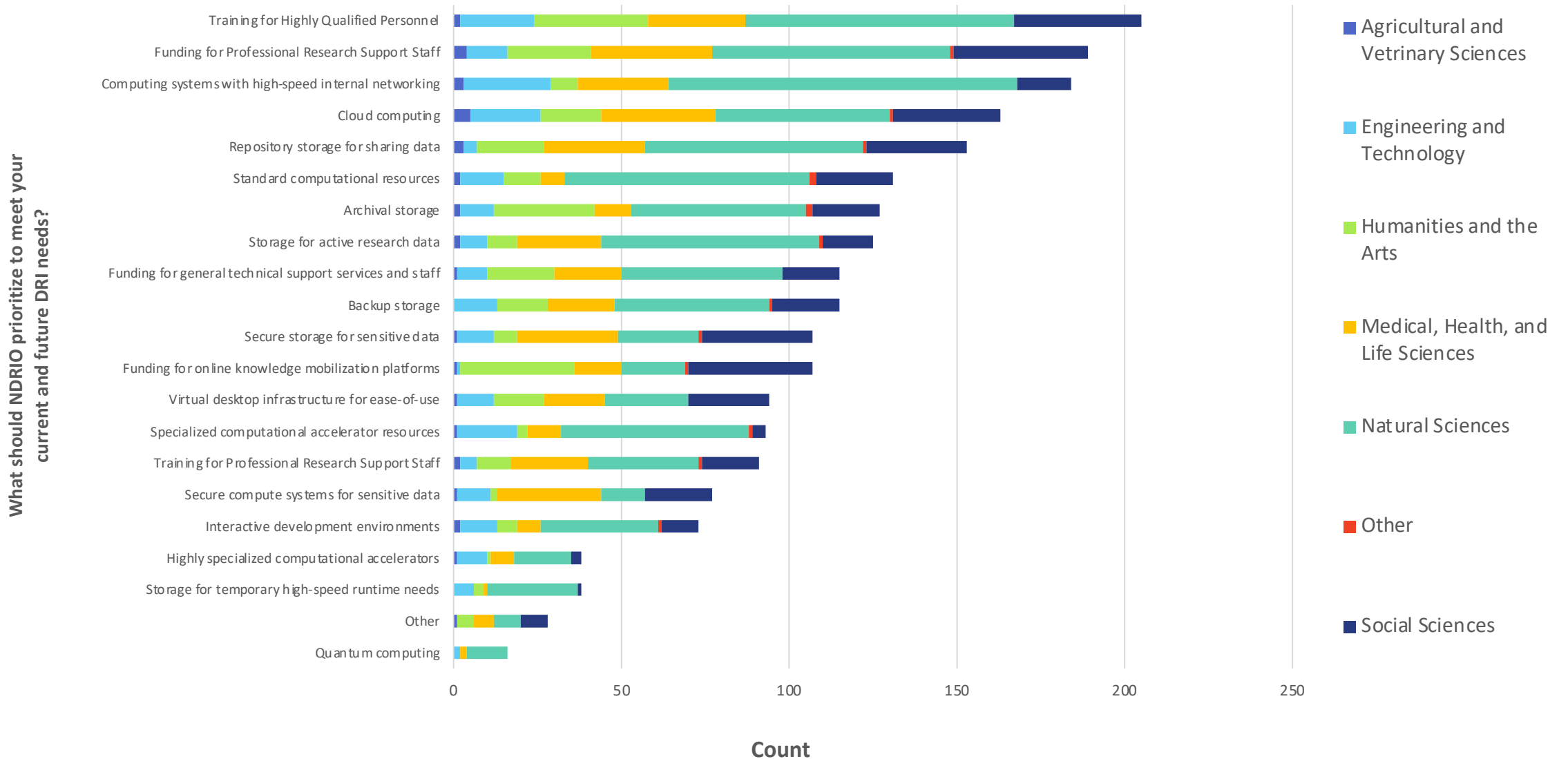
Overview of Comments: **Equitable DRI**

“What comments or recommendations do you have for [the Alliance] to provide an equitable and inclusive service to Canadian researchers across all disciplines, regions, and institutions?”

