

Nikhef



RECOGNITION OF INDIVIDUALS IN LARGE COLLABORATIONS

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December 17, 2018

THE EXPERT AND THE NEWCOMER'S VIEW

Visibility and promotion of young scientists is of utmost importance in science and in particular also for the large collaborations in high-energy physics

What is the issue:

- Recognize individual achievements - inside & outside
 - design, construction and operations of experiments,
 - software and computing, - reconstruction and analysis
- It stimulates creativity, innovation and scientific ambition

Potential solutions:

- Authorship, Conference speakers, Leadership, Awards, etc.
 - Awareness - rules and cultures in collaborations



ECFA WORKING GROUP

Map the landscape of what is currently being deployed in large collaborations to address the issue of recognizing the achievements of individuals

ECFA: European Committee for Future Accelerators

- Long-term planning by a community of physicists in CERN countries
- Netherlands:
 - Merk, van Leeuwen, de Groot, Laenen, SB



2016: ECFA/EPS RECOMMENDATION

Evaluation of Experimental Particle Physicists to *outside world*

- Explain house rules for particle physics to evaluation committees
 - E.g. dealing with large number of authors
 - Important for obtaining individual grants like VENI-VIDI-VICI

Recommendation to HEP (i.e. YOU!)

- Personal webpage
 - up-to-date personal website with achievements
- Specific publications and other documents
 - only list publications to which you contributed
- Specific conference contributions
 - mention the level of competition



2018: BOTTOM-UP

Is “Recognition of individuals in large collaborations” an issue for you?

- How relevant is topic for
 - PhD students
 - Postdocs
 - Tenure tracks



Transparency in discussion

- How can we collect all angles?
- Do you have suggestions to improve?
 - Survey for all (younger) members of large collaborations

ATLAS, CMS, SNO, KM3NeT, CTA, CLOUD, JUNO, LIGO, EUCLID, NEXT, VIRGO, BOREXINO, PANDA, BELLE, KATRIEN, ICECUBE, AUGER, AMS, NA62, LHCb, ISOLDE, COMPASS, ALICE, AWAKE

GENERAL ECFA SURVEY

Web-based survey (survio.com)

- Start date: September 24, 2018
- End date: October 28, 2018

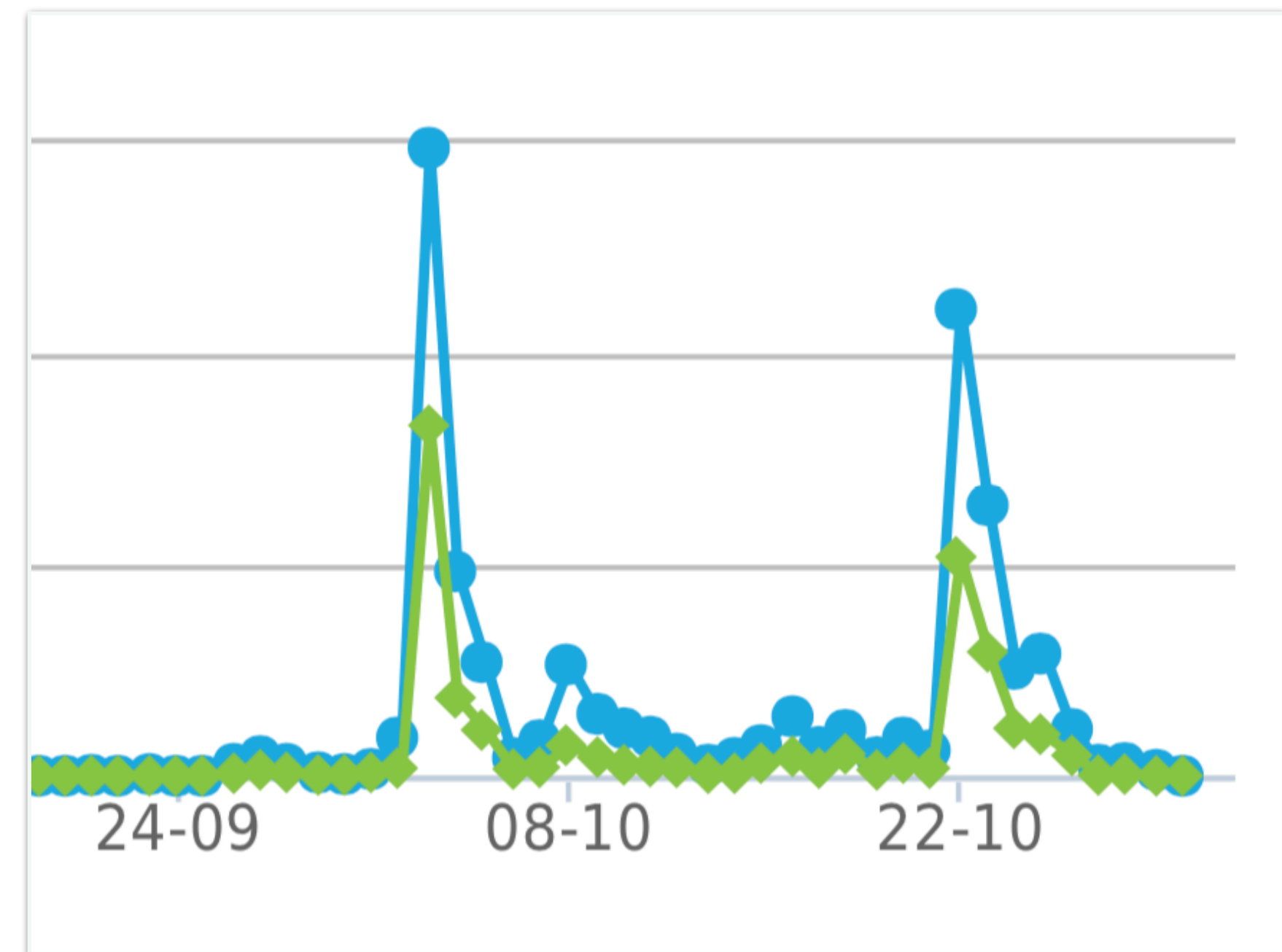
Announcements

- CERN courier
- CERN bulletin
- CERN EP Department email
 - October 3, 2018
- Follow-up campaigns

Total number of visits: 3194

Total number of completions: 1347

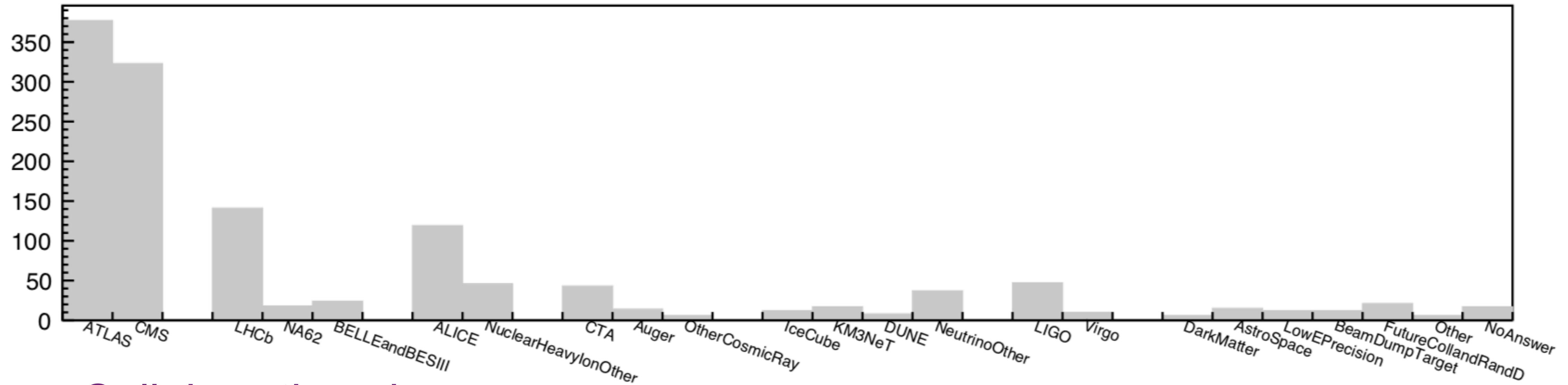
ECFA survey "Recognition of individuals in large collaborations"



Visits and completed surveys by date

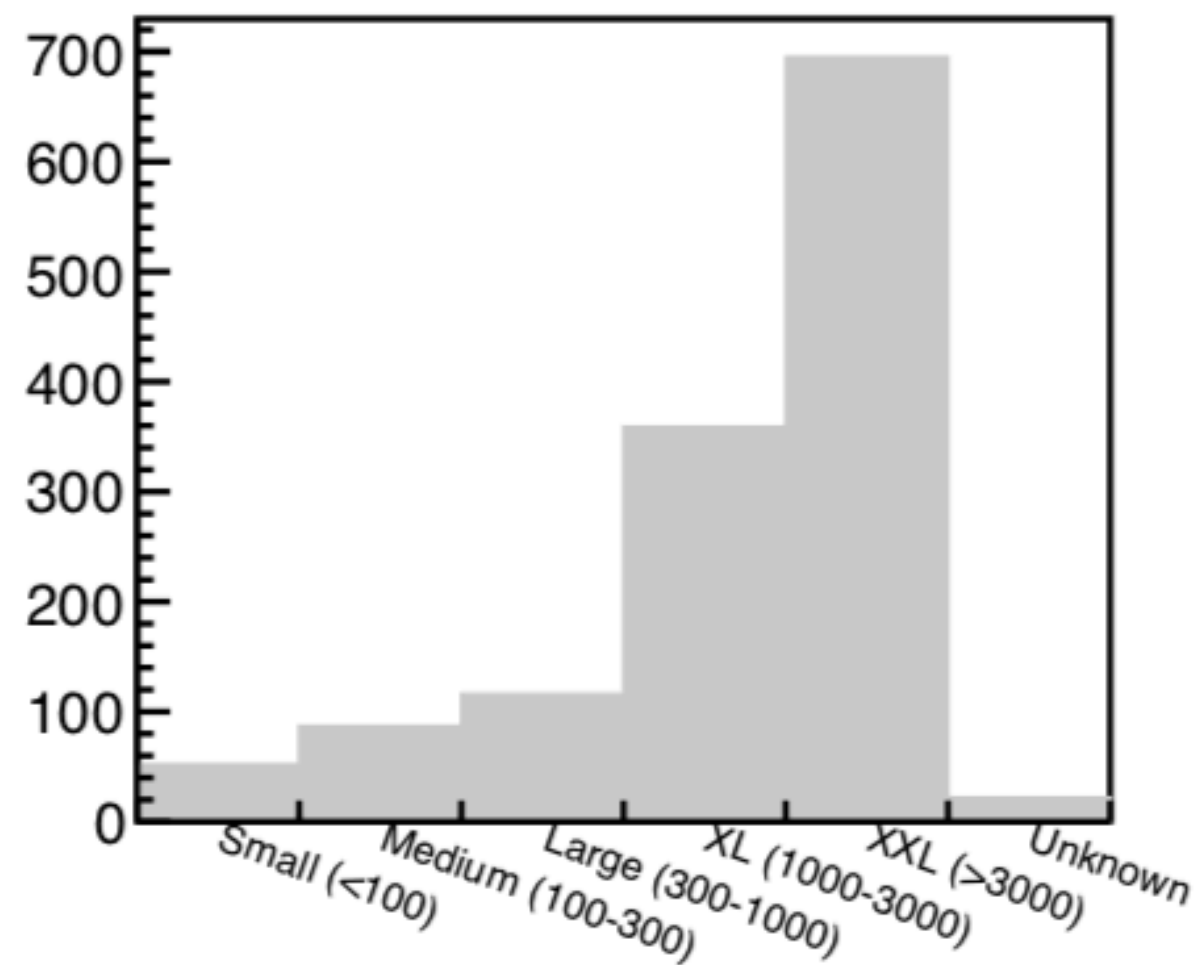


RESPONSES (COUNT) SPLIT BY EXPERIMENT



- Collaboration size

responses split by COLLABORATION SIZE

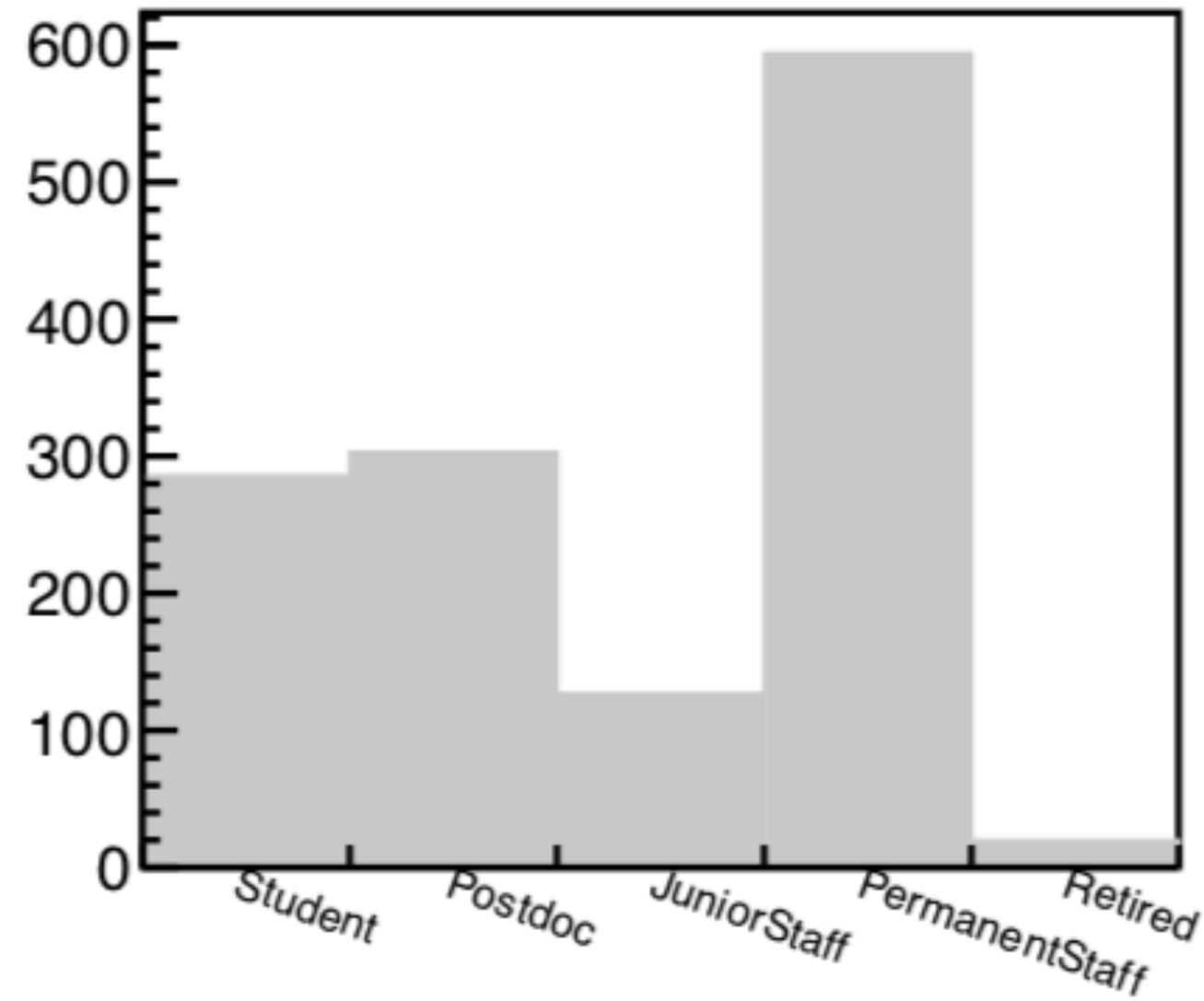


Large LHC collaborations well represented
 In addition large number of Astroparticle Physics experiments feel somehow connected to the ECFA community

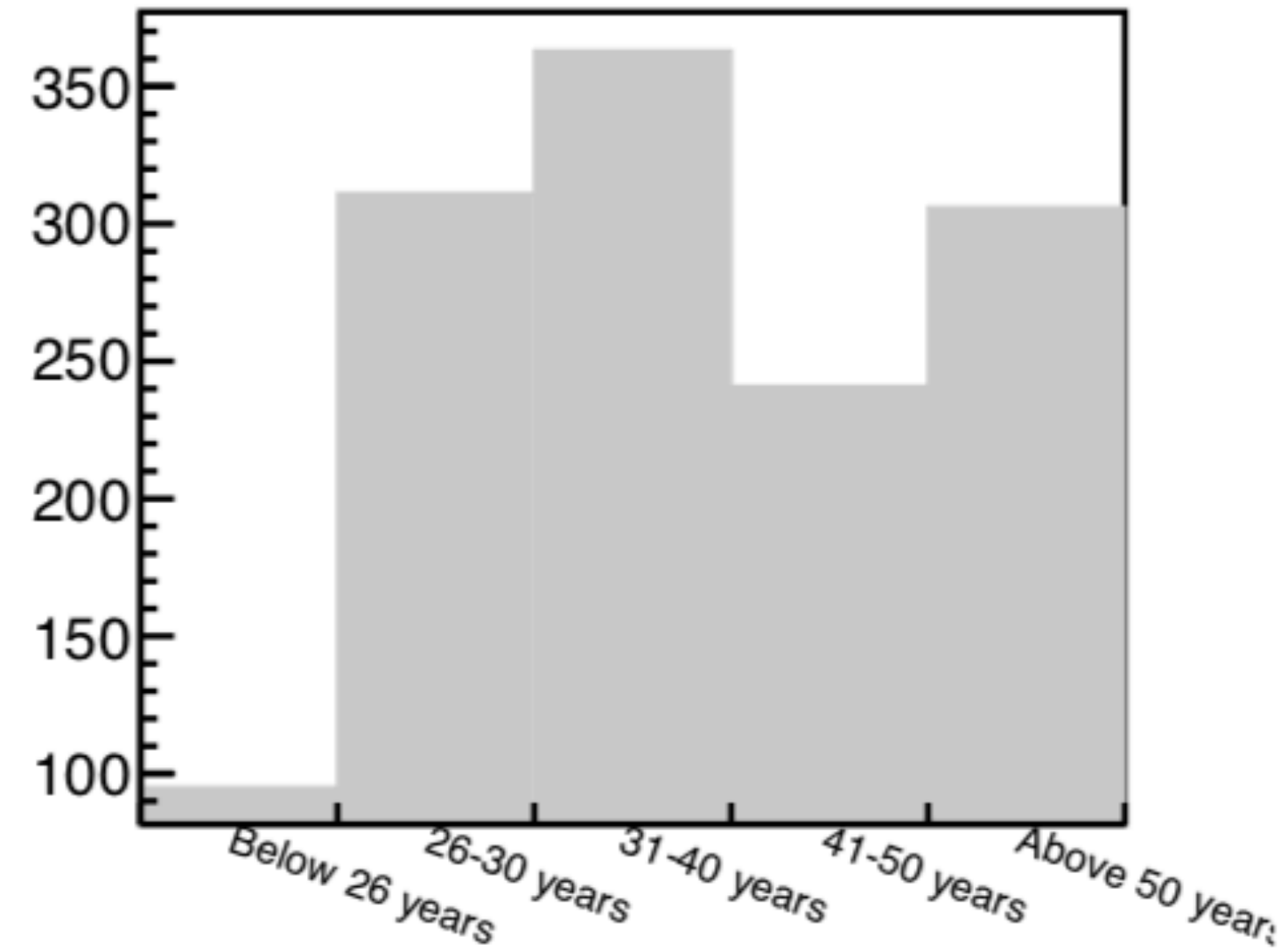


RESPONSES (FREQUENCY) BY CAREER STEP

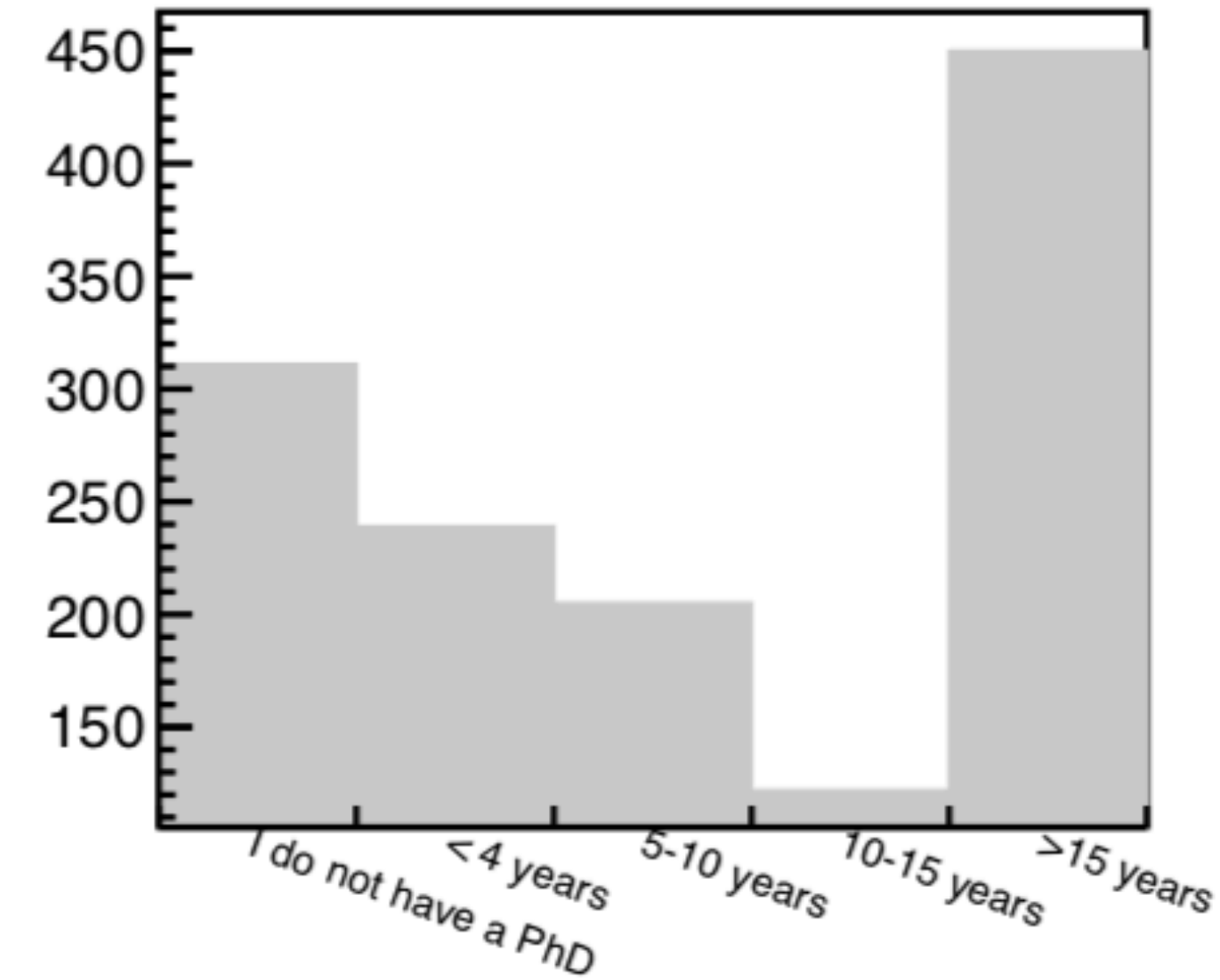
responses split by POSITION



responses split by AGE



responses split by WORKING EXPERIENCE



- Student
- PostDoc
- JuniorStaff
- PermanentStaff
- Retirement

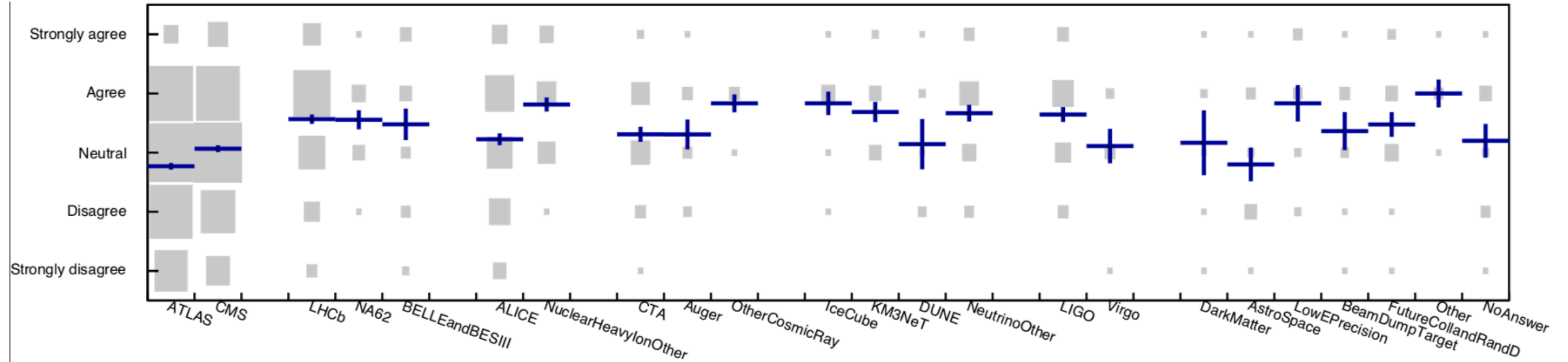
Observed difference in response rates w.r.t. general population, e.g. 44% of respondents is PermanentStaff in survey, true fraction HEP-wide is substantially lower
The group of respondents is not necessarily representative for the full community



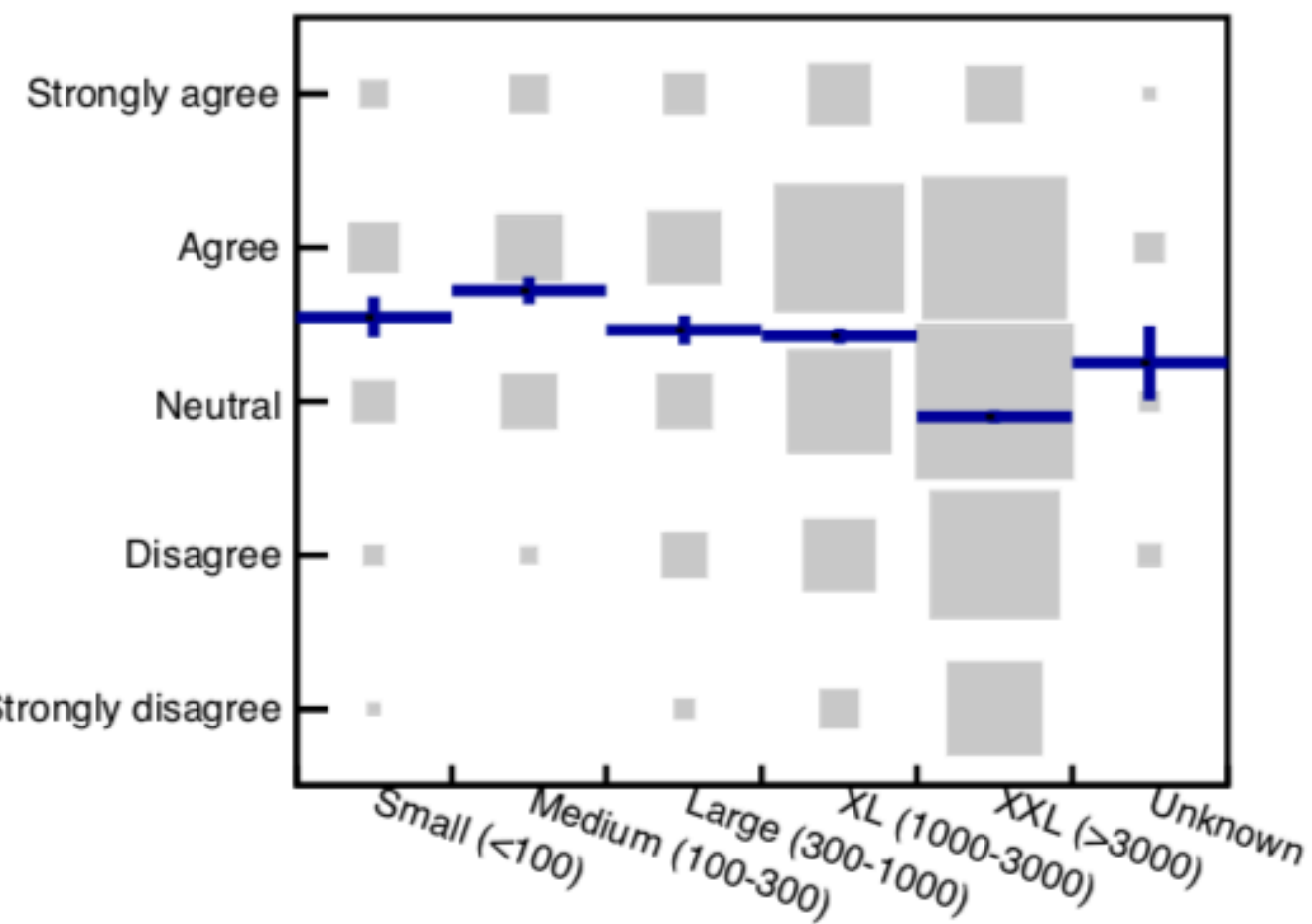
CONFERENCE TALKS - 1

The collaboration guidelines for speakers at conferences allow me to be creative and demonstrate my talents

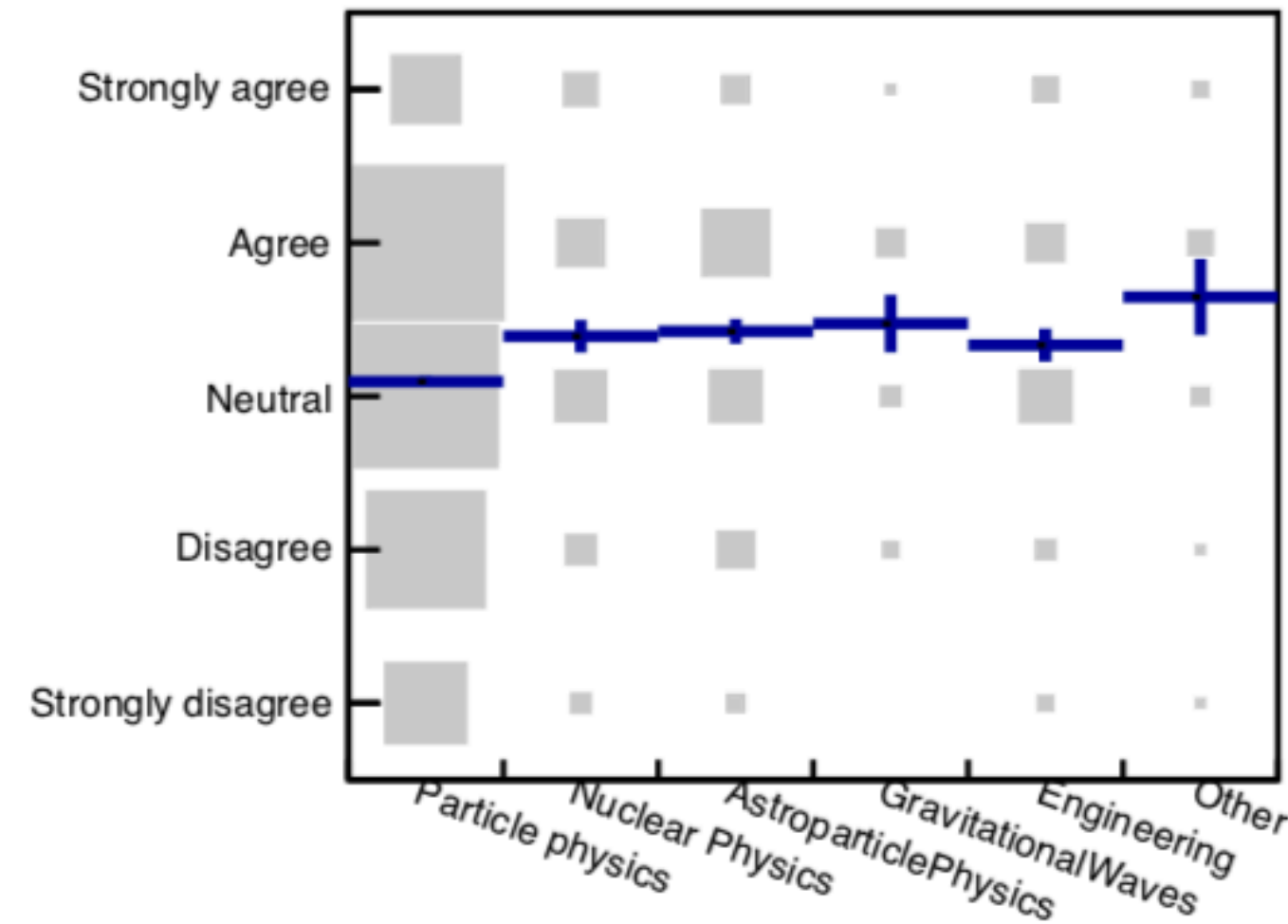
Score is assigned to numbers -2 to +2



responses split by COLLABORATION SIZE



responses split by DISCIPLINE



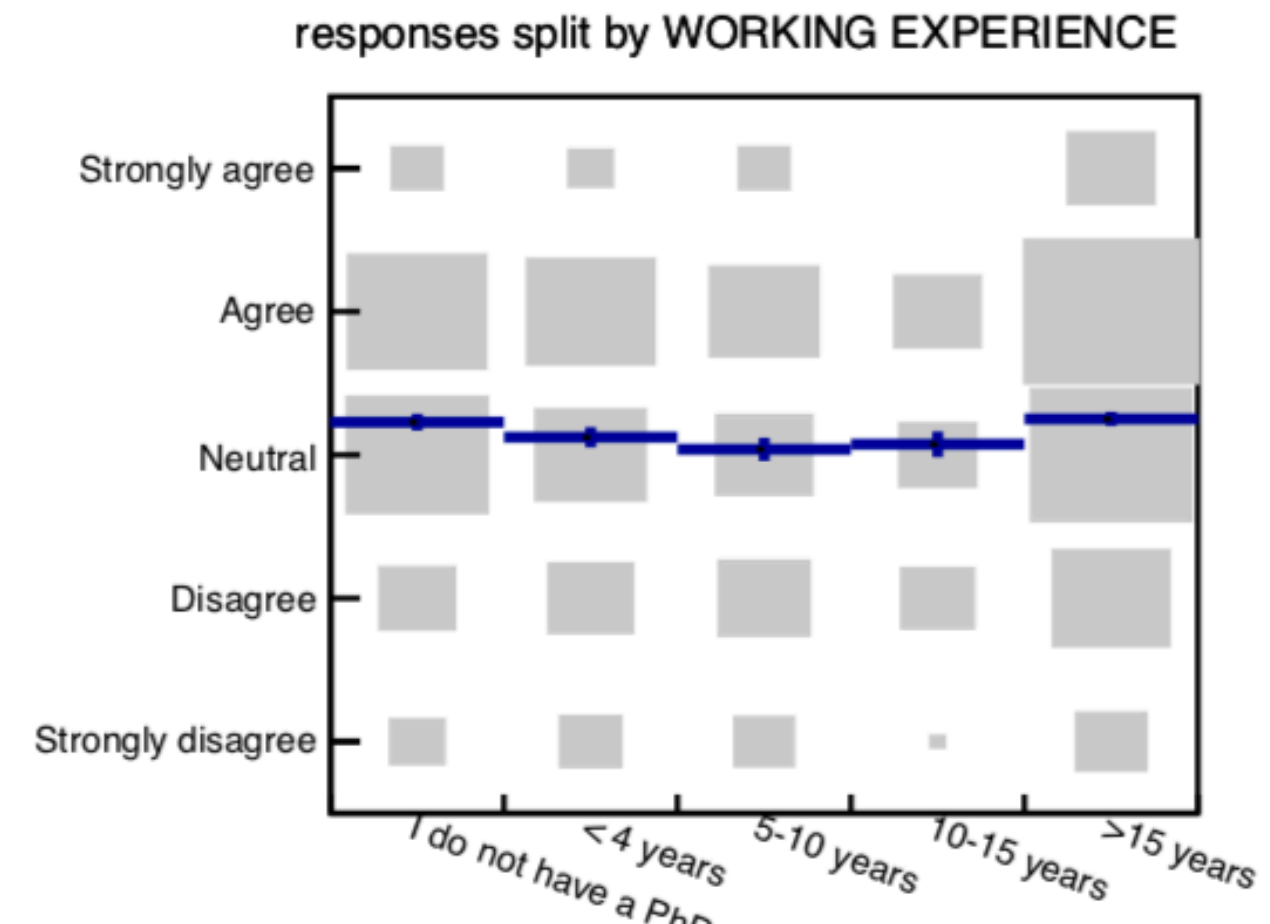
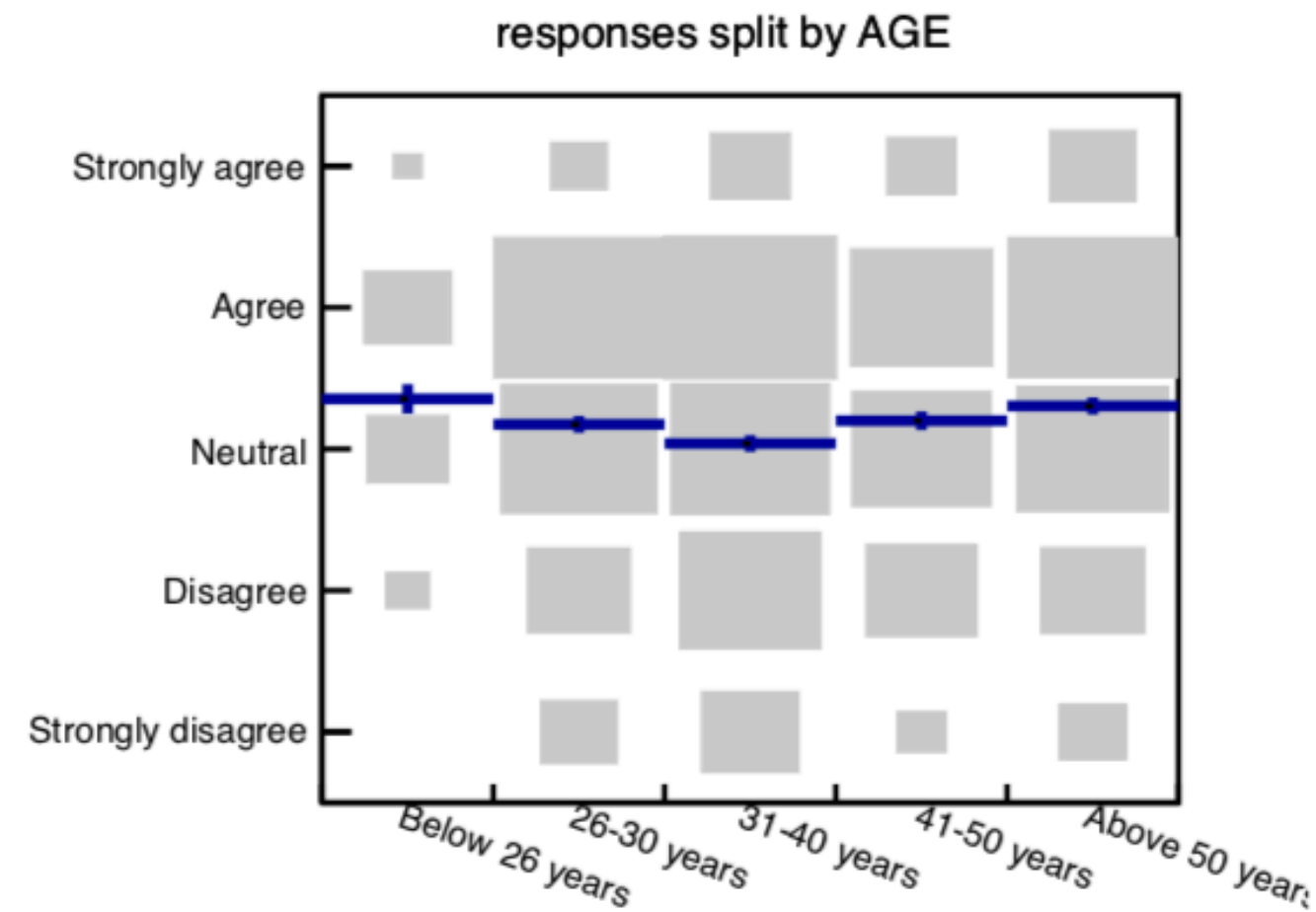
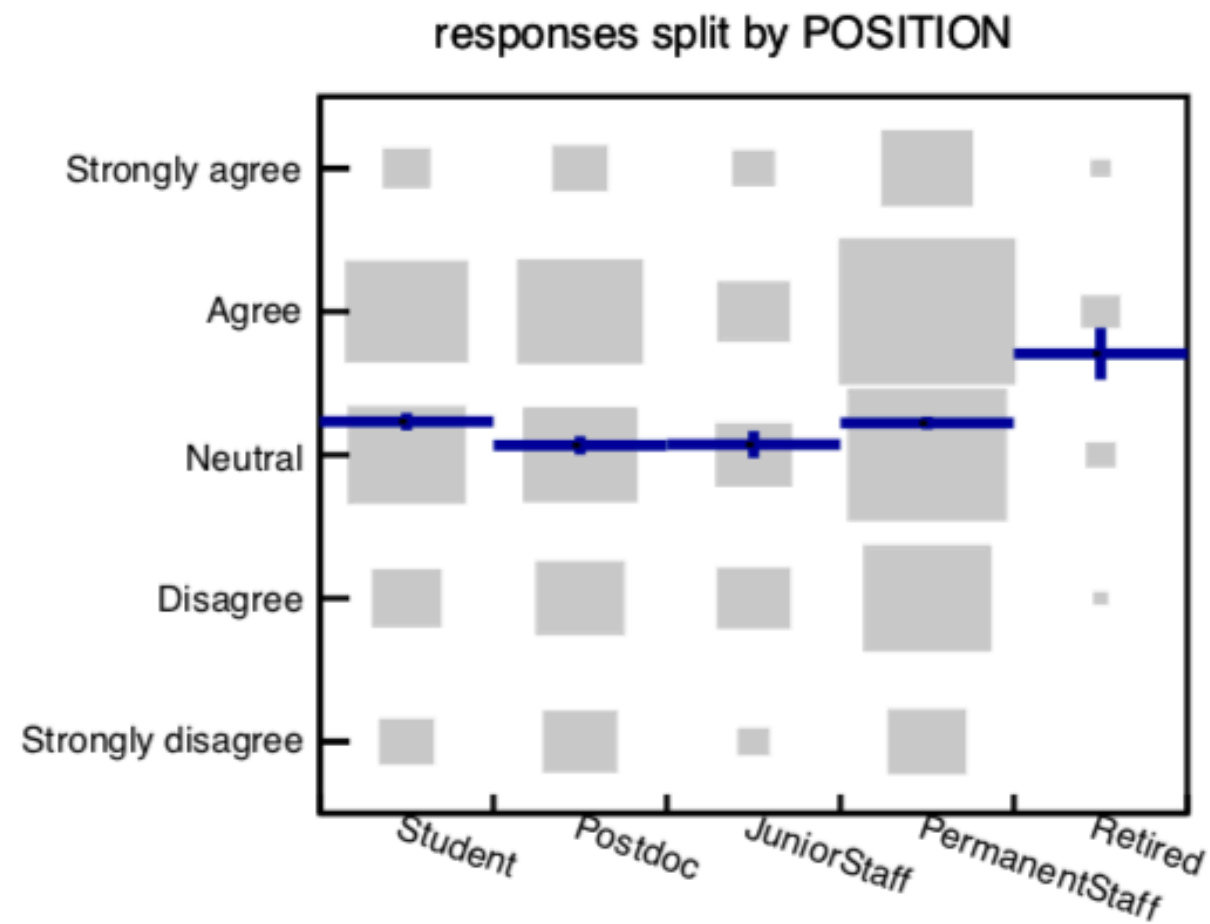
Significant variations observed:

- Large collaborations agree less well to statement
 - E.g. clear difference ATLAS and LHCb
- people tend to disagree to the statement if the collaboration gets larger
- Quite a few negative scores
- More an issue in Particle Physics than in other fields



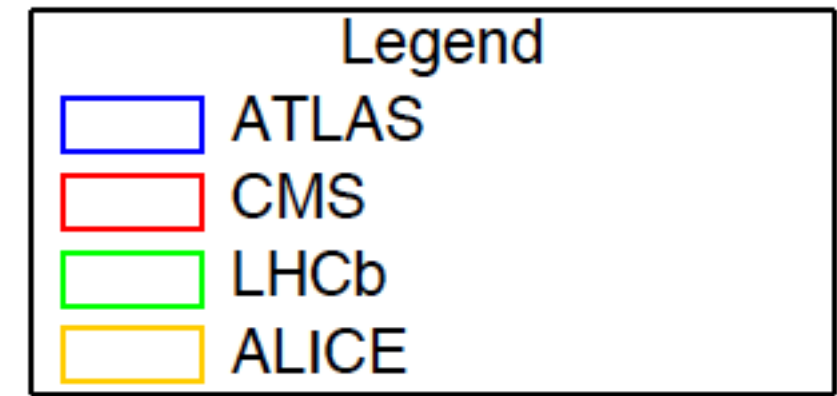
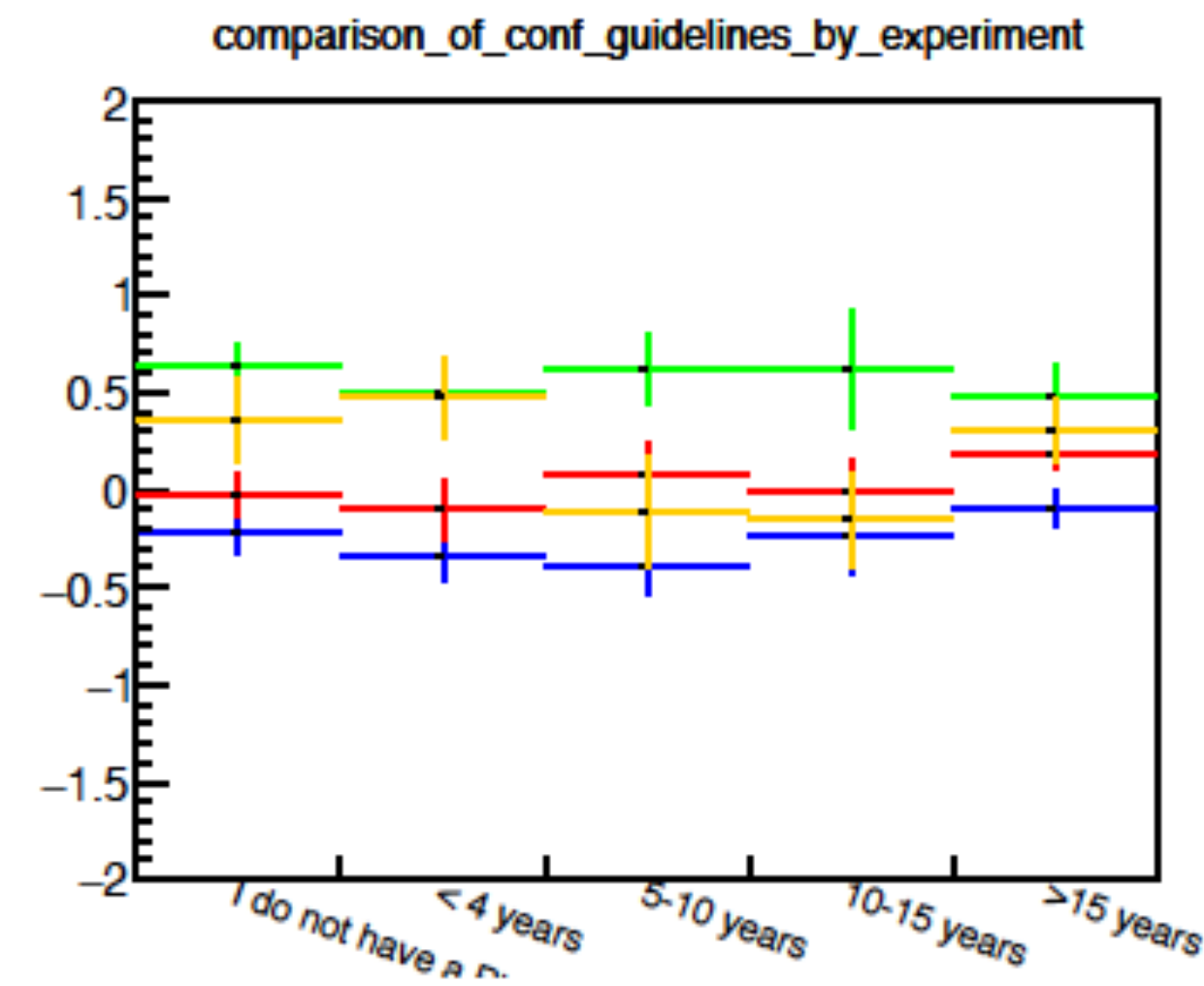
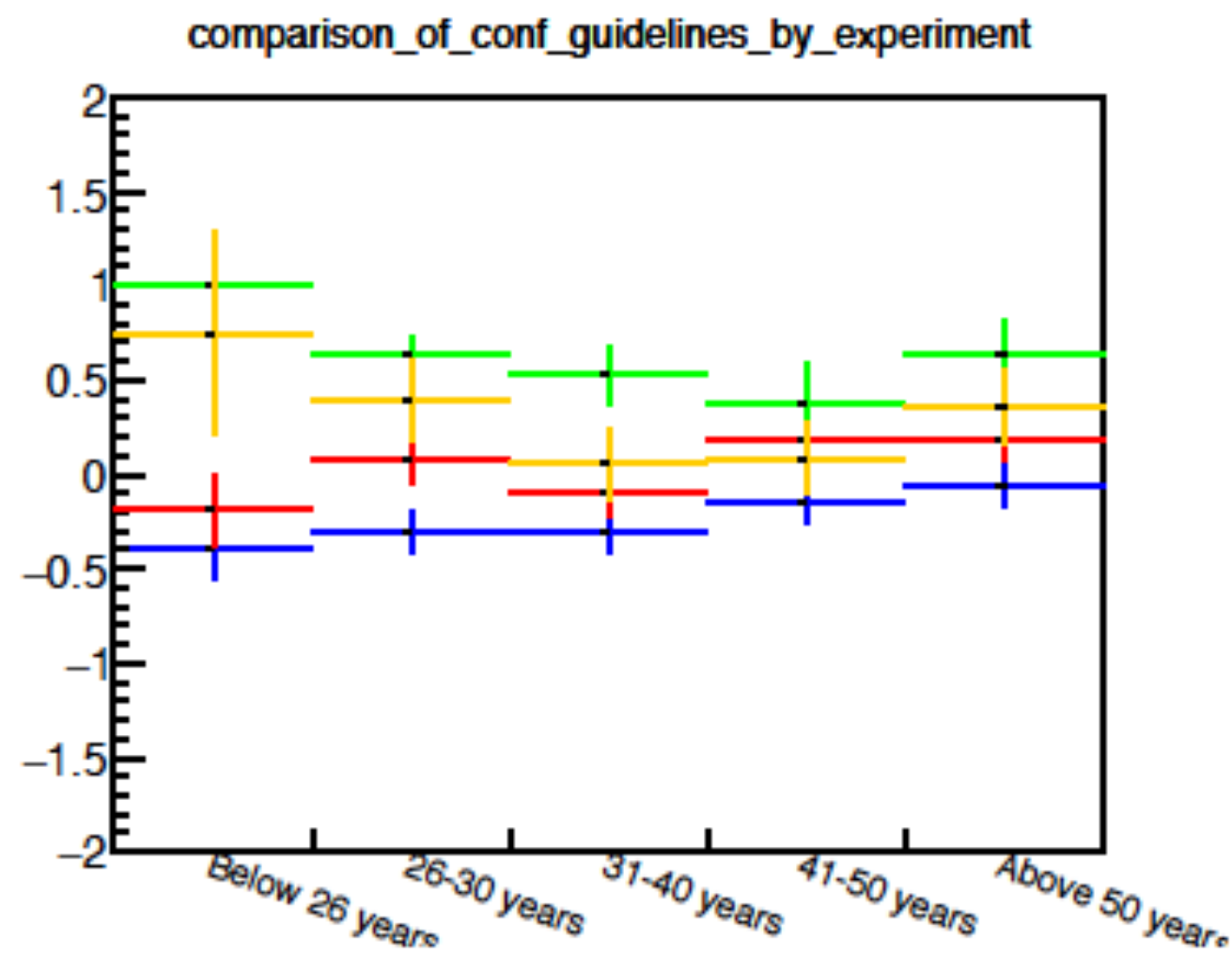
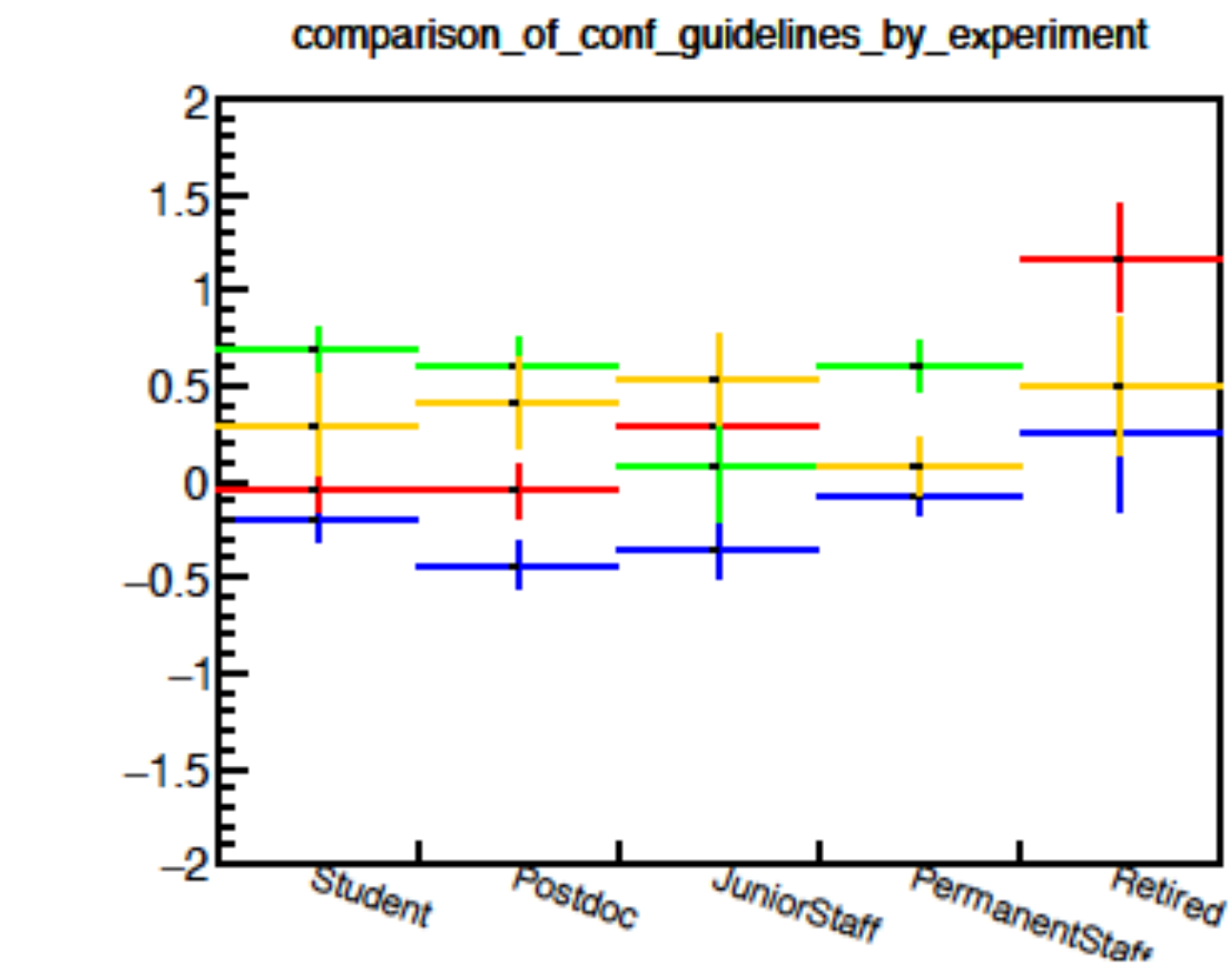
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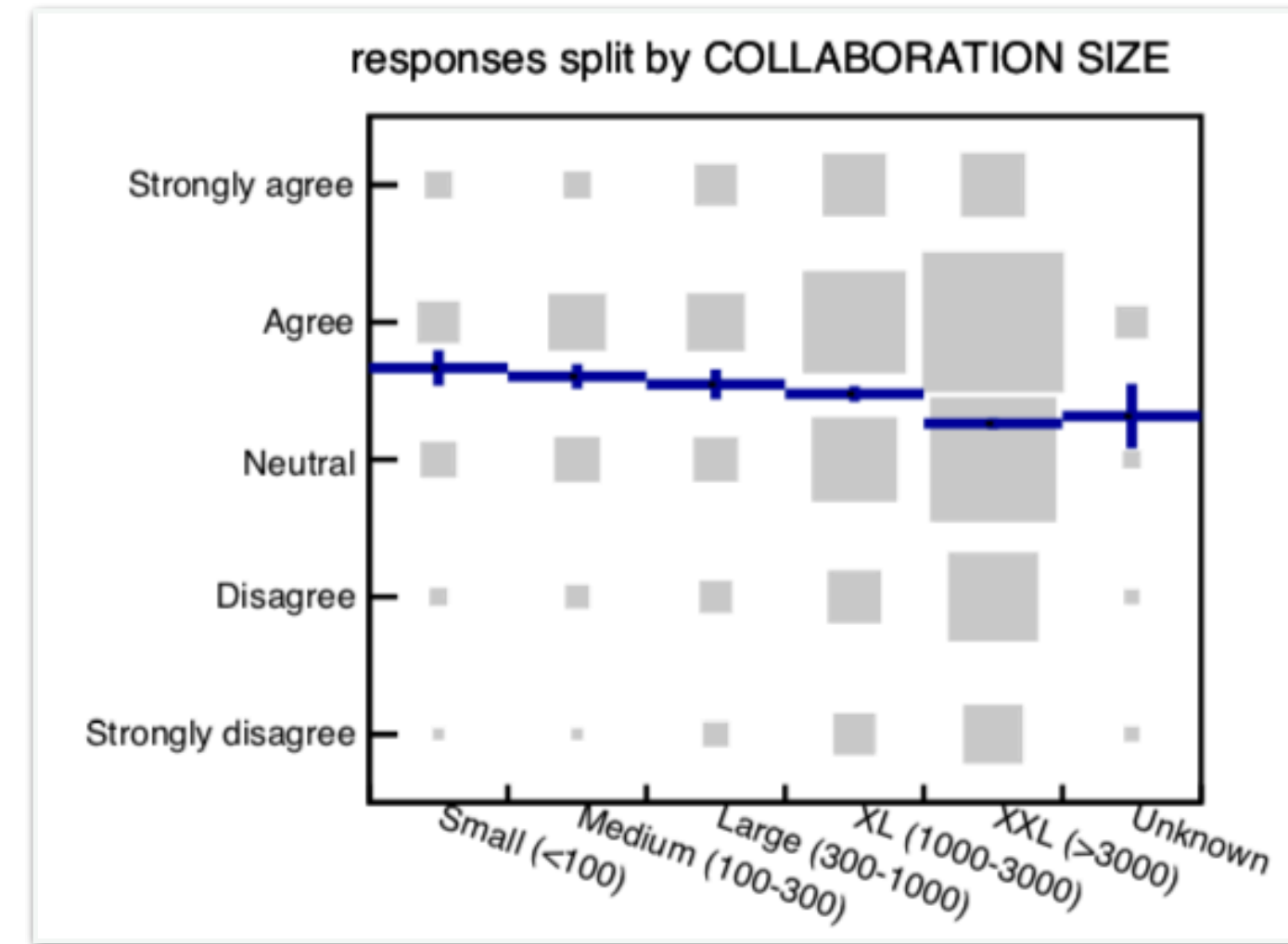
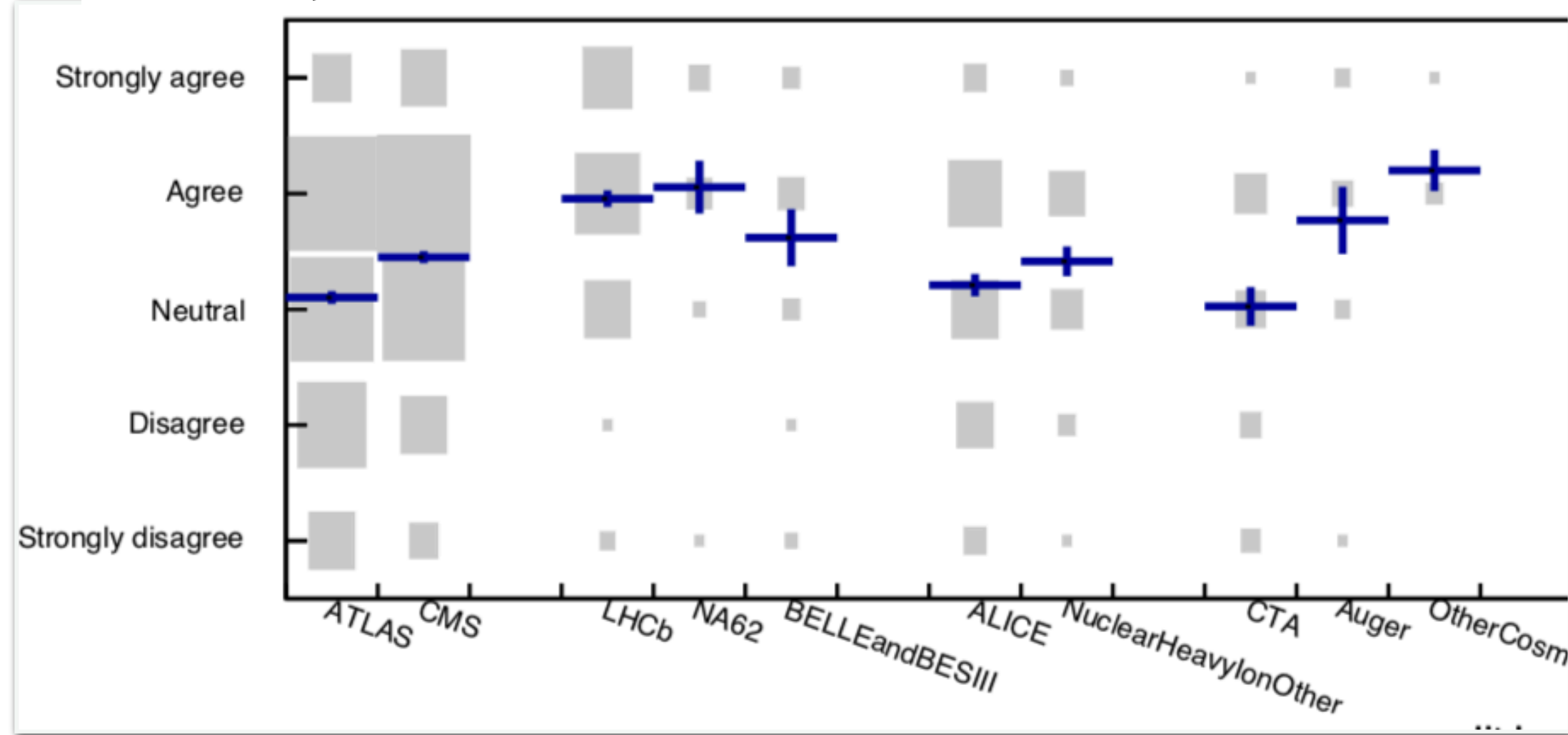
Disagreement largest for postdocs and junior staff

Large differences observed between the LHC experiments - for all stages in career



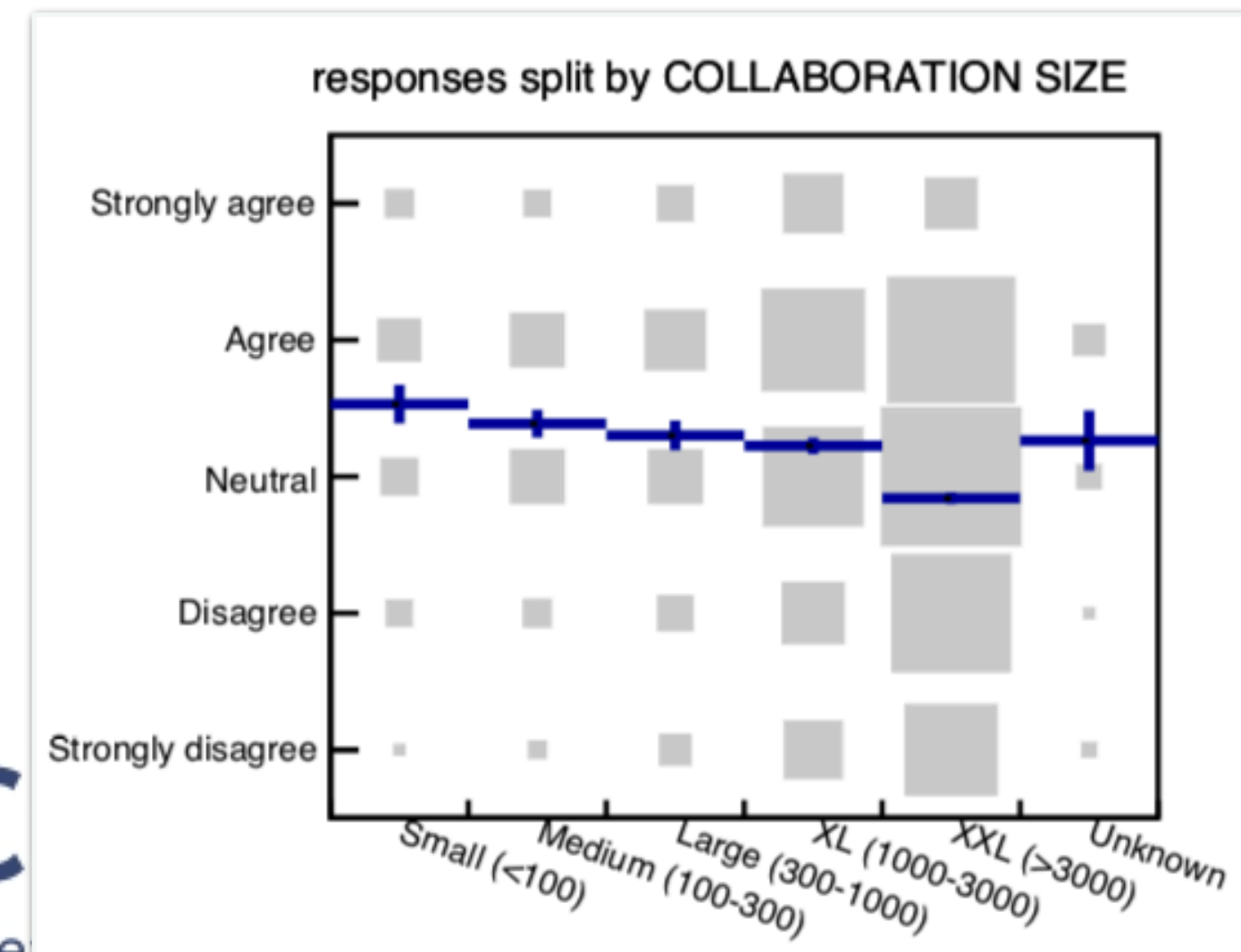
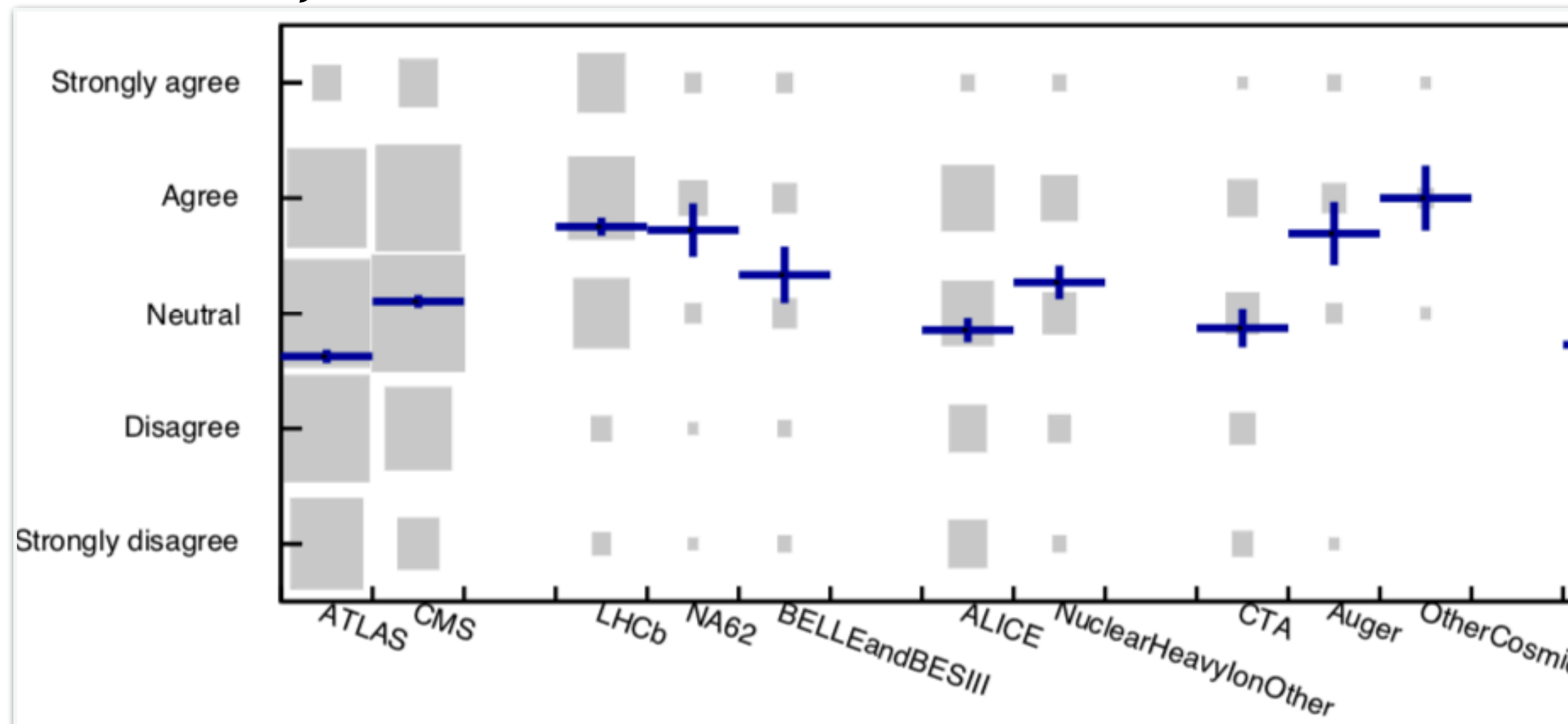
CONFERENCE TALKS - 2

Overall, I am allocated a fair number of conference talks on behalf my collaboration

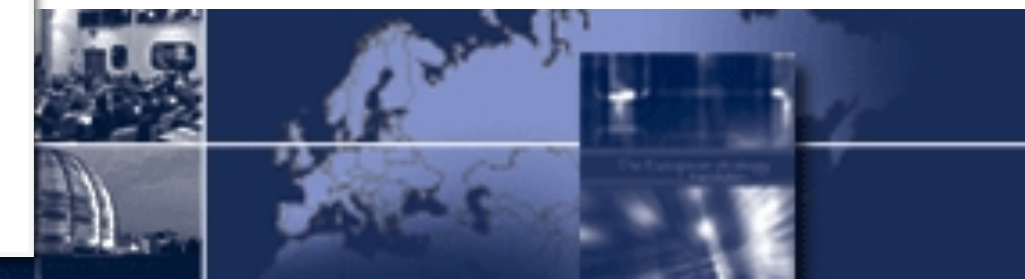


Wide spread in these distributions for LHC experiments
Note that the box 'strongly agree' is rather empty

Overall, I am allocated a fair number of talks at major conferences on behalf of my collaboration

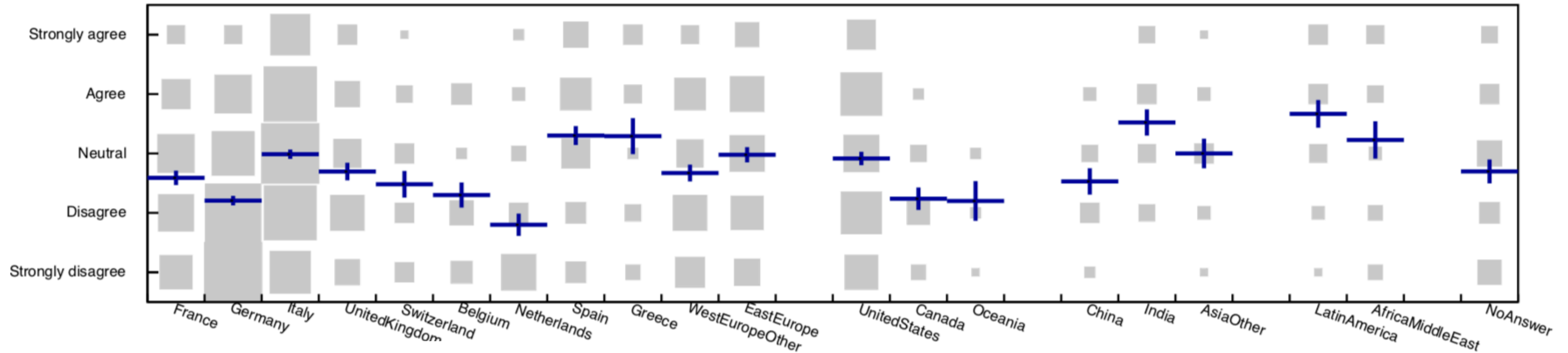


Large collaborations perceive less fair conference talks at major conferences with large spread

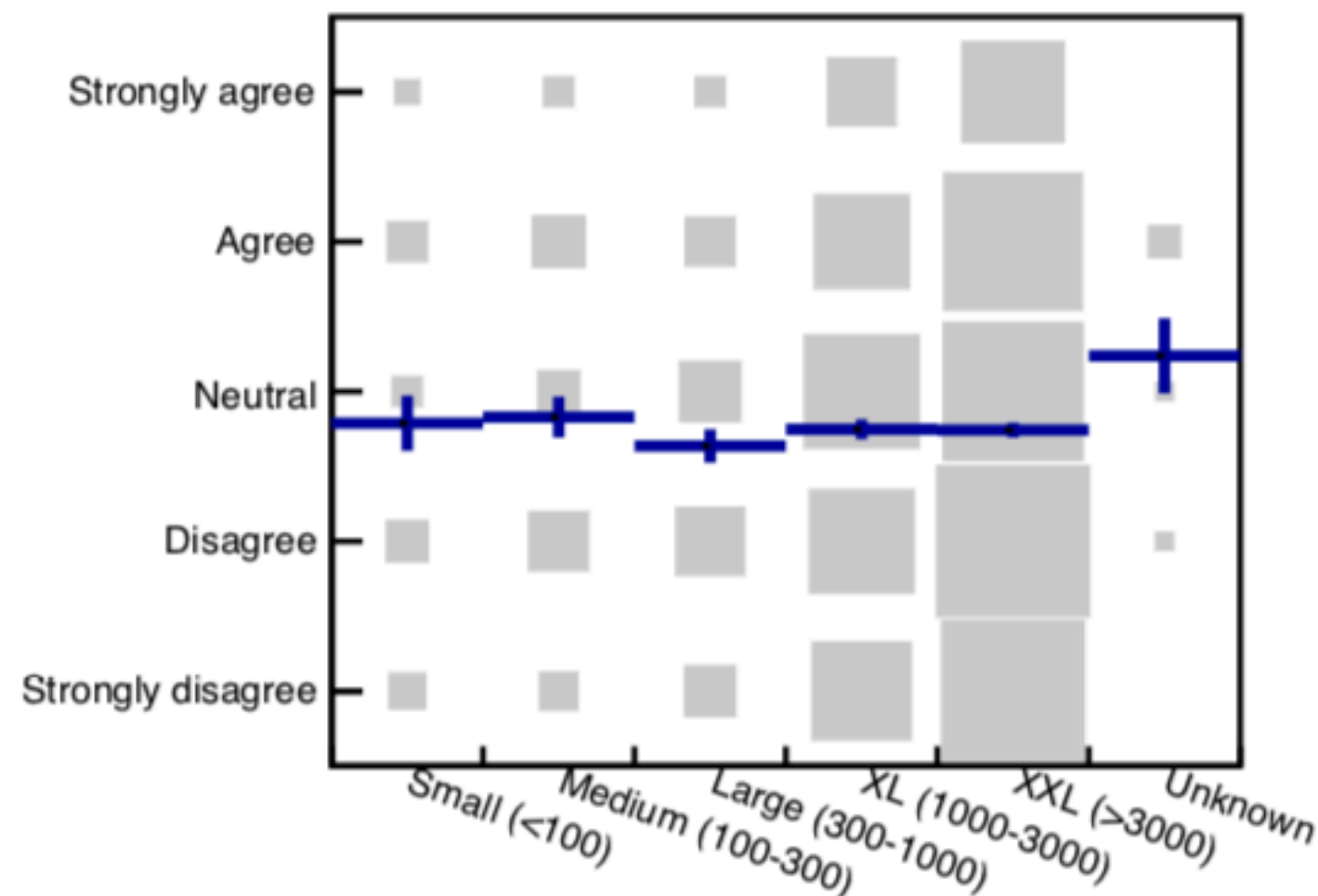


CONFERENCE TALKS - 3

I worry about financial issues for conference talks · split by COUNTRY



responses split by COLLABORATION SIZE

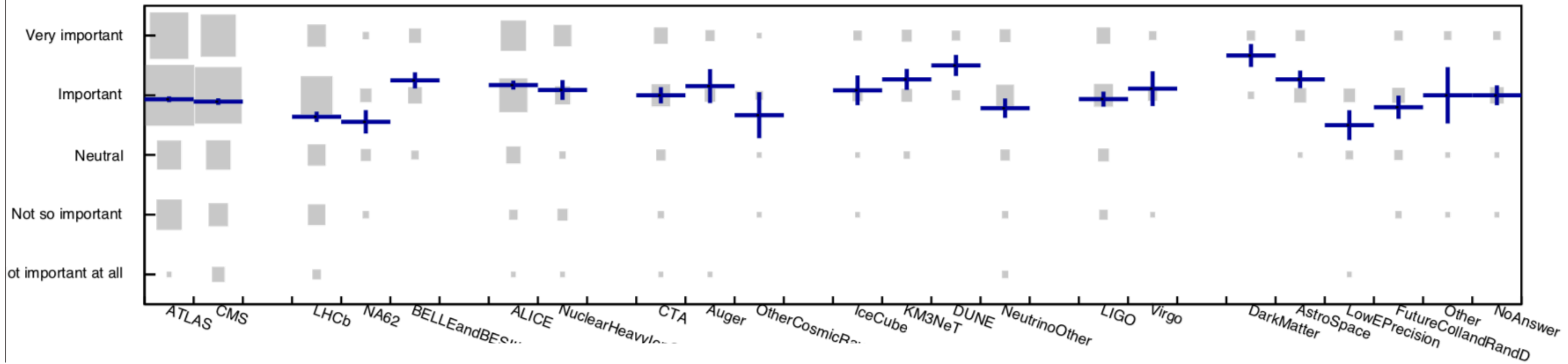


Financial issues show a fairly wide distribution - a fraction of people really worry
 However, overall the community seem to be rich enough
 Differences between countries are clearly visible

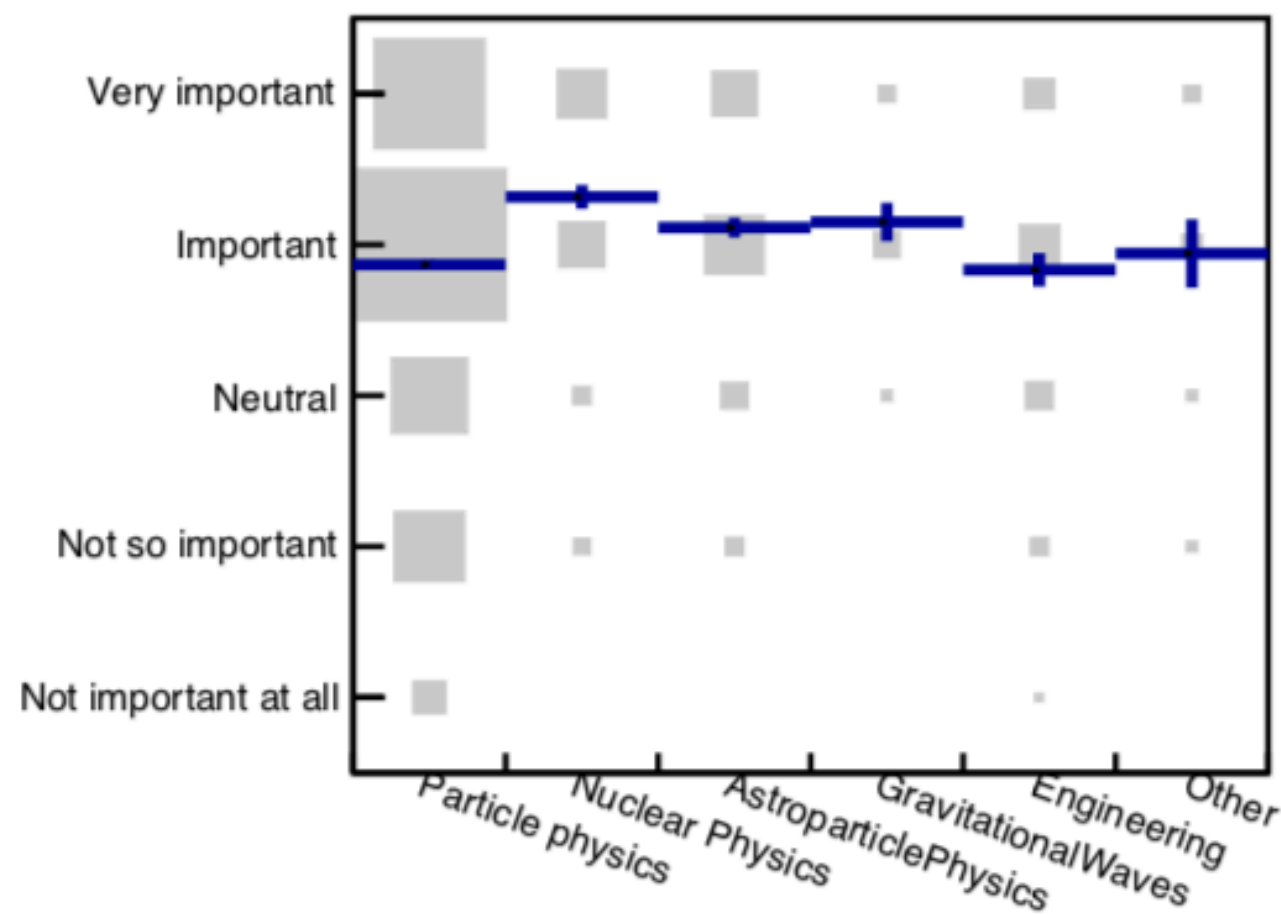


VERIFY SUCCES: CONFERENCE TALKS

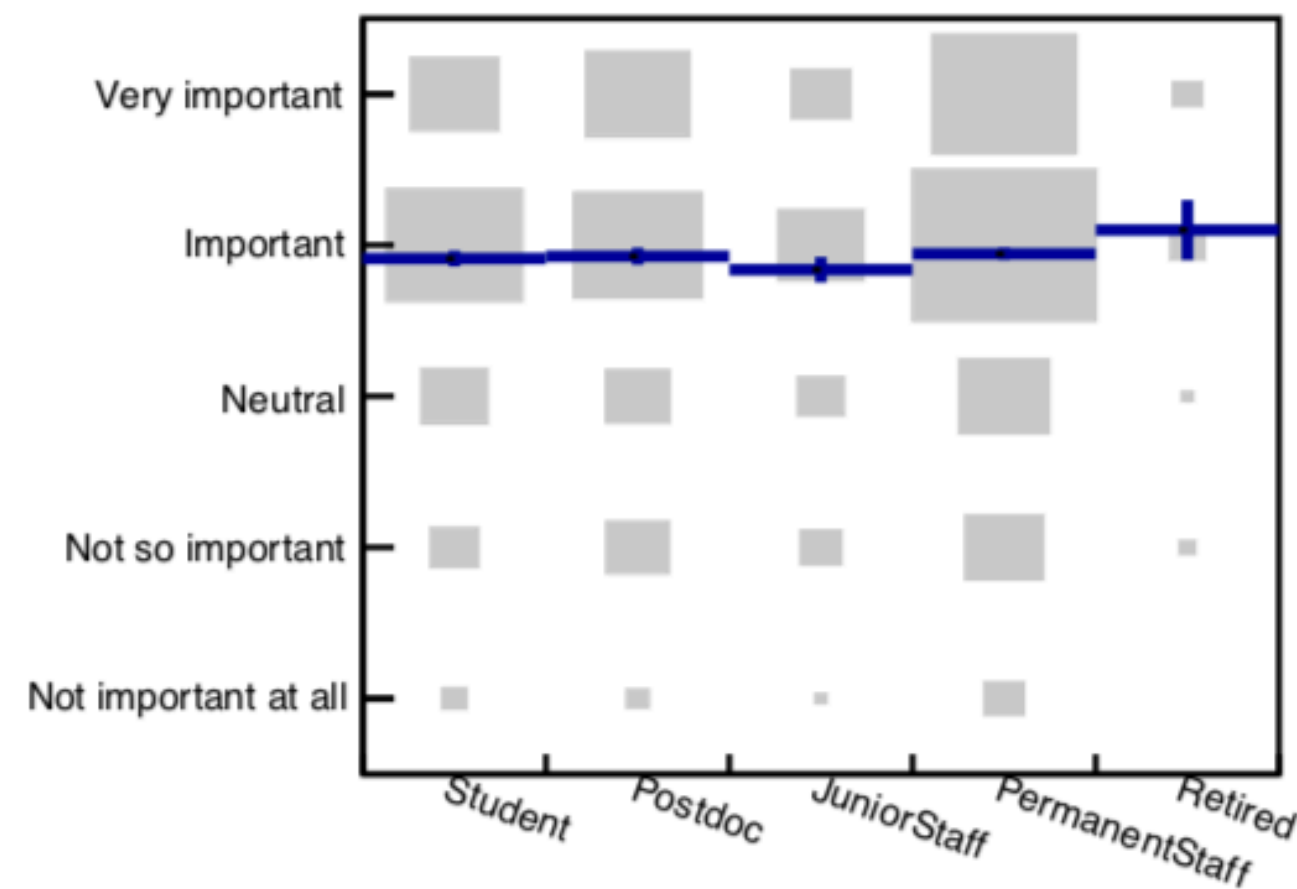
**According to me the following aspects are important to verify the success of a scientist:
Being selected for conference talks**



responses split by DISCIPLINE



responses split by POSITION



Conference talks are considered to be very important to verify success as a scientist
Somewhat less for Particle Physics wrt other communities

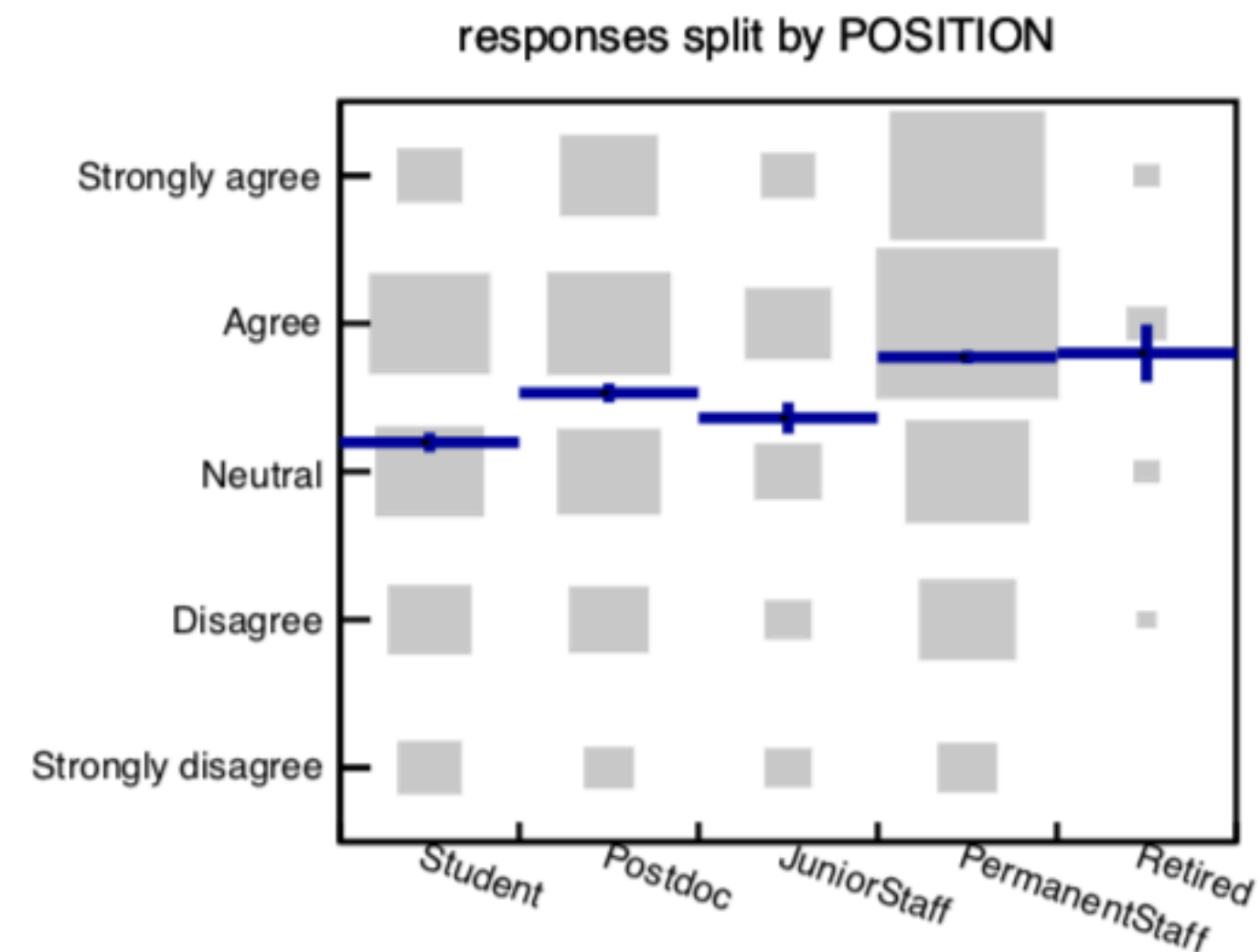
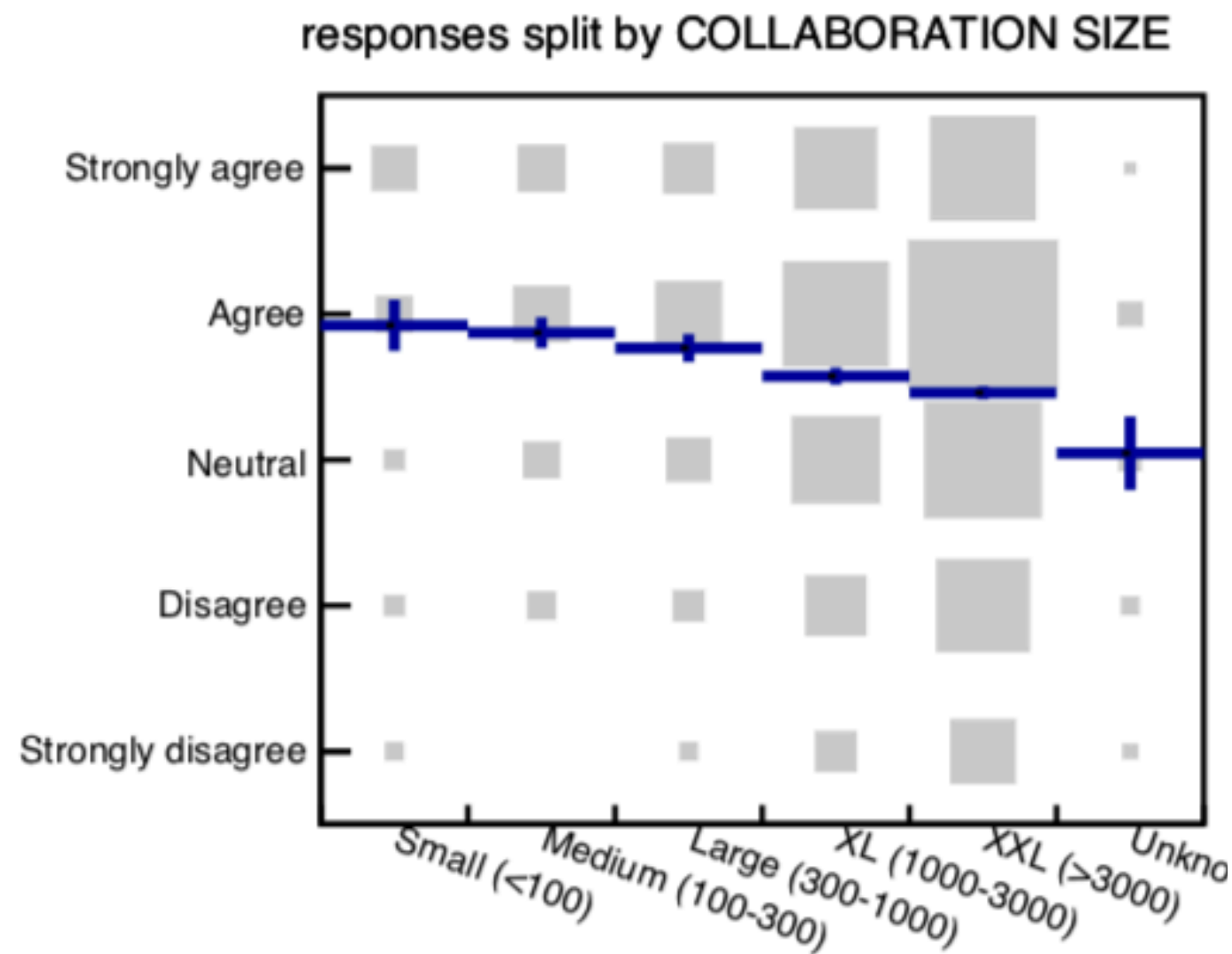


COLLABORATION PAPERS - 1

Which authorship system does your collaboration deploy?

● Alphabetic list of authors	1110
● Alphabetic list of authors, but with a sign-up system for each paper	72
● First author or first author group system	74
● Other	82

For me it is important to be included as author of all collaboration-wide papers



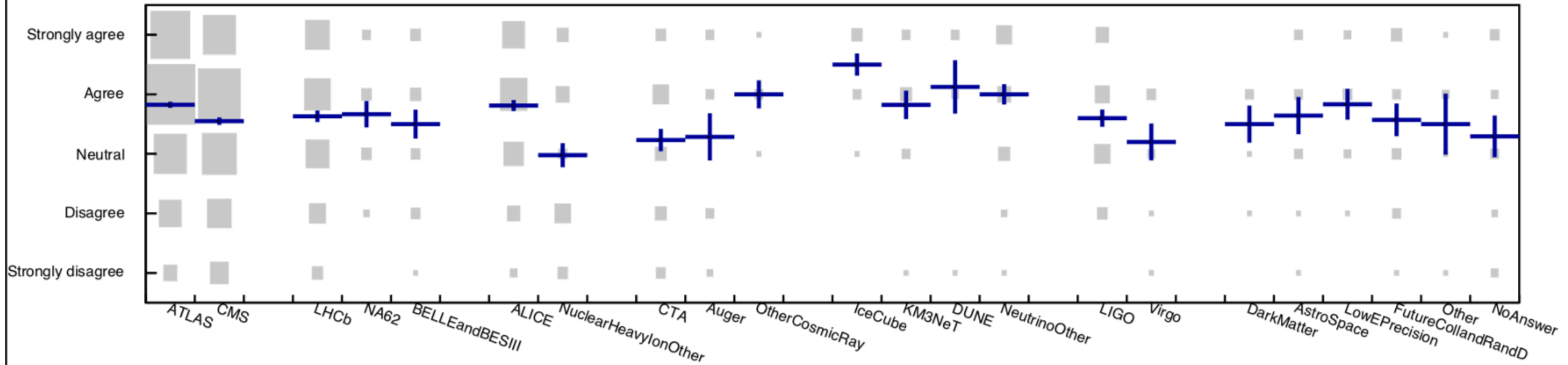
Current situation:

1. Most publications by alphabetic author list
2. It is important to be included as author (somewhat less in large collaborations)

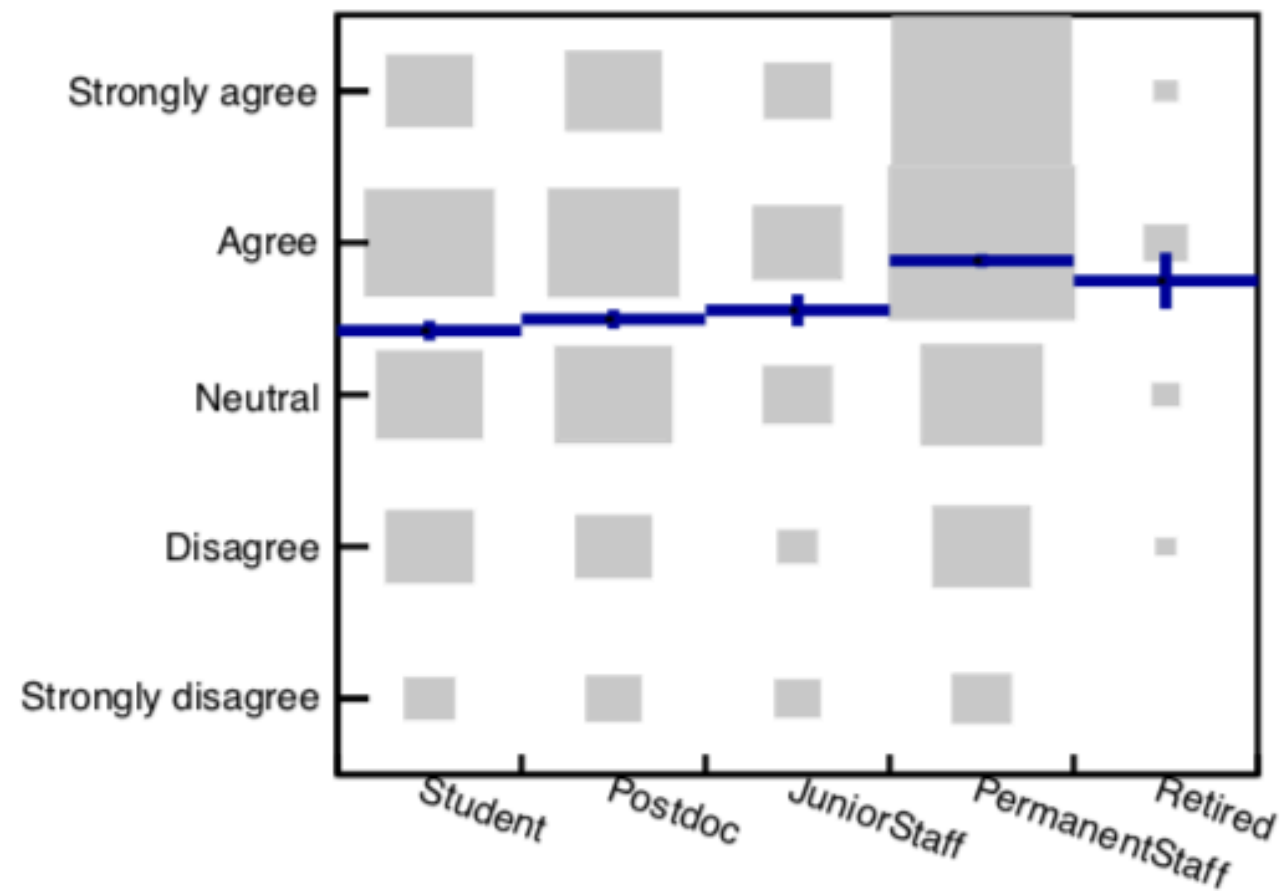


COLLABORATION PAPERS - 2

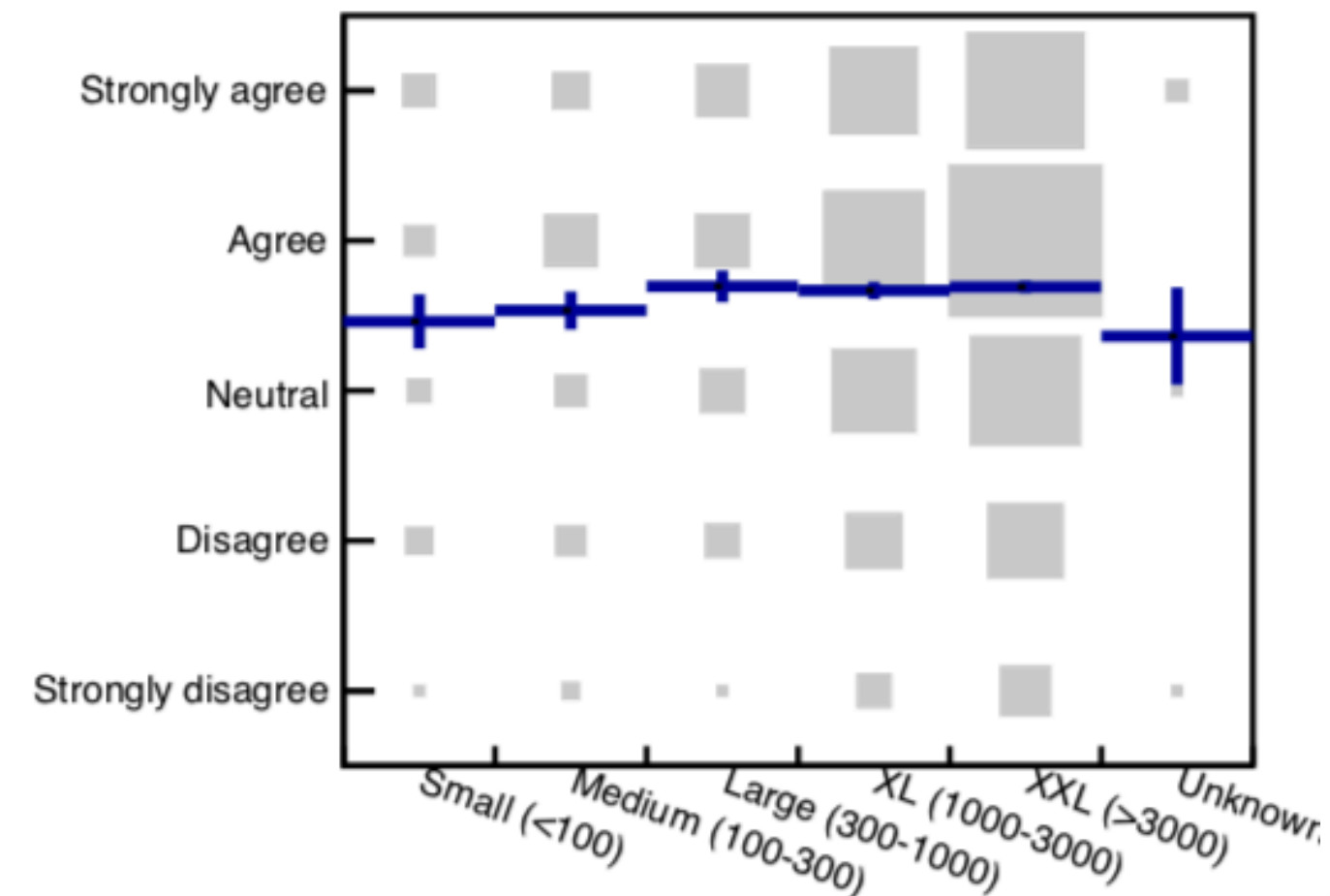
I support the alphabetic listing of all members of the collaboration for each publication



responses split by POSITION



responses split by COLLABORATION SIZE

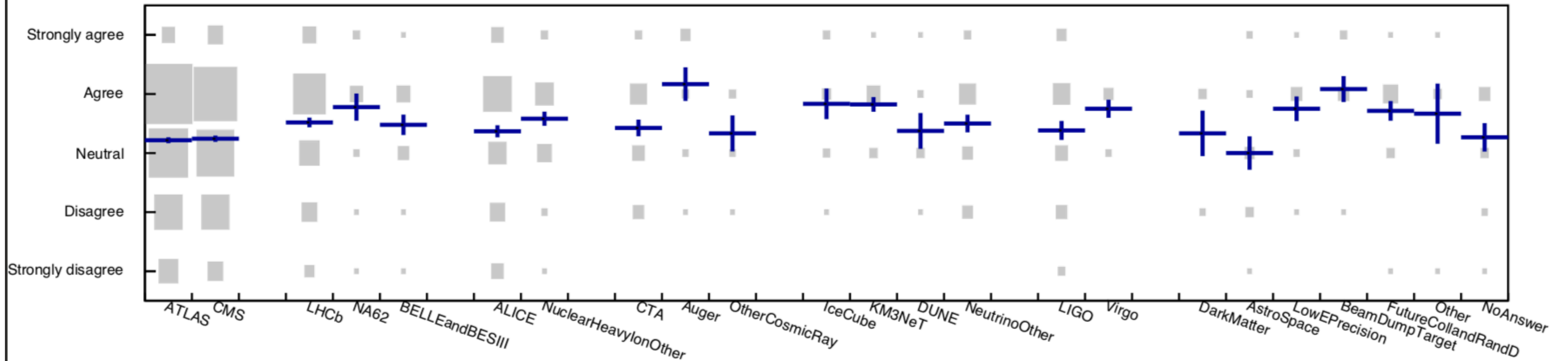


One of the surprises of this survey:
 Alphabetic ordering of the publications seems widely supported -
 - among all career stages
 (especially permanent staff agrees)
 - independent of the collaboration size
 Want to be recognized as member of collaboration

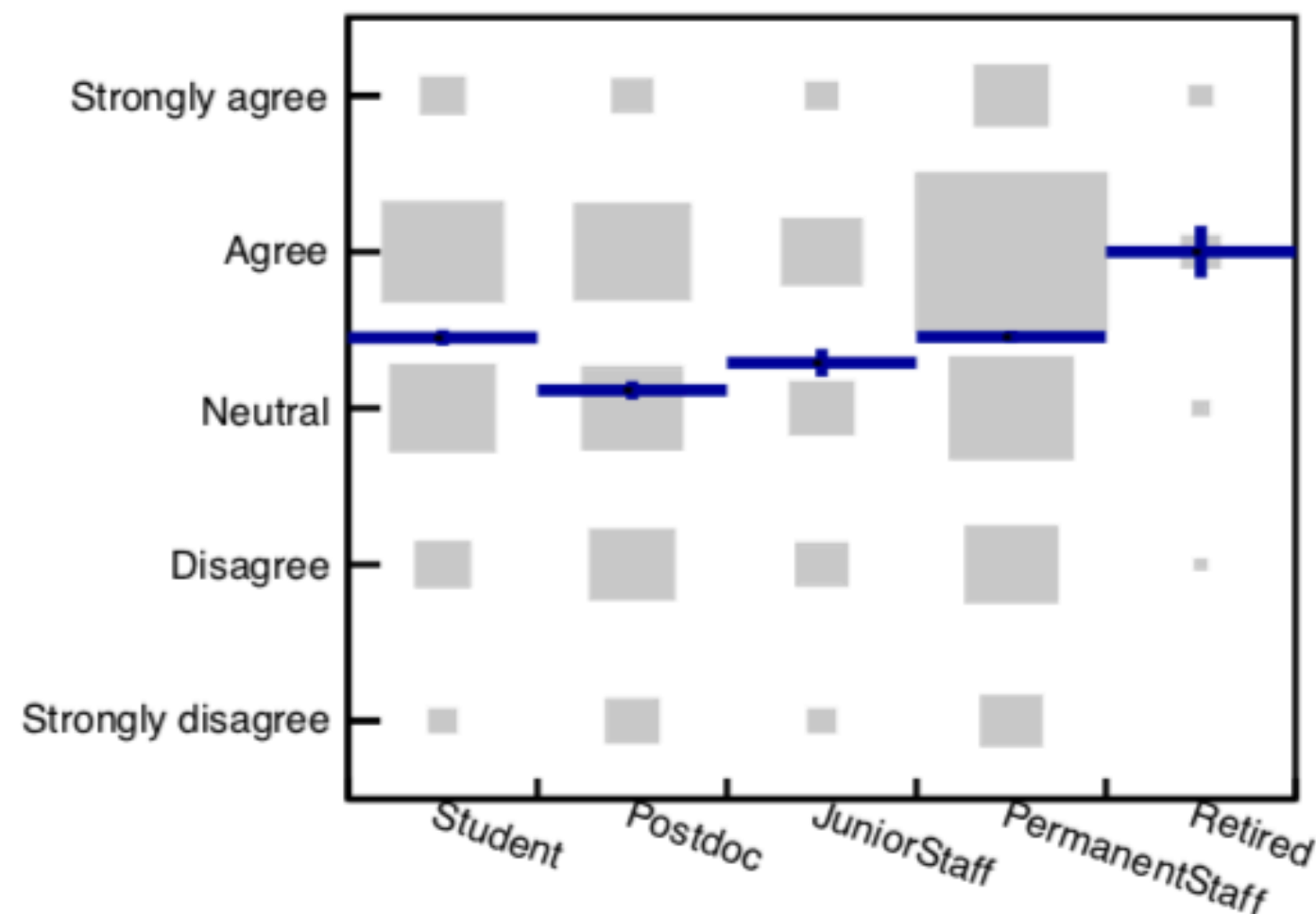


ASSIGNED RESPONSIBILITY IN SCIENTIFIC COLLAB -1

I perceive the assignment of positions with responsibility in my collaboration (e.g. conveners) as fair



responses split by POSITION



Most cases positive. However, score of +2 is not populated, especially in large collaborations. Postdocs and juniors score less positive

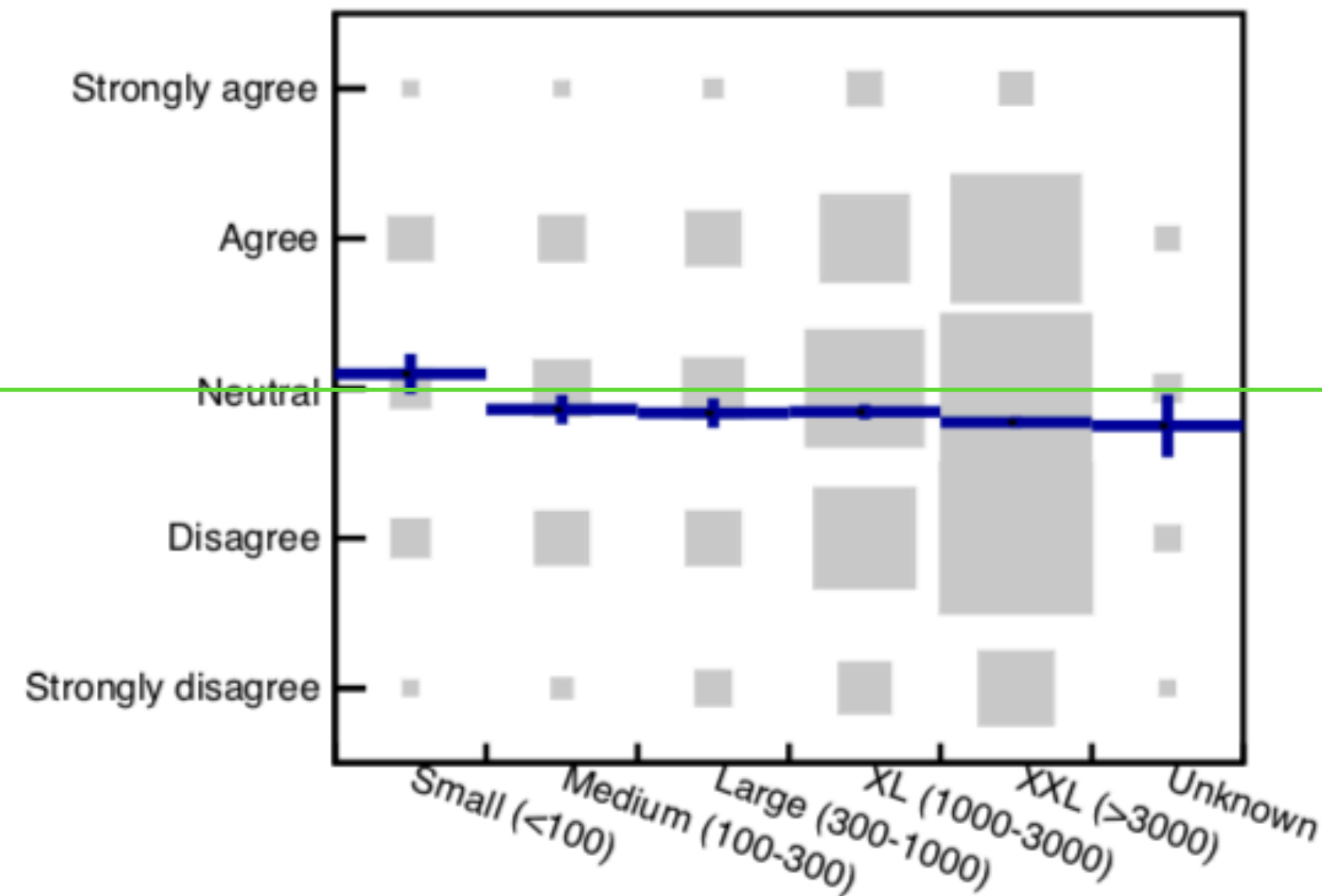


ASSIGNED RESPONSIBILITY IN SCIENTIFIC COLLAB -2

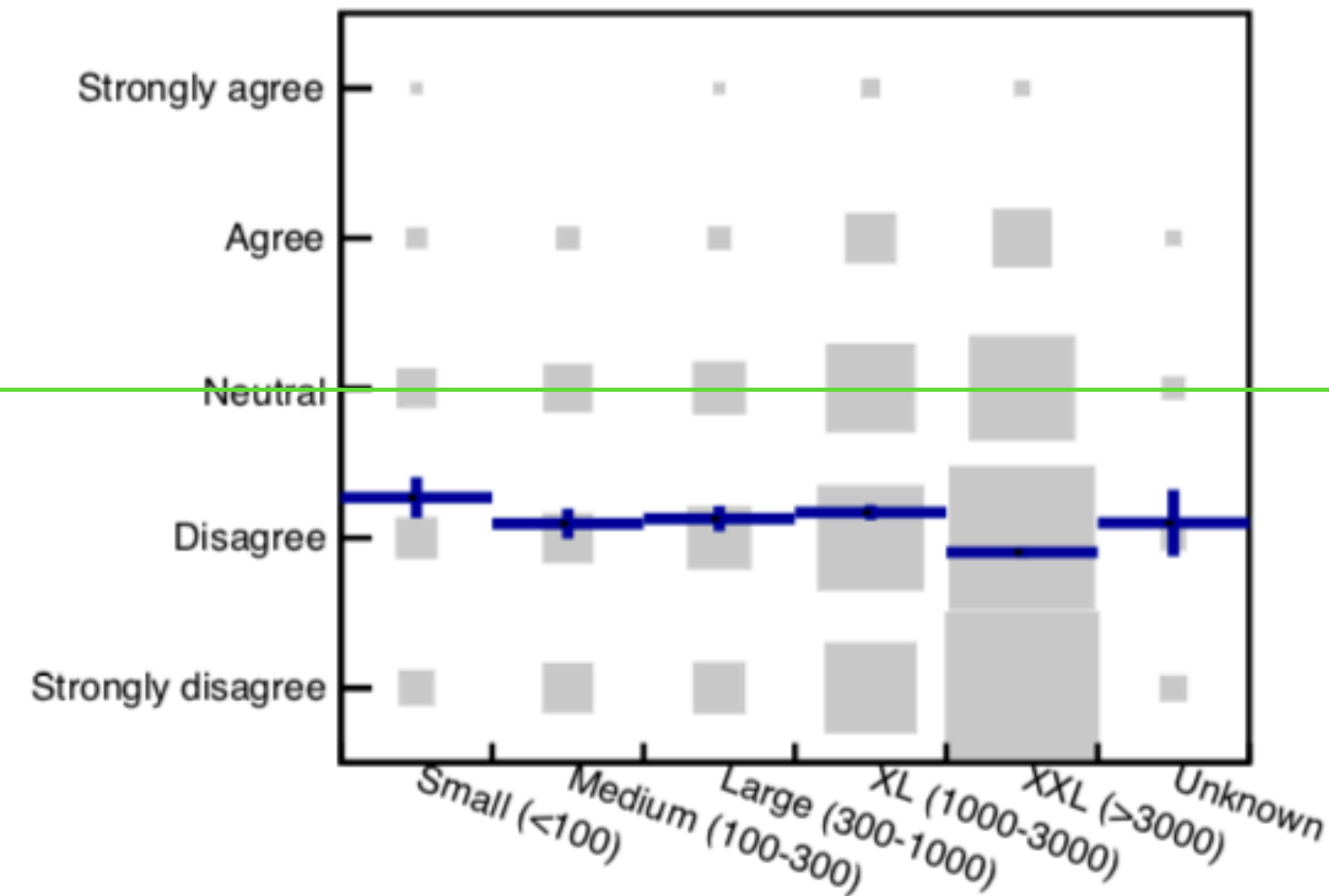
I perceive that the profiles of positions with responsibility are well known outside my collaboration

I perceive that the profiles of positions with responsibility are well known outside the particle physics community

responses split by COLLABORATION SIZE



responses split by COLLABORATION SIZE



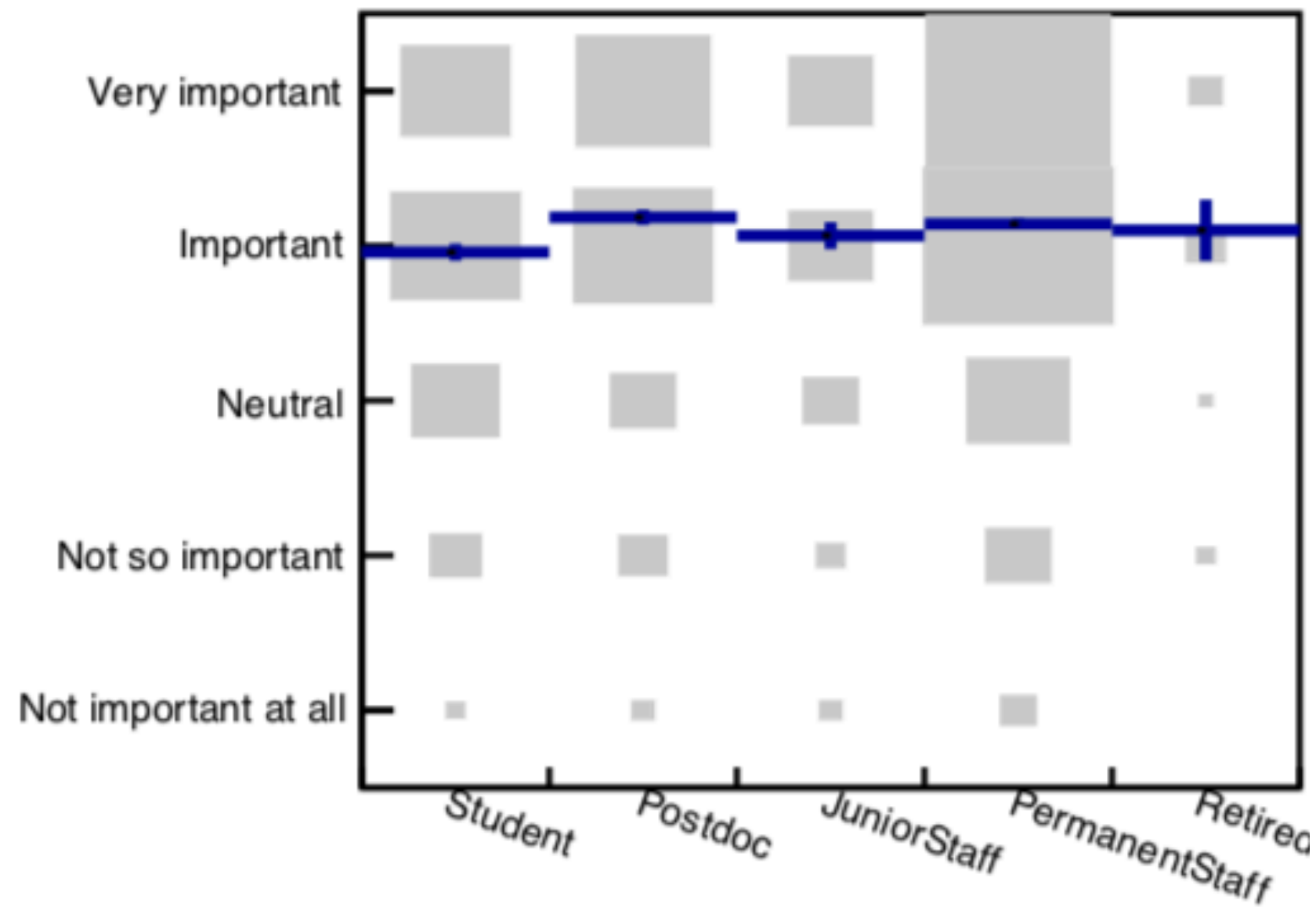
The further 'outside' the inner circle, the less well known our activities are perceived to be known to others



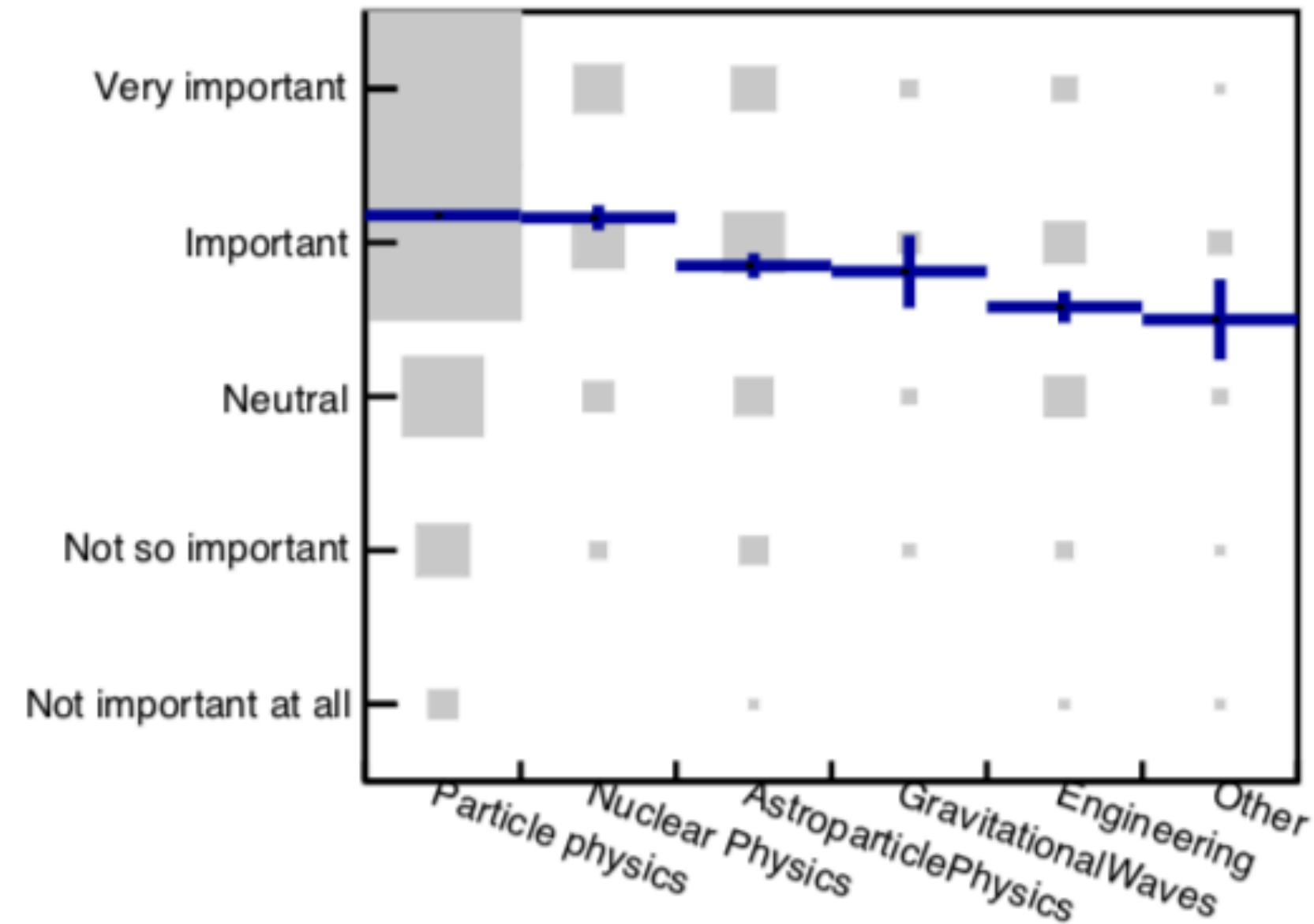
VERIFY SUCCESS: CONVENORS

*According to me the following aspects are important to verify the success of a scientist:
Selection as a convenor or equivalent*

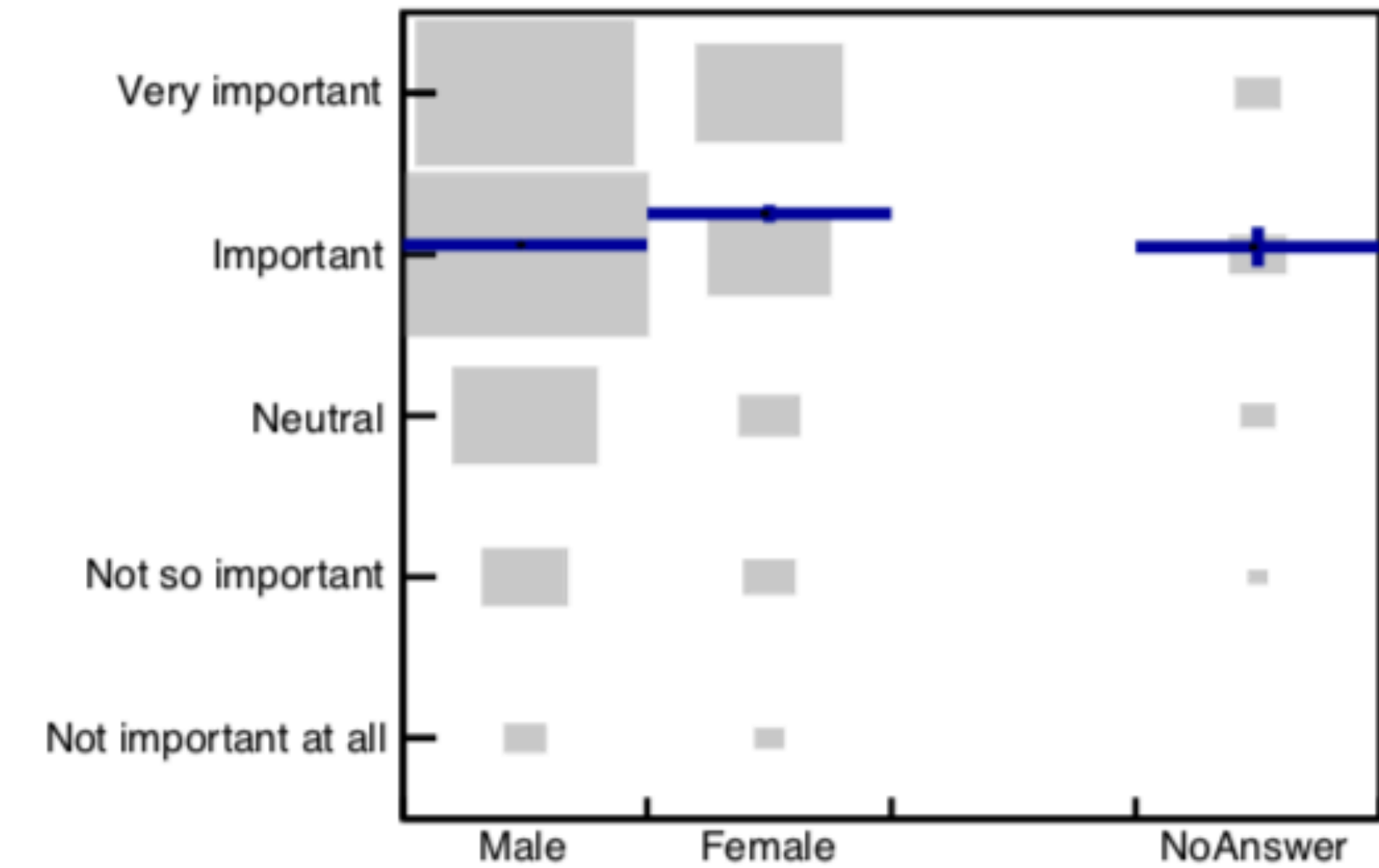
responses split by POSITION



responses split by DISCIPLINE



responses split by GENDER

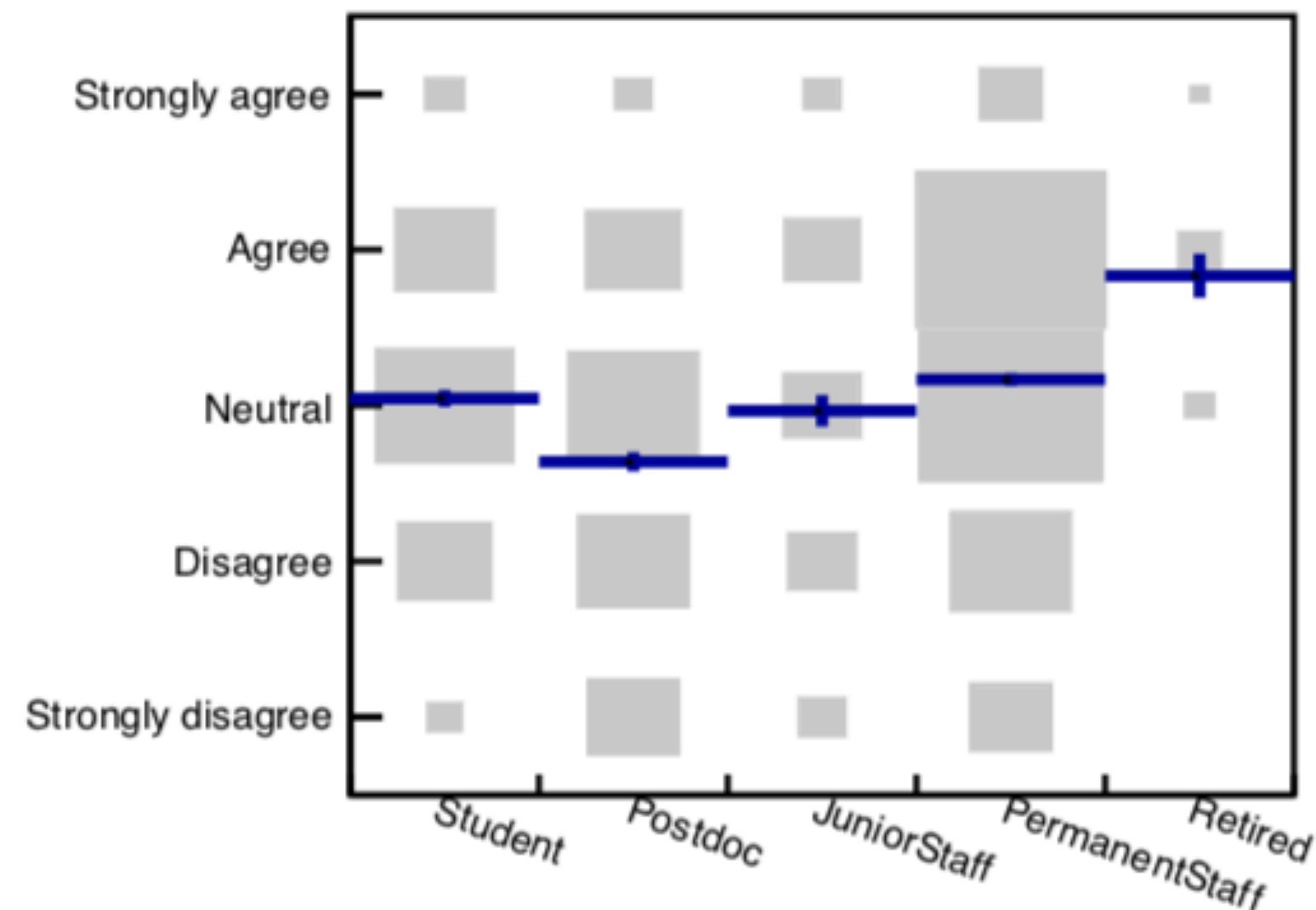
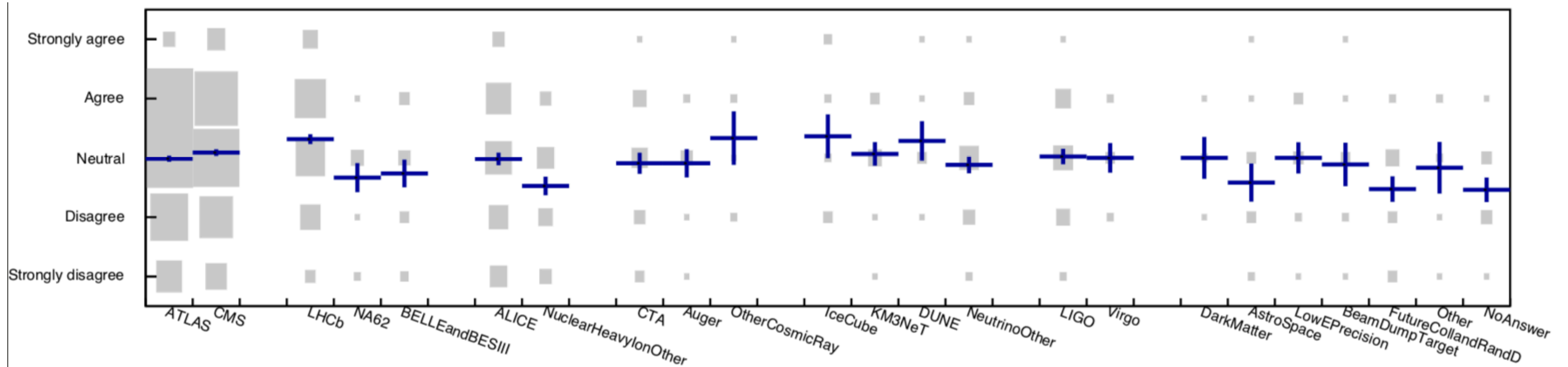


Convenorship is an important issue,
more so for Particle Physics than other disciplines
Females score slightly more positive



AWARDS AND PRIZES - 1

I perceive the process of nominations for awards as sufficiently transparent and accessible in my collaboration

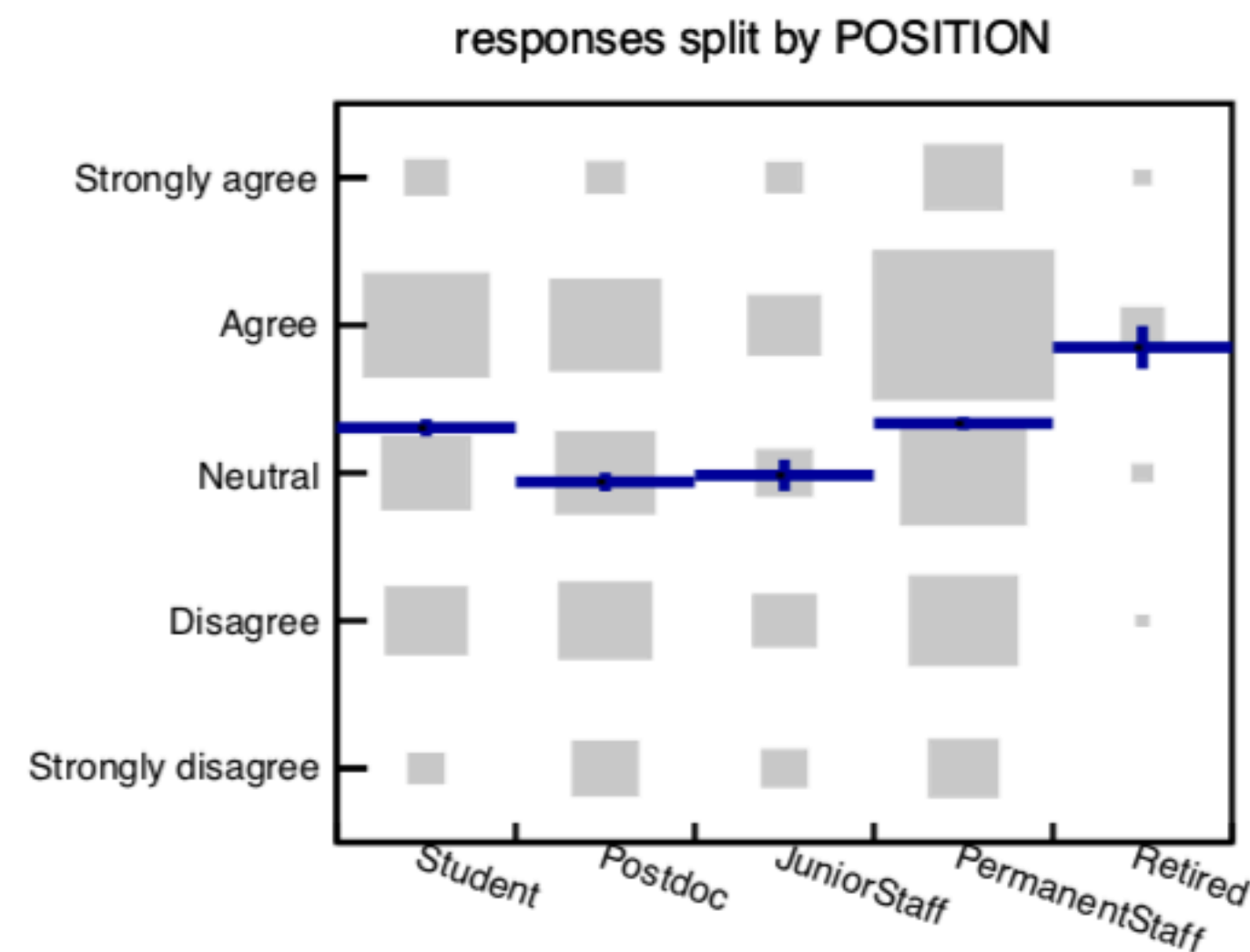
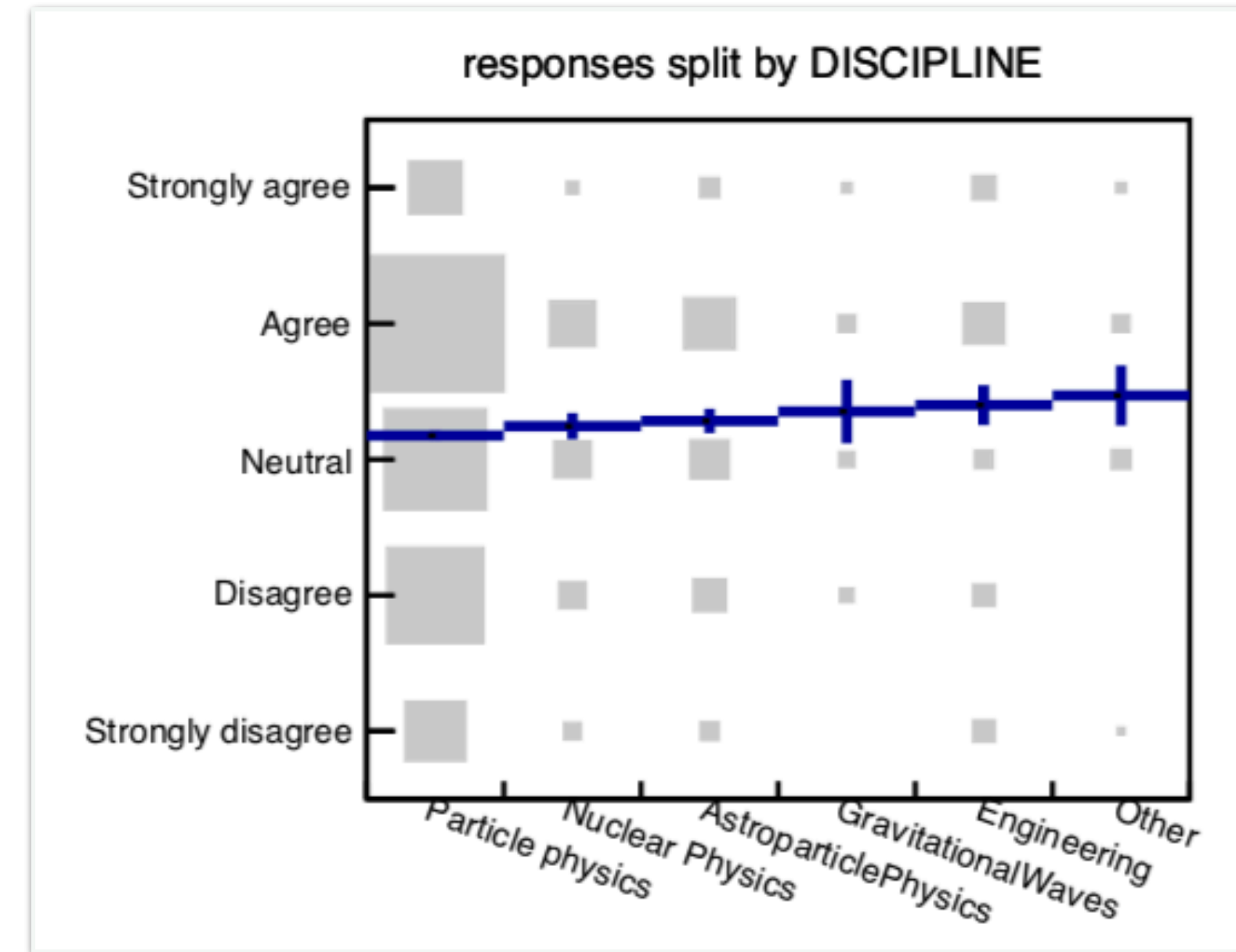
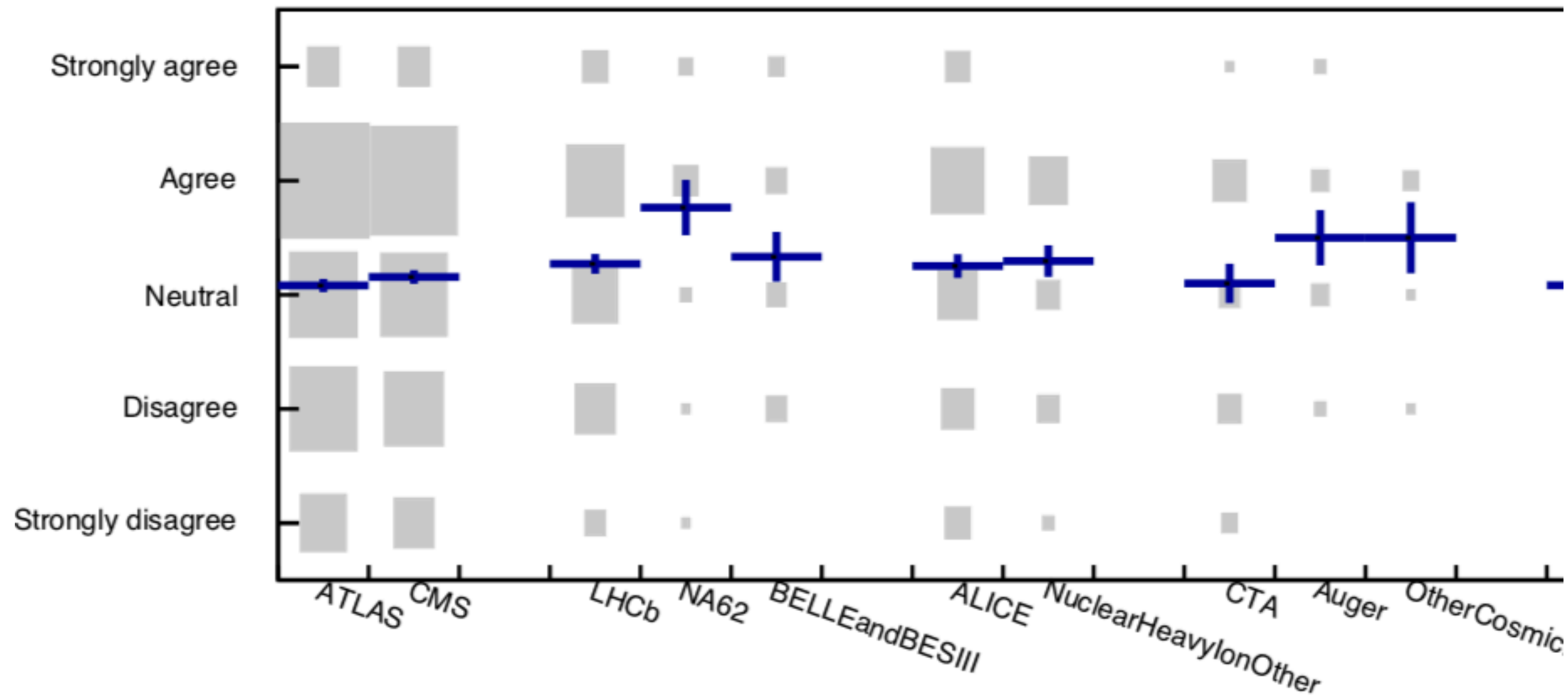


Process of awards fairly neutral. Not many scores are maximal.
 Large mismatch between 'receivers' (e.g. postdocs) and 'givers' (retired people)



TECHNICAL CONTRIBUTION (HW, SW, OPERATIONS,...)

I perceive that my technical contributions get adequate recognition in my collaboration

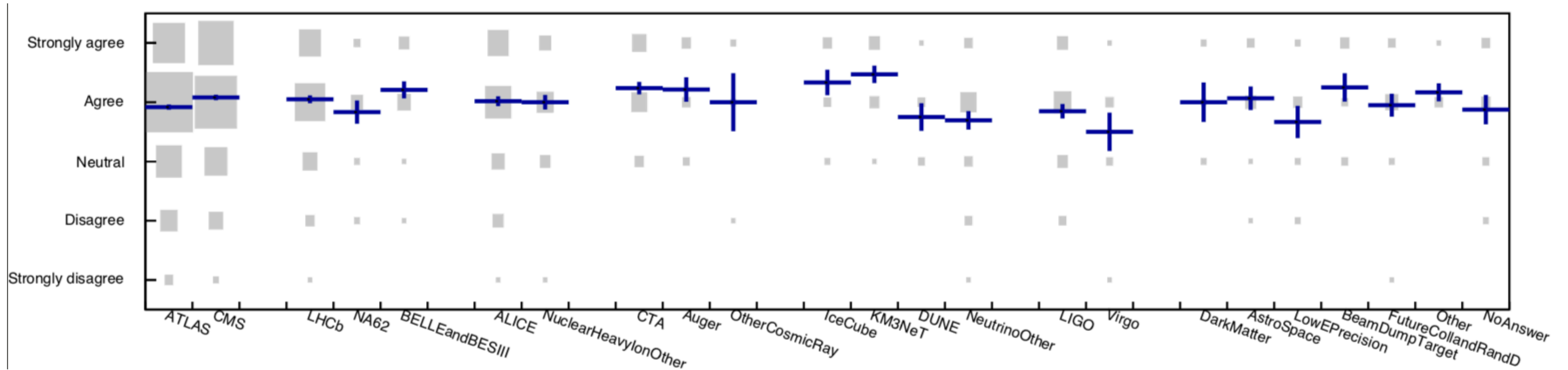


Similar trends among collaborations
Intermediate career people score lower than permanent staff

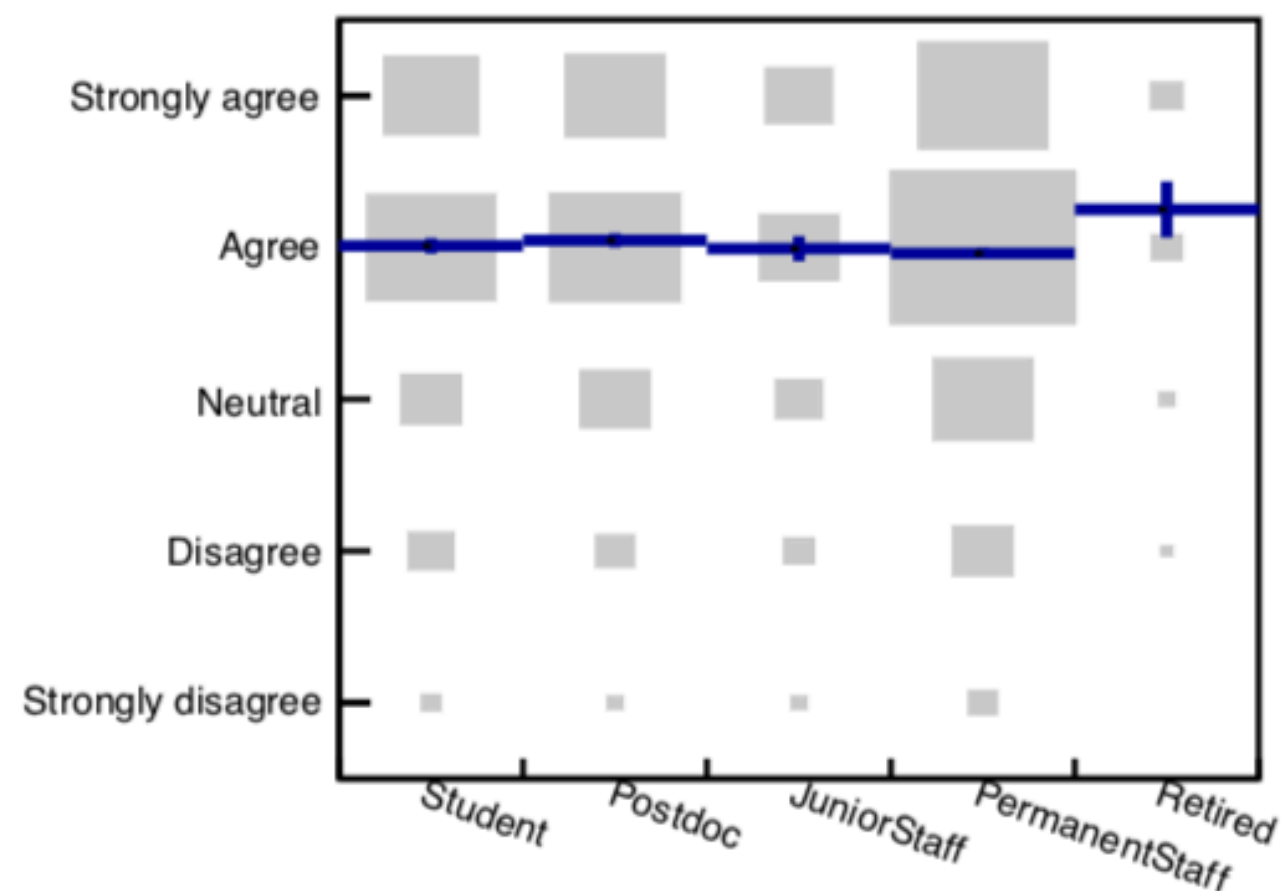


INTERNAL NOTES - 1

Scientific notes on analysis methods, detector and physics simulations, novel algorithms, software developments, etc. would be valuable for me as a new class of open publications to recognise individual contributions



responses split by POSITION

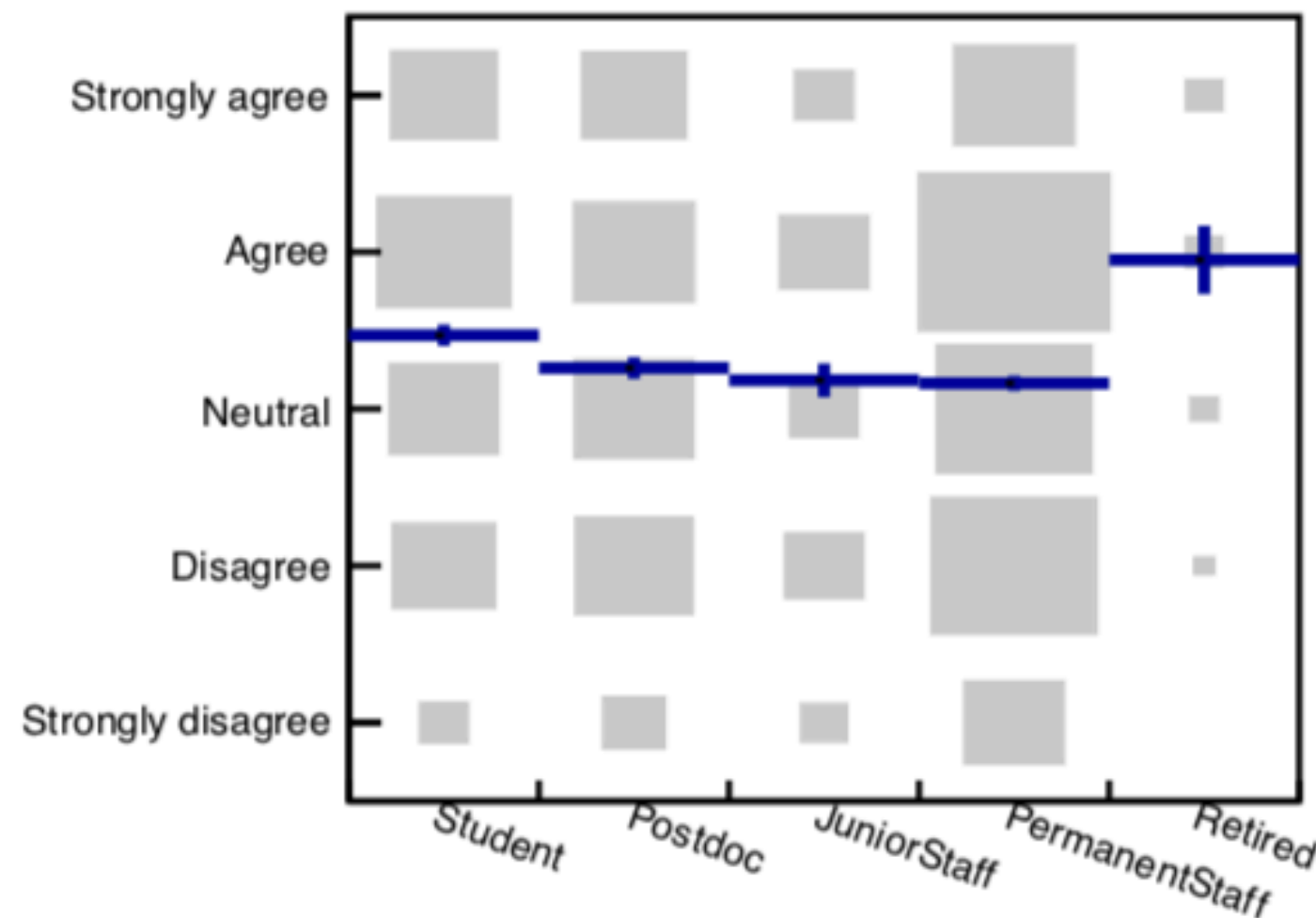
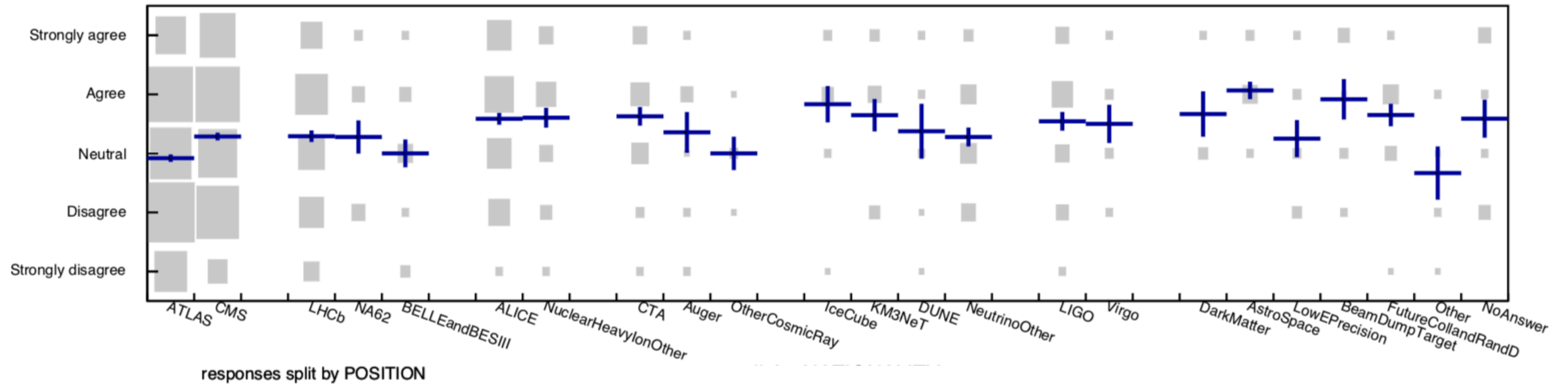


This shows a strong signal: Community scores very high, in favor of these open publications on novel and creative ideas



INTERNAL NOTES - 2

Internal notes (supporting a publication) should be made public

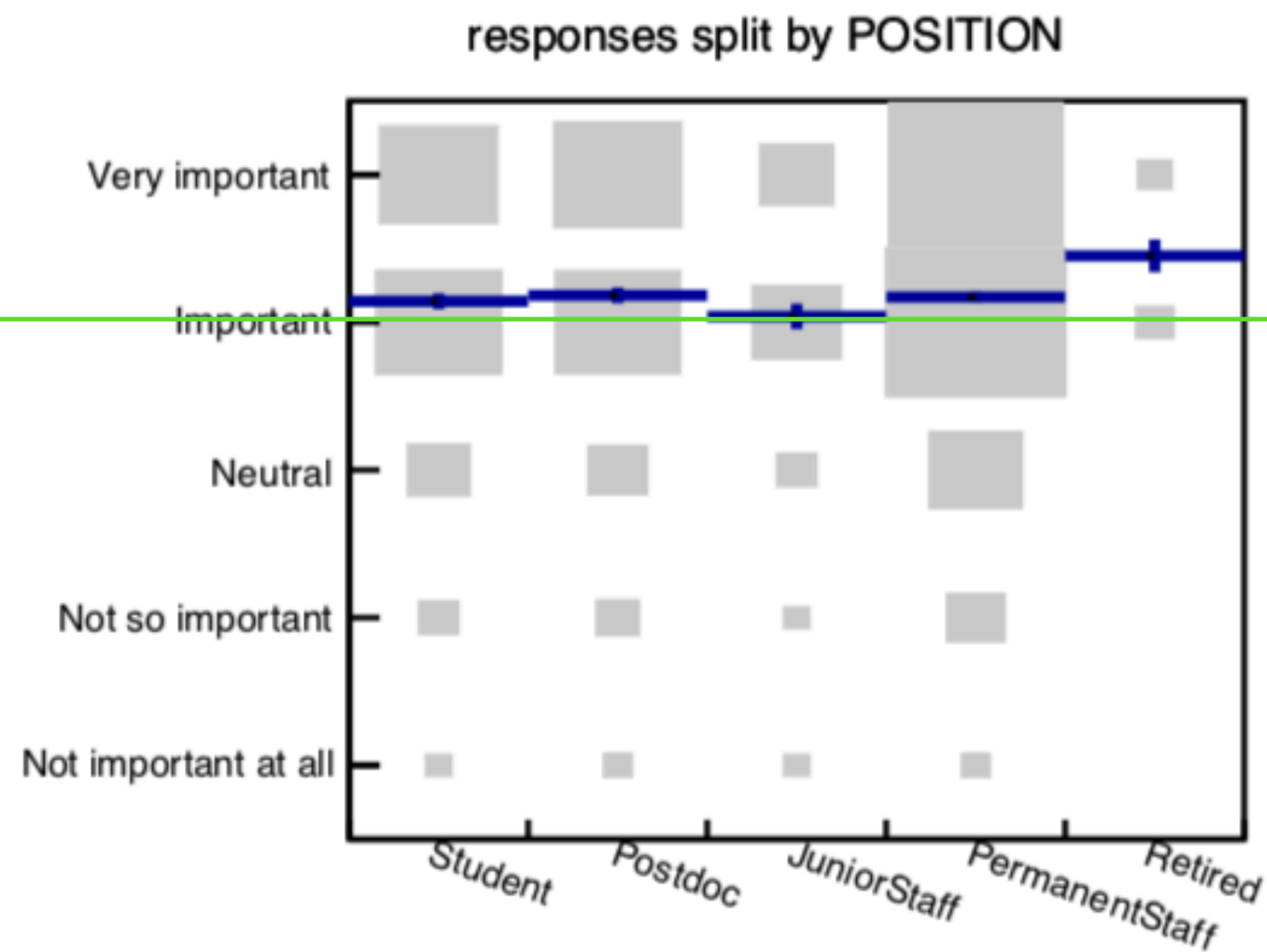


On this issue the community is very divided.
 Is it a good idea to make internal notes public?
 One of the largest differences in the mean value between ATLAS and CMS

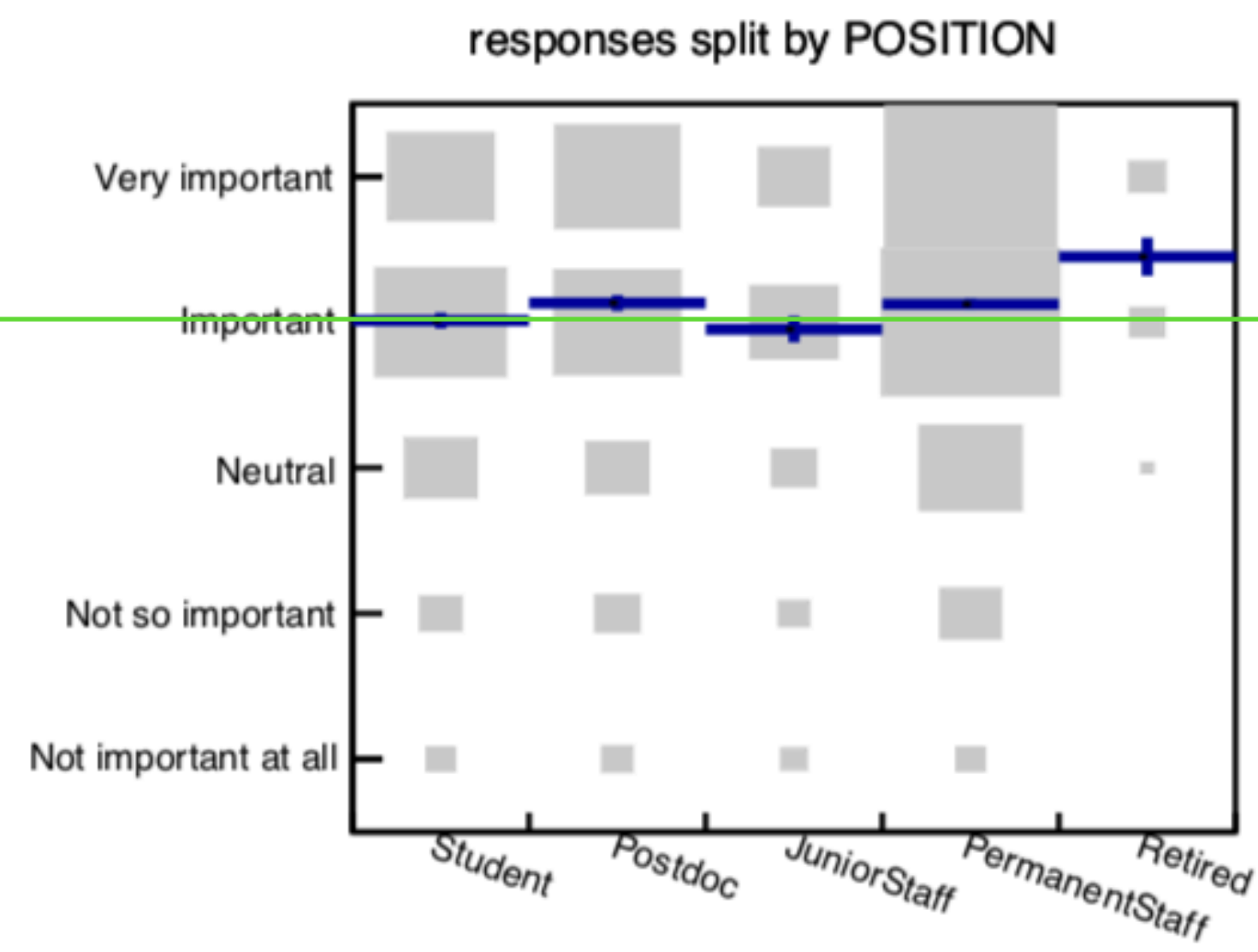


VERIFY SUCCESS OF A SCIENTIST

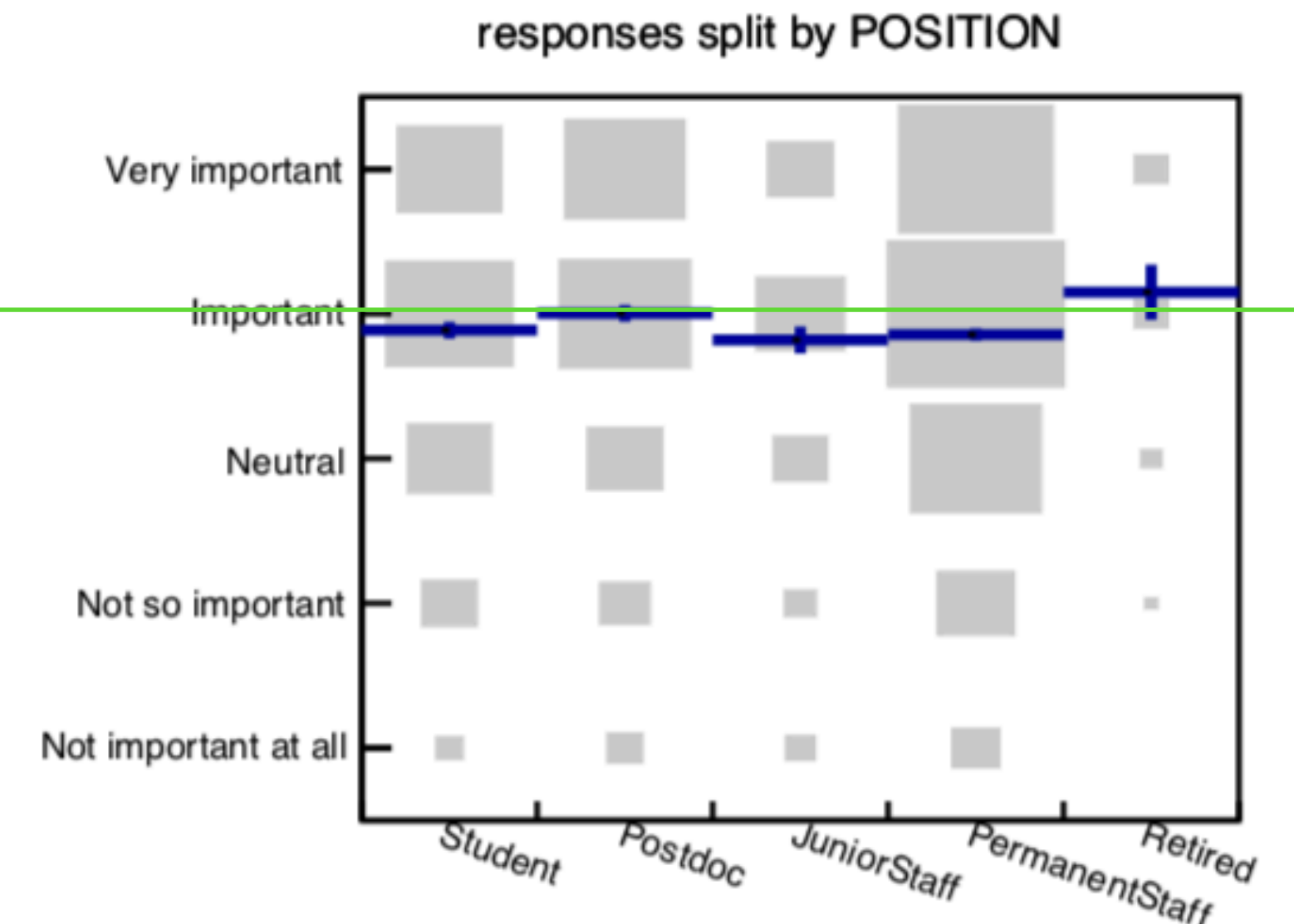
Receiving recognition for innovative work via an award



Receiving recognition for technical work via an award



Receiving recognition for hard work via an award

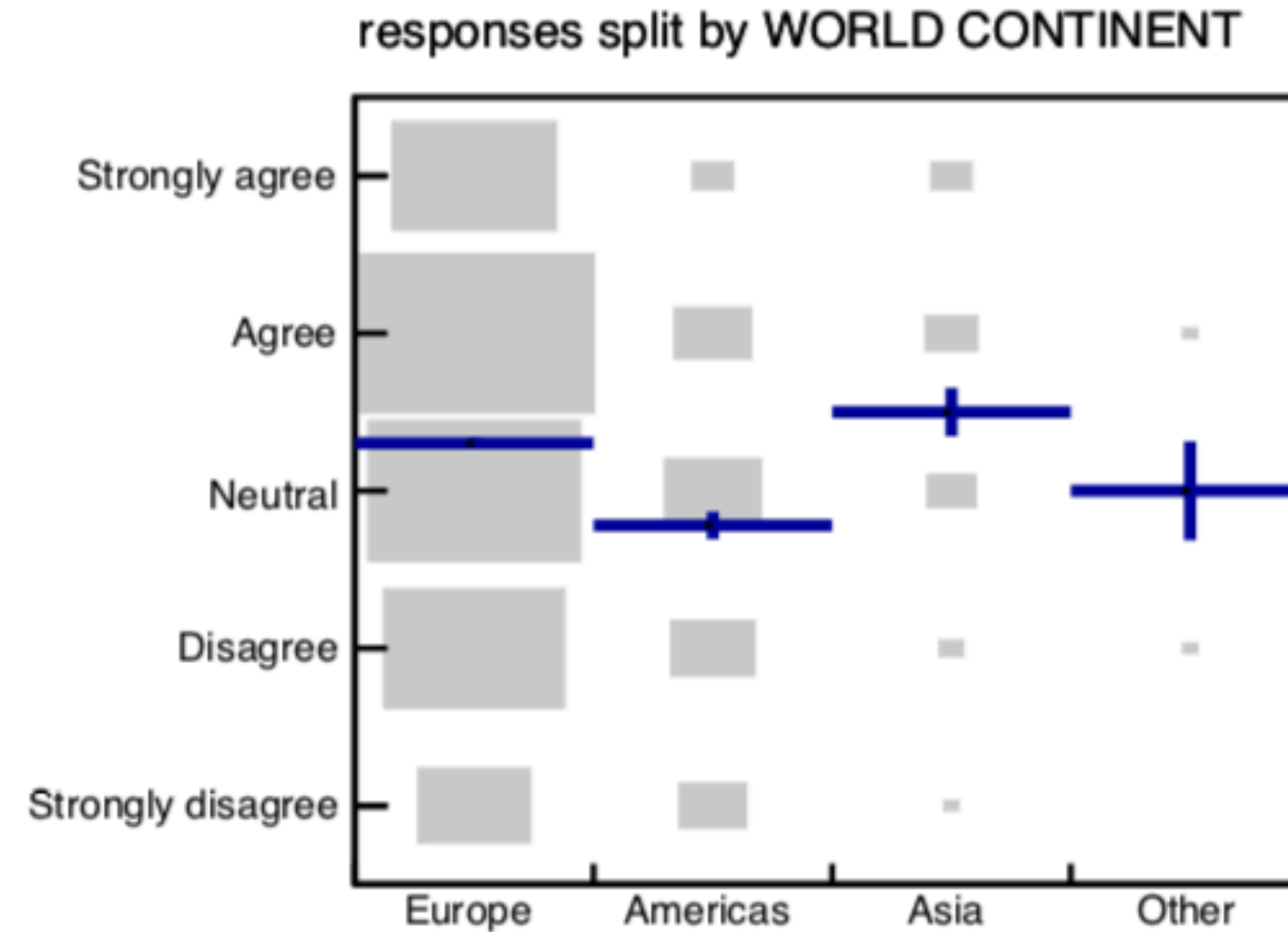
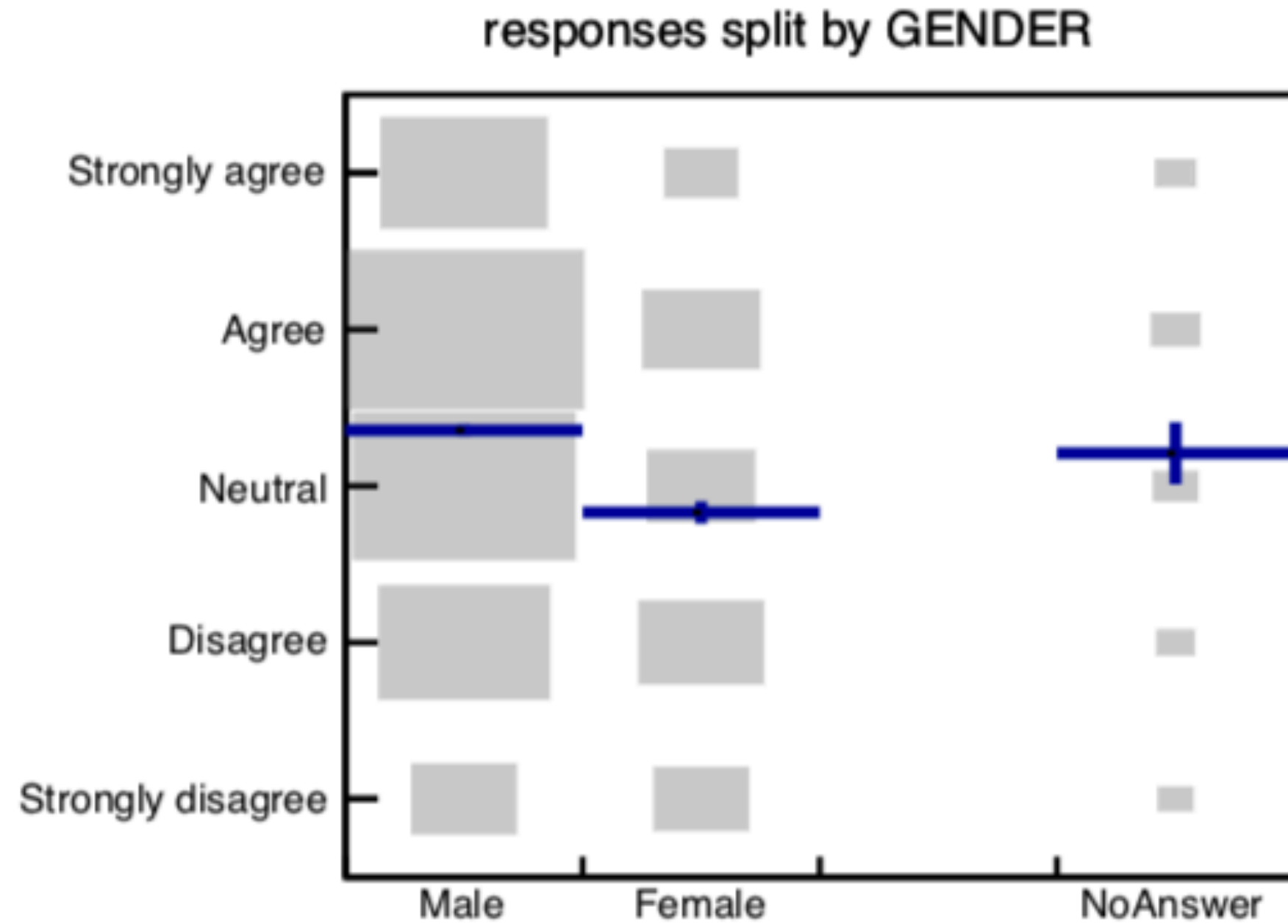


Success as scientist via an award is important, no matter what award it is
Innovative work is the most satisfying



GENDER BIAS

I perceive no gender bias in the recognition of individual achievements



There is a perceived gender bias
The score shows a broad distribution
Is there a cultural aspect?

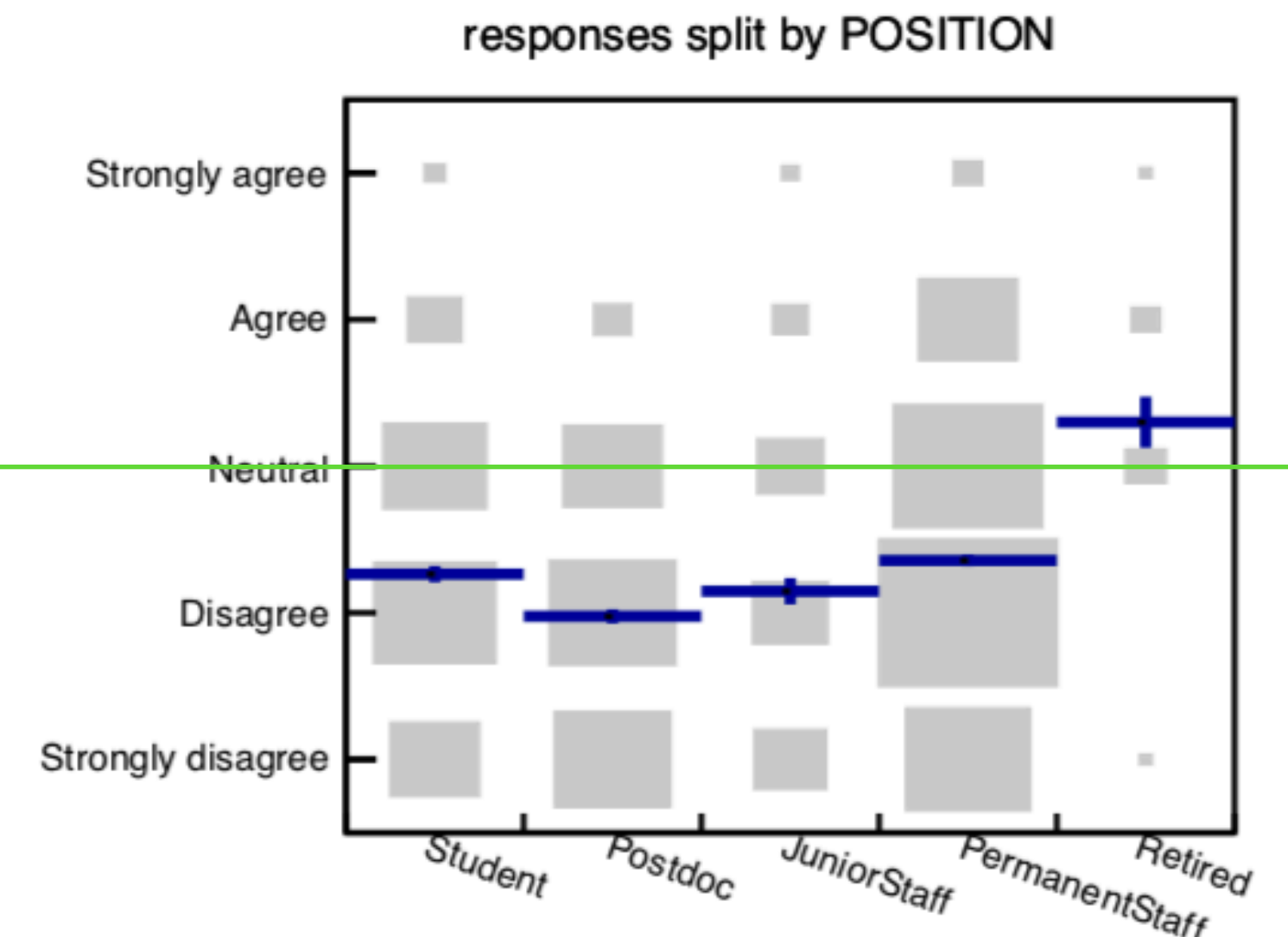
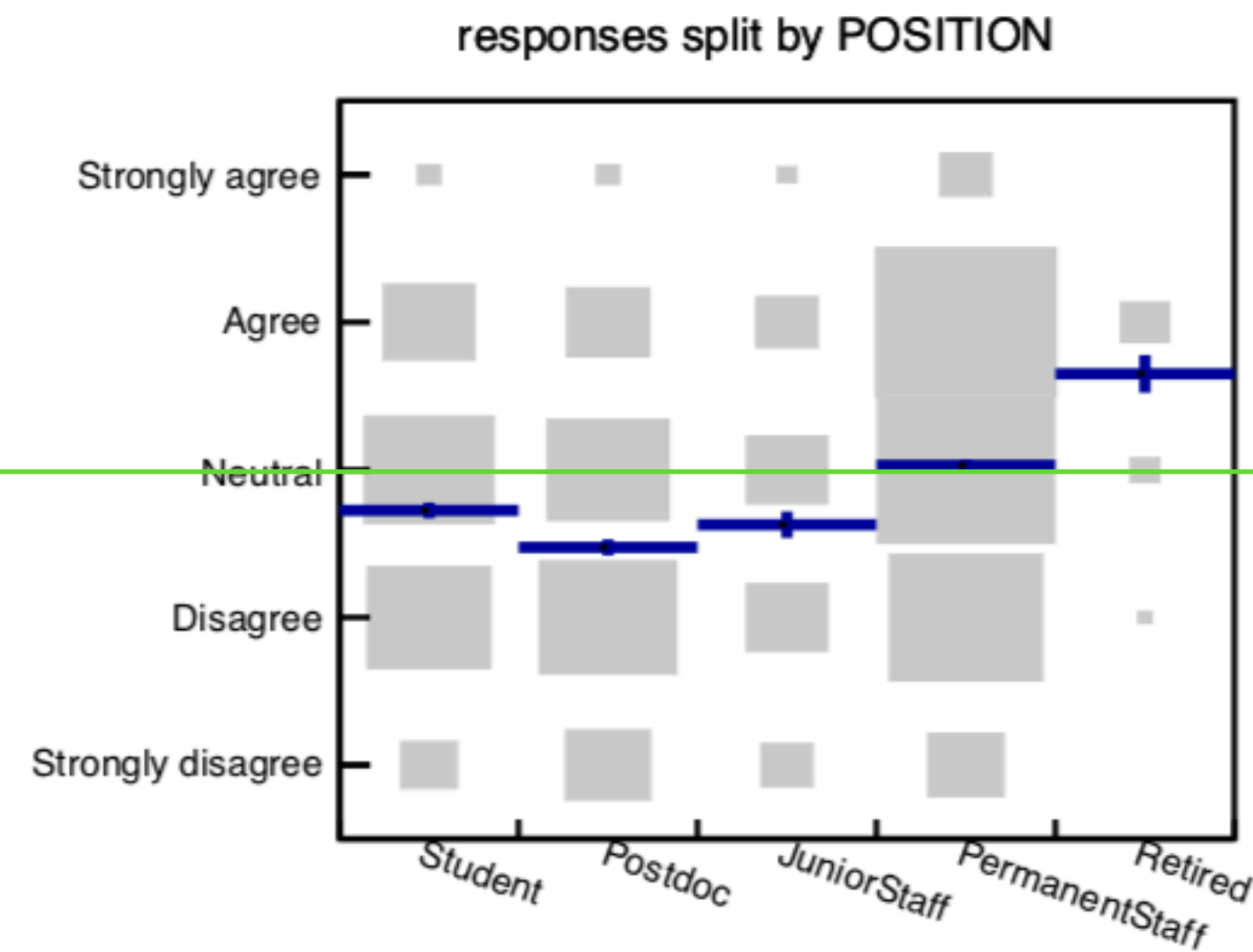
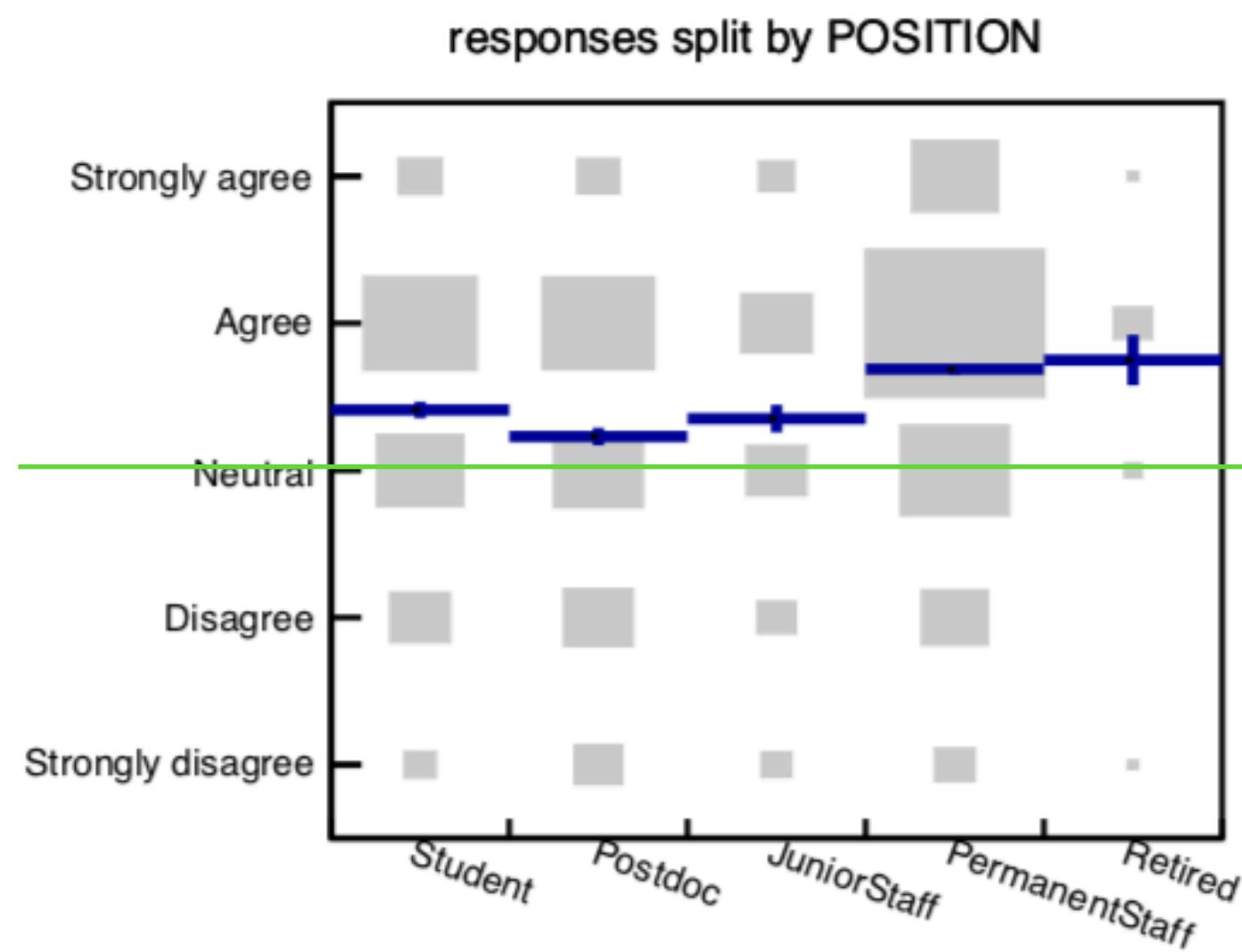


INDIVIDUAL ASSESSMENTS

Your individual contributions are recognized well among the members of your collaboration

The high-energy physics scientific community outside my collaboration is provided with sufficient information to assess me

The non-HEP scientific community is provided with sufficient information to assess me



Very difficult to be assessed correctly outside the community



FINAL REMARKS

Survey was generally well received

- Not many complaints about the survey itself

Encouraging to see that people found time to fill in the survey

- The topic is relevant and deserves attention
 - Still, a large fraction of HEP physicists did not respond to survey

The raw data will **not** become publicly available

- No tracing to individuals possible
- Only generated plots will become publicly available
 - Collaboration or organization can ask for additional specific plots
 - Contact person: ECFA chair Jorgen d'Hondt

FINAL REMARKS

What are most important issues that can be changed?

- Debate with panel and with collaborations
- Panel discussions with e.g. Jo van den Brand (Barcelona) and Marcel Merk (CERN)

We have to make sure that the messages are picked up

- Initiate discussions in collaborations
- Exchange methods and best practice example among the community
- ATLAS and CMS have agreed to actively participate

Nikhef in good position to push the discussion - so speak up!

Stay tuned for more recommendations and changes

CERN COUNCIL IN AMSTERDAM - OCTOBER 1954





Sijbrand de Jong - President CERN council 2016-2018

Martin Steinacher

Charlotte Warakaulle

Frederick Bordry

Eckhard Elsen



Fabiola Gianotti



Launch of the civil engineering work for the High Luminosity LHC Project
Friday, 15 June 2018

*Inauguration des travaux de génie civil du projet LHC à Haute Luminosité
Vendredi 15 juin 2018*



Last week at CERN - Ursula Bassler takes over from Sijbrand de Jong