Joint Student-Faculty Committee
2025 Annual Report
(Academic Year: 2023/2024)

Disclaimer
This is an unofficial English translation of the original report, intended to assist non-Italian speakers. The translation was performed on July 4, 2025, by Giovanni Bussi using ChatGPT, by pasting the original Markdown text in consecutive parts into a chat. Images were subsequently added manually. In case of doubt or ambiguity, the original Italian version should be considered the authoritative source.

This document constitutes the Annual Report of the Joint Student-Faculty Committee, in accordance with the SISSA Quality Policy Guidelines. The Committee, governed by Article 13 of the School Statute, is composed of Prof. Giovanni Bussi, faculty member from the Physics Area, appointed as Coordinator; Dr. Alessia Soldano, faculty member from the Neuroscience Area; Prof. Alessandro Tanzini, faculty member from the Mathematics Area; Dr. Amisha Aparupa, student representative from the Neuroscience Area; Dr. Michele Motta, student representative from the Mathematics Area; and Dr. Ivan Pasqua, student representative from the Physics Area.

METHODOLOGICAL NOTE

The primary task of the Committee is to draft an annual report that considers the overall educational offering, with particular attention to the results of the student opinion survey, identifying any specific issues in individual PhD programs.
From the analysis of the anonymously collected questionnaires, a picture emerges of a **School that is overall in good health**, with a generally high level of student satisfaction, consistent with findings from previous years. The Committee decided to focus the report on the **identification of critical issues**, rather than highlighting and discussing the numerous positive responses, which do not provide useful information for improving the School's educational offering. These issues are discussed in the first part of the report. In some cases, the Committee deemed it appropriate to propose strategies to address these problems. **These proposals are highlighted in italics.**
Many of these issues were already pointed out in last year's report, and the initiatives taken by the various PhD programs to address them will be briefly mentioned in the second part of the report, dedicated to the individual PhDs. A qualitative analysis of the responses revealed that many of the issues affect **all PhD programs in similar ways**, although in some cases the problems are more significant in specific programs. To determine which questions warrant a discussion of statistics disaggregated by PhD program, we calculated the *normalized mutual information* (NMI) between the responses and the corresponding PhD programs (en.wikipedia.org/wiki/Mutual_information). The NMI is equal to 1 if the responses differ completely across PhD programs, and equal to 0 if the response distribution is the same in every PhD.
Given the small number of students in each PhD program, high NMI values may sometimes occur by chance. Therefore, we calculated the **statistical significance** of the observed NMI, quantified by the Z-score, i.e., the difference between the observed and most probable NMI, measured in standard deviations. The Committee considered it useful to present the **data in disaggregated form, by PhD program**, when the Z-score is greater than 1.5. In most cases, the variations in disaggregated data for each individual PhD are not significant, with some exceptions that will be discussed later.

ANALYSIS OF CRITICAL ISSUES IN THE EDUCATIONAL OFFERING

Questionnaire Participation

In previous years, participation in the questionnaire consistently hovered around 70%. This year, for the first time, completing the questionnaire was made mandatory in order to register for the following academic year. This change led to an exceptionally high participation rate. Specifically, 290 out of 299 students completed the questionnaire (97%), and most of the few who did not respond were final-year students. The Committee views this outcome very positively. It is also noted that, as in the previous year, the questionnaire allowed students to begin filling it out and stop after the first section, with the option to provide a reason for not continuing. A limited number of students chose this option (6 students in total), none of whom provided an explicit reason. Therefore, the number of students who completed the full questionnaire is 284 out of 299, or 95%. These figures offer a more complete view of the School than was possible in previous years.

It is noted that in past years, a significant number of students indicated a year of enrollment that did not match the system records (14%). This year, that number dropped significantly (to 5%). Additionally, by checking the total number of respondents per year of study and comparing it with enrollment numbers for each PhD program, it was possible to identify inconsistencies in the declared PhD affiliation. In this case, inconsistencies were extremely limited (only 1 extra respondent compared to the number of enrolled students, and only in two cohorts from two PhD programs). The Committee considers the current data collection process to be very thorough and sees no need for further changes to the questionnaire administration method.