Overall

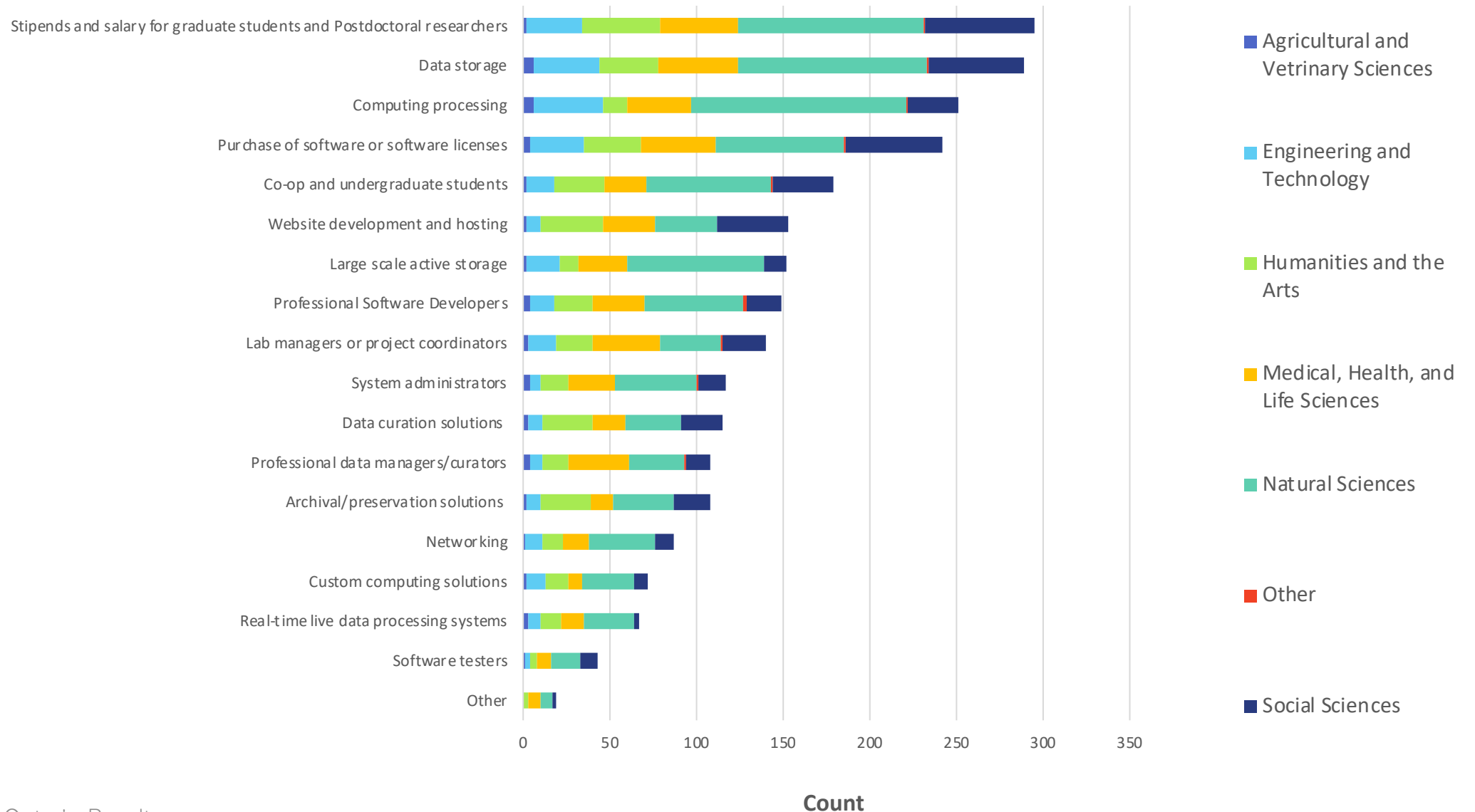
- DRI needs to be accessible to every researcher in Canada, regardless of university association and free at the basic level to encourage widespread use and uptake of the services provided
- Disciplinary support for DRI must be expanded beyond STEM
- Training needs to be offered at a very basic level to foster inclusivity and encourage the use of DRI across disciplines
- NDRIO must directly engage with researchers and communities that have been historically excluded (based in gender, race, sexuality, and [dis]ability) in the use of technology
- Remote access to DRI needs to be increased to foster accessibility
- Communication and outreach, training, and staffing around DRI should focus on standard EDI approaches including subsidizing the costs of resources/training for individuals from marginalized communities and hiring from a diverse applicant pool
- Calls for dedicated resources needs to be restructured, and administrative barriers need to be eliminated in gaining DRI resources

Prioritizing Current and Future DRI Needs



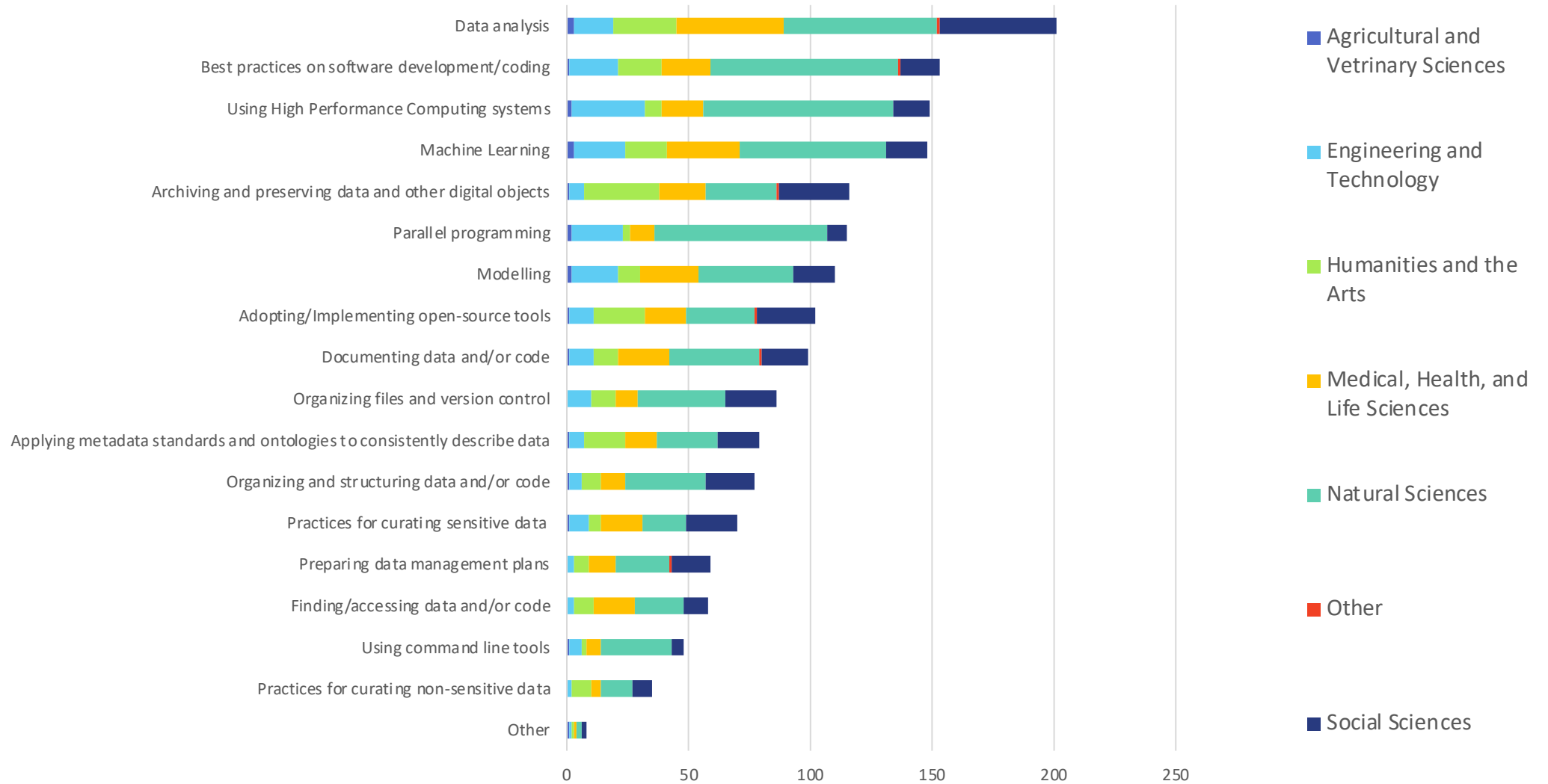
DRI Components For Which You Need Funding

For Which Of The Following DRI Components Do You Need Funding To Conduct Your Research?



Top 5 Areas That Require Training

Choose the top 5 areas where you, or members of your team, most require training to improve and maximize your use of DRI.



Thank you