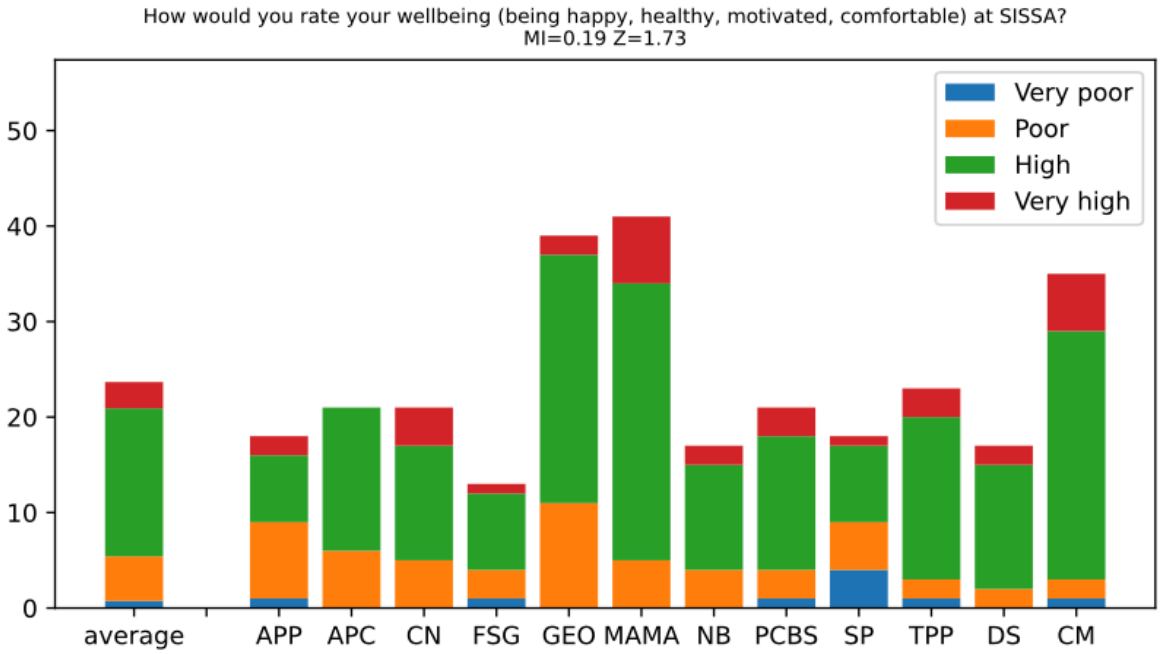
It is also observed that the previous 70% participation rate, combined with the possibility that the decision not to complete the questionnaire could be correlated with student well-being or satisfaction, makes quantitative comparisons with previous years difficult. For example, any apparent improvement (or worsening) in some indicators could simply reflect a greater (or lesser) tendency to respond among less satisfied students. In any case, the percentages reported in this year’s questionnaire are undoubtedly more representative than those in previous years. Nonetheless, for most questions, the year-to-year differences are not statistically significant. This suggests that the 70% sample from previous years was still representative of the School as a whole.

As in the previous year, it is recommended that, following the publication of this report, PhD coordinators hold a meeting with students in their respective programs to discuss any critical issues that may have emerged and how they have been addressed. This could serve as a collective moment of discussion that helps surface problems and possibly identify solutions—particularly useful in PhD programs where such meetings are not already a common practice. Furthermore, it could raise students' awareness of the report’s existence and the follow-up work carried out after the questionnaire, thereby encouraging more constructive participation.

Student Well-Being

The results related to student well-being show a slight improvement compared to last year. Well-being was rated as low by 20% of students (down from 24% the previous year) and as very low by 3% of students (in line with the previous year). These differences are statistically significant and indicate a positive trend, which the Committee welcomes. The differences

across PhD programs for this question are not particularly significant (Z-score = 1.7), but in some PhDs, the fraction approaches or exceeds half.



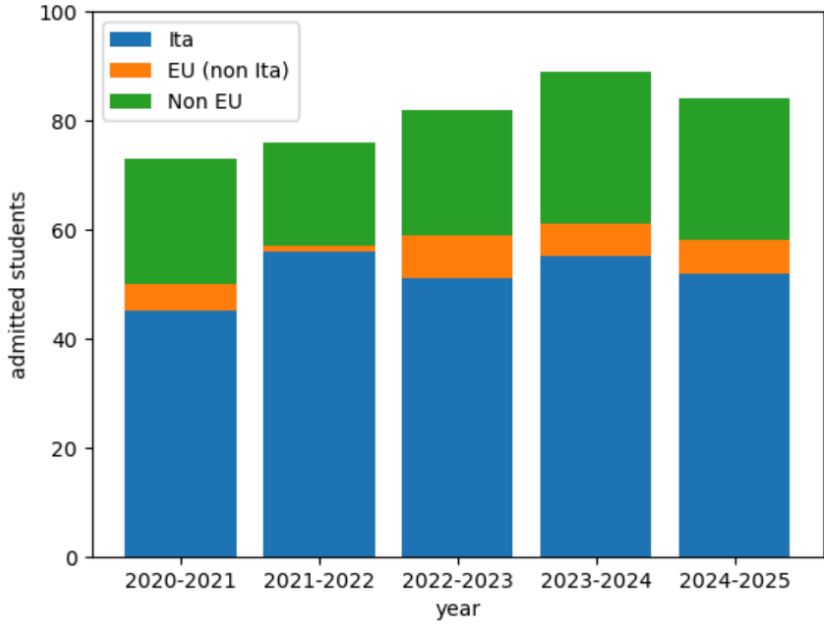
Some students provided explanations. In certain cases, the reasons were found not to be directly related to the work environment. In other cases, they seemed linked to difficulties in forming satisfactory personal relationships, the relationship with the PI and colleagues, scientific isolation, or financial difficulties.

Psychological Support

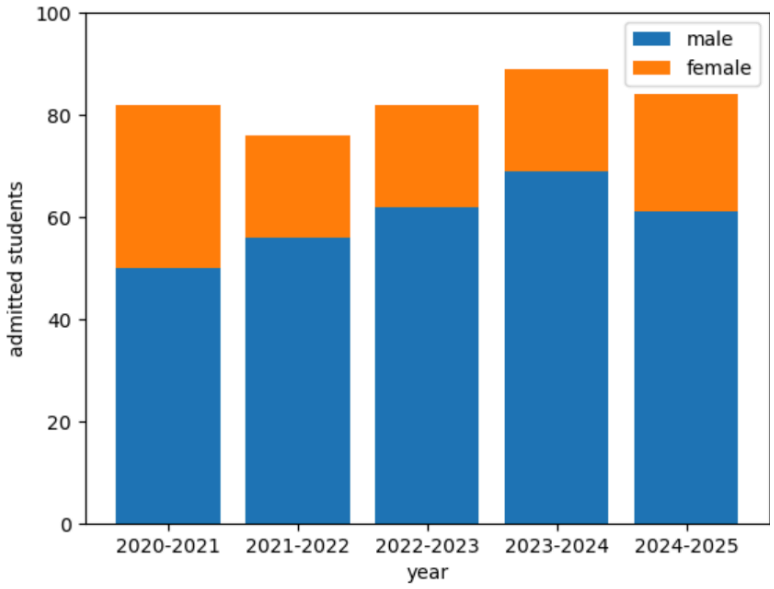
The availability of **psychological support** was evaluated by about one-third of the students. Of those who assessed the service, 30% found it at least partially unsatisfactory, a slight decrease from last year (32%). The free-text comments include several positive opinions. On the other hand, as in the previous year, other comments describe the service as insufficient due to limited availability of psychologists. The Committee found that in some cases students had difficulty attending appointments because of recurring commitments (e.g., weekly seminars). One way to reduce this issue could be to offer appointments at **varying times each week**.

Level of Internationalization and Respect for Diversity

The level of internationalization remains moderate. Among those admitted last year, 62% were Italian citizens, 7% were EU (non-Italian), and 31% were non-EU—similar to the previous academic year. These percentages, however, were 19%, 3%, and 78% respectively among all applicants, indicating that the success rate in the entrance exam is significantly higher for Italian and EU candidates compared to non-EU applicants.



The chart below also shows the fraction of admitted students by gender. In the past year, the proportion of admitted female students increased to 27%, up from 22% the previous year. Female applicants made up 29% of all candidates, suggesting that the **success rate is essentially gender-neutral**. This compares to 24% in the previous year. Thus, the increase in the proportion of admitted female students is attributable to a rise in the number of female applicants.



Discrimination

The number of reported cases of discrimination has slightly increased compared to last year (6% vs. 5%). These cases are evenly distributed across PhD programs ($Z = 0.9$). The number of students who reported witnessing discrimination also rose slightly (11% vs. 10%). Although these increases are not statistically significant, the numbers remain too high. Only a few students provided details in the open responses. In one case, the student reported already having consulted the Confidential Counselor. Two students reported discrimination against foreign students. One case involved a female student who felt she was being neglected by her supervisor because of her gender. Students who reported witnessing discrimination highlighted similar issues, mainly related to discrimination against foreigners or non-Europeans, and in some cases, gender-based discrimination.

As in the previous report, the Committee recommends that **everything possible be done to prevent language-related discrimination**. While the development of AI tools for document translation may help alleviate written communication barriers, it remains essential to make an effort to speak English in the presence of international students in all formal contexts (including meetings with the administration) and informal ones, wherever this is compliant with institutional regulations. It is noted that English is already the standard language in Area meetings and the School Council. It is recommended to ensure that **meetings in other contexts** where students, postdocs, or international faculty may be present are also conducted in English.

Poor Awareness of Available Services

Issues related to poor awareness of services, which were already reported in last year's report, appear to persist. In particular, the services known to fewer than 50% of students are: the university sports center (25%), medical assistance and childcare (42%), the CUG service (45%), and technology transfer (24%). In general, these indicators have slightly worsened compared to last year. Although this variation might be due to the broader base of respondents, these indicators warrant ongoing monitoring. Awareness of services designed to surface and address issues non-anonymously (such as CUG and the Ombudsperson) remains similar to last year, and on average below 50%, despite numerous communications and posters explaining in detail SISSA's well-being support network.

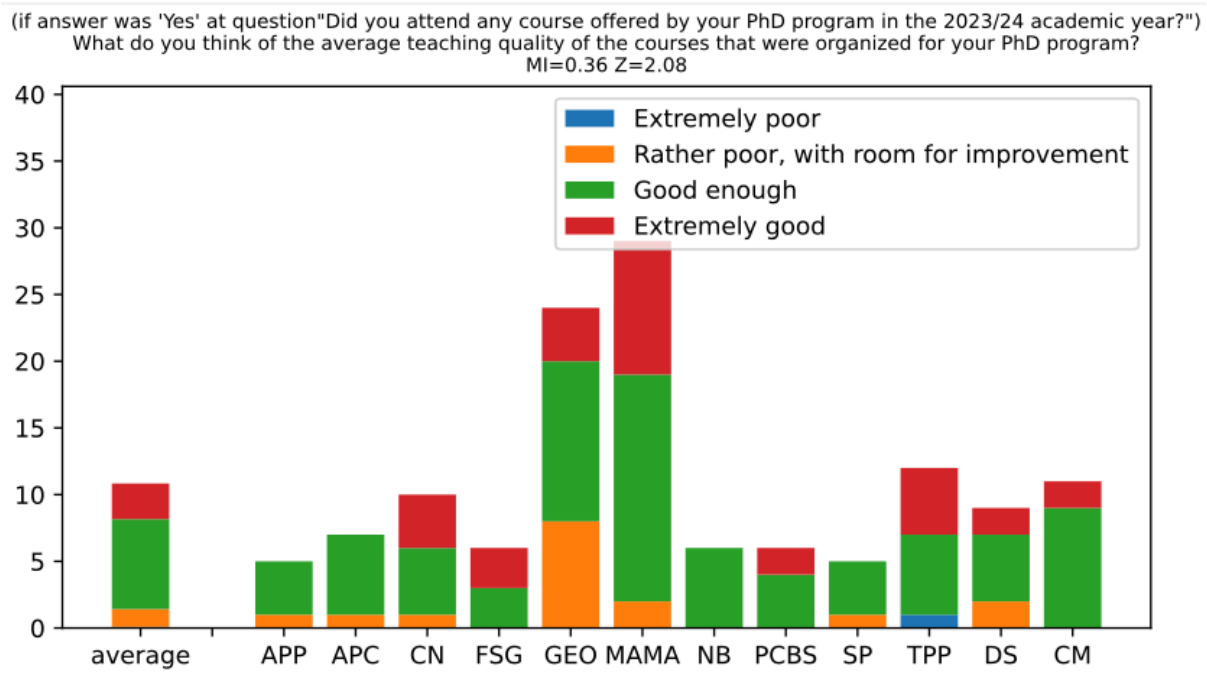
Very low awareness is also observed regarding student representation in SISSA's governing bodies. For the various bodies, the percentage of students who feel sufficiently or very well informed ranges between 20% and 31%. These results are consistent across all PhD programs and are considered concerning by the Committee. In open comments, some students mention the lack of general student assemblies. The Committee urges student representatives to involve the broader student body more actively. It is noted that a plenary meeting was organized following the results of this year's questionnaires.

Networking

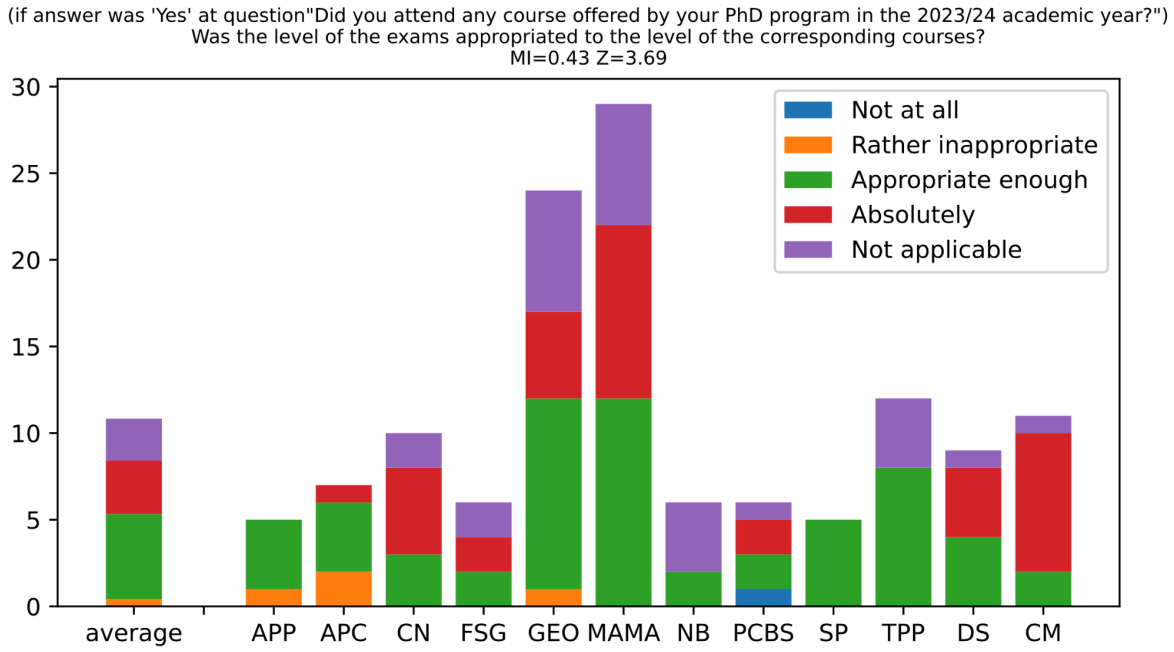
Awareness of the activities of other groups within the same Area and of groups from other Areas remains similar to last year (55% and 11%, respectively). The proportion of students who reported that their PhD program was ineffective in developing a professional network has decreased compared to last year (39% vs. 60%). However, the number of respondents to

this question is small, as it is only asked of final-year students, suggesting a potentially significant statistical error. The results do not show significant correlation with PhD program.

Educational Offering

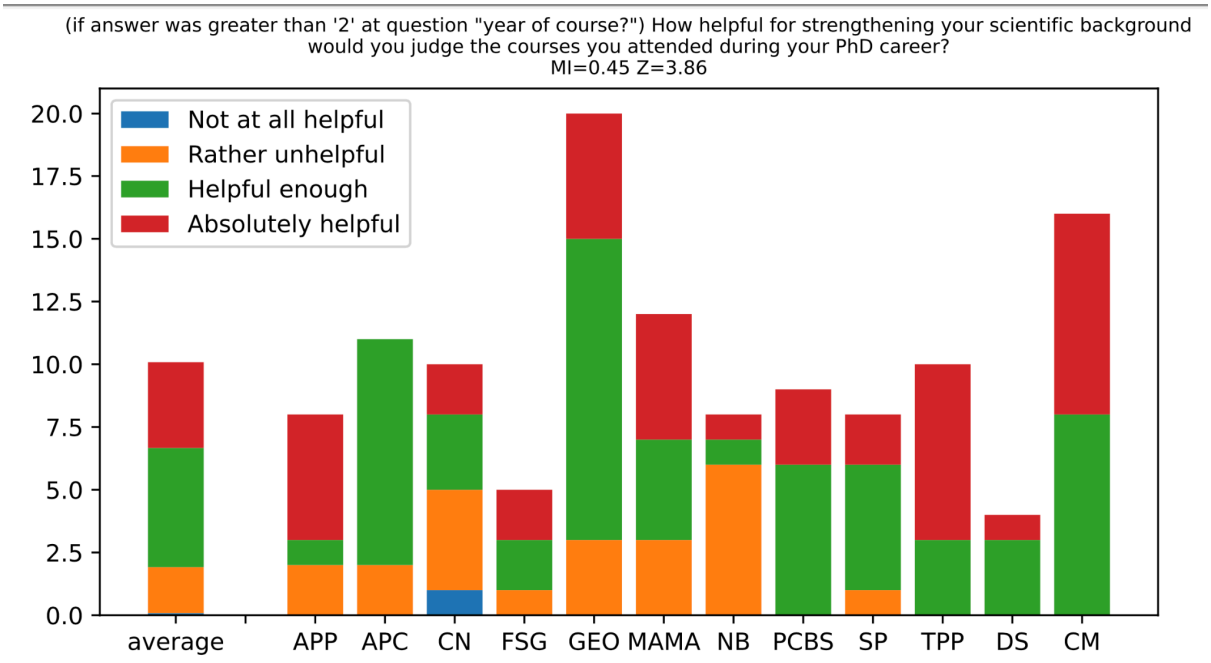


The quality of the educational offering is rated as high or very high by a large percentage of students, though this has slightly decreased compared to the previous year (86% vs. 88%). The disparities observed in the previous year have been reduced (Z=2.1). Differences in the perception of exam difficulty remain notable (Z=3.7).



The percentage of third- and fourth-year students who found the courses they attended helpful in strengthening their scientific background increased compared to last year (81%

rated them good or excellent, vs. 67%). However, this result varies significantly by PhD program.

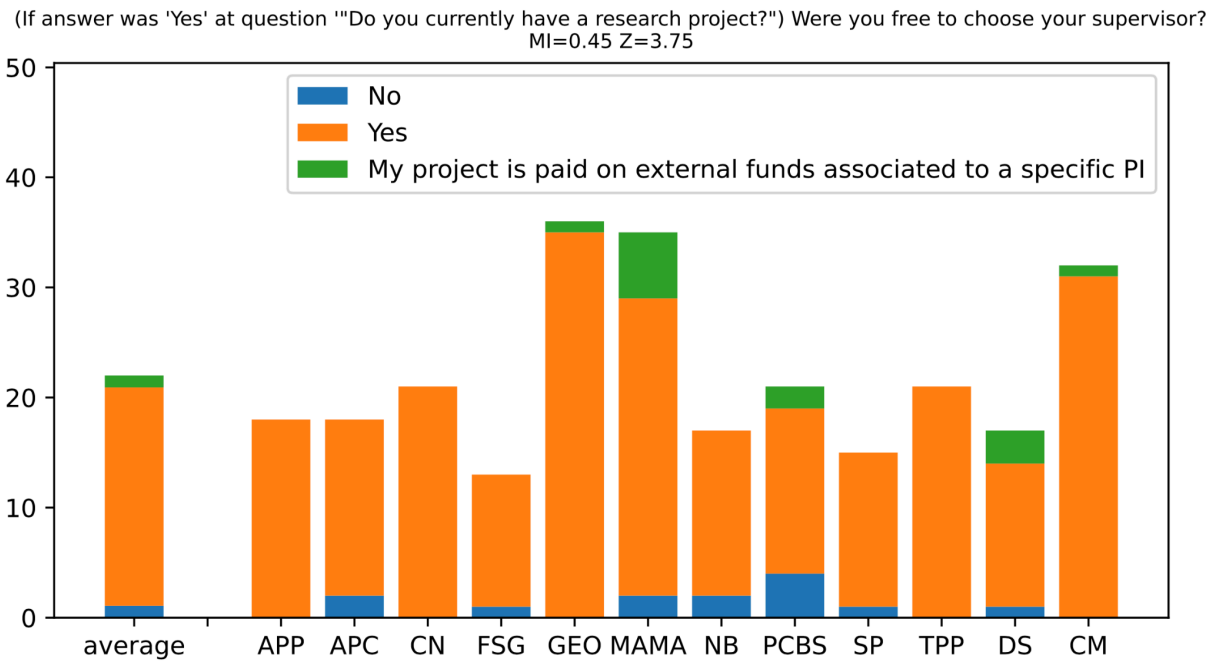


Participation in courses offered by other PhD programs is similar to the previous year (42%), with no significant differences between PhDs (Z=1.6). It is noted that this question is only accessible to students who indicated they had taken courses offered by their own PhD program. Therefore, it is suggested to revise the previous question to explicitly include students beyond their first year who may have taken courses only from other PhD programs.

Quality of Supervision and Career Prospects

Regarding the match between the quality of the research project and their expectations upon arrival at SISSA, the proportion of satisfied students is consistent with the previous year (85%), with negligible differences across PhD programs (Z~0.5). 81% of students reported being able to make an informed choice about their research project, and 90% said they are able to carry out their own ideas autonomously, again with no significant differences between PhD programs.

The vast majority of students had the opportunity to choose their supervisor. This year, the analysis also considered potential restrictions related to the source of fellowship funding. The response to this question varies by PhD (Z=3.7).



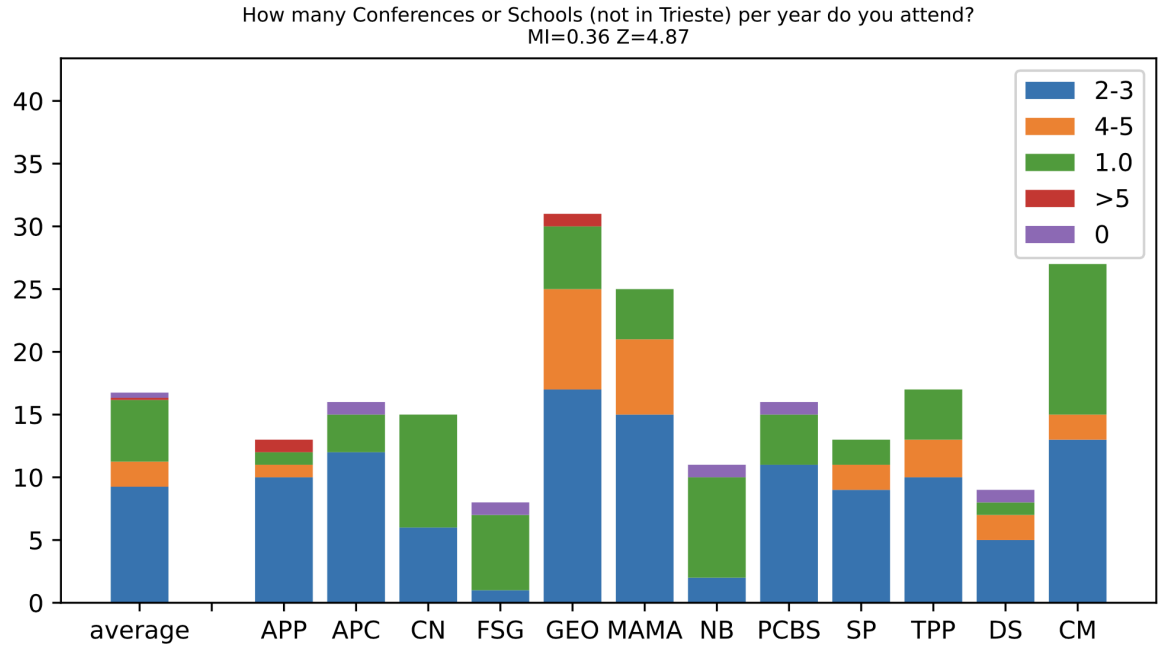
Concerning the lack of freedom in choosing a supervisor, the issue previously identified in the PhD in Theoretical and Scientific Data Science appears to be mitigated when accounting for externally funded fellowships. In the PhD in Physics and Chemistry of Biological Systems, the number of students reporting they could not choose their supervisor remained unchanged (4 students).

Overall, students are satisfied with the time spent with their supervisor (83%) and with their supervisor's availability (87%), regardless of PhD program. Other supervision-related indicators are either similar to last year or slightly improved. 89% of students indicate their supervision is generally satisfactory, compared to 87% the previous year.

Compared to last year, aggregated data across the entire school were also analyzed by comparing responses from students with external supervisors to those with SISSA supervisors. No statistically significant differences were found between the two groups. It is important to note that the Committee did not have access to data disaggregated by PhD or year in this case, to prevent easy identification of students with external supervisors.

The majority of students plan to continue in academia (66%). The results differ by student cohort (from first to fourth year: 72%, 55%, 66%, 71%). The Committee intends to track this statistic in future reports. A significant portion of the remaining students still plan to pursue research and development in the private sector.

Conference Participation

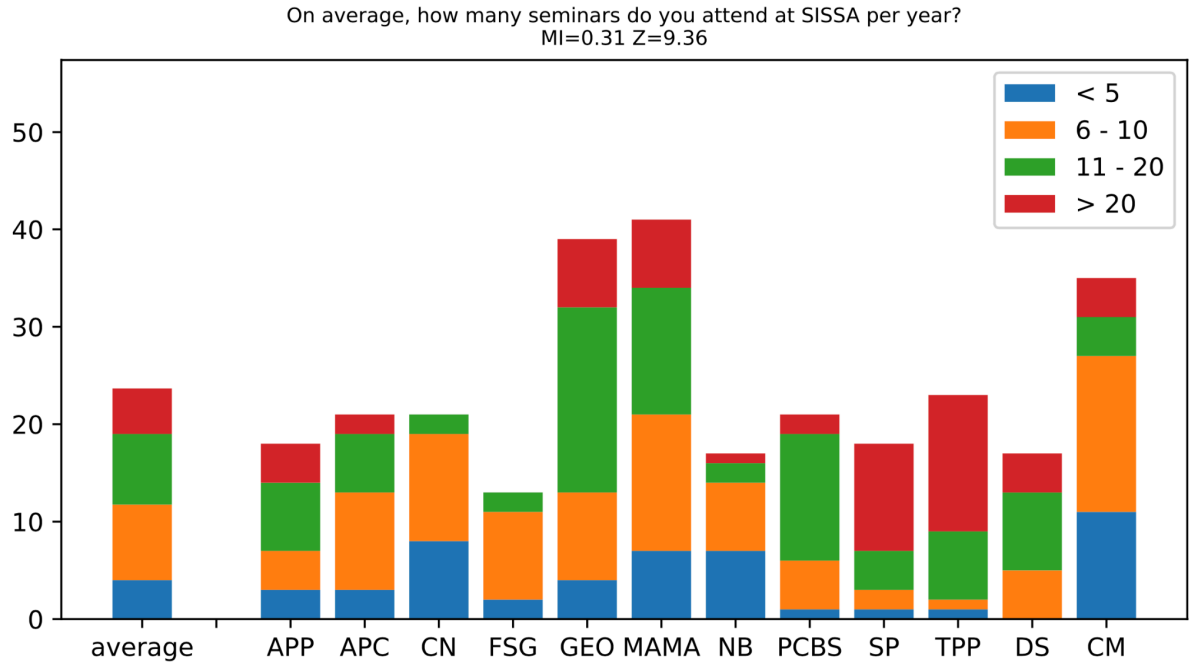


The analysis of conference participation by year excludes all first-year students, in keeping with the well-established practice that first-year students carry a heavy course load, making conference attendance neither necessary nor advisable. Participation varies significantly among PhD programs (Z = 4.9). However, the number of students who did not attend any conferences is very small across all PhDs. In this regard, the situation has significantly improved compared to the previous year.

An analysis of the free-text comments reveals that the main reasons why a significant number of students attend no more than one conference per year are limited funding and a lack of results to present. The Committee believes that allowing students to attend at least one conference per academic year is a **minimum requirement**, but in many cases may also be **sufficient**. No fourth-year student reported attending zero conferences.

As in the previous year, the Committee notes that the current wording of the question makes it unclear whether it refers to the last year or to an average across previous years. A possible solution to avoid potential reporting errors might be to reconstruct this data using the School's mission tracking system.

Seminar Attendance



The number of students attending fewer than 5 seminars per year remains in line with last year's results (17%). However, as last year, these students are unevenly distributed among the PhD programs (Z = 9). As shown in the figure, in some PhDs a particularly high fraction of students report attending fewer than 5 seminars per year, as discussed in more detail below.

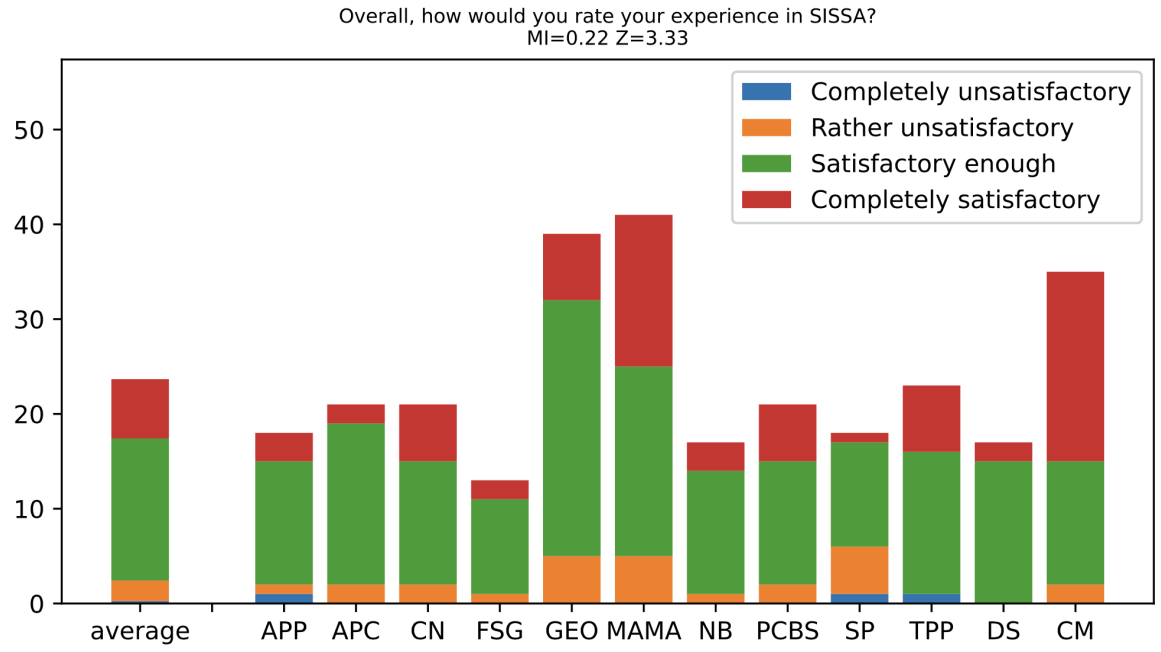
The Committee reiterates last year's recommendation that **each PhD program should organize at least one seminar per month**, ideally offering a variety of topics to reflect the diverse interests of students. Additionally, students should be encouraged to attend seminars organized by other, scientifically related PhD programs at SISSA.

Colloquia

Colloquia are rated similarly to last year: 65% of students who expressed an opinion found them useful (compared to 66% the previous year). The number of students who gave an opinion slightly decreased (60% vs. 63%). The Committee considers this indicator important to monitor in future years.

Overall Satisfaction

Overall, **89% of students report being satisfied or very satisfied** with their experience at SISSA, consistent with the previous year. However, results depend on the student's PhD program (Z = 3.3), as shown in the figure below:



While some PhD programs report 100% satisfaction (e.g., TSDS), or at least above 85%, one program (SP) shows a satisfaction rate of only 67%.

The following sections analyze the three main Areas of the School and the individual PhD programs within each Area, using the same methodology focused exclusively on identifying critical issues.

Physics Area

ASTROPARTICLE PHYSICS
Specific issues: The student well-being situation, previously mentioned in last year's report, appears quite critical: 50% of respondents report low or very low well-being. Course logistics are still perceived as problematic but have improved compared to the previous year. Free-text comments highlight occasional overlap with courses from other curricula that could be of interest. The coordinator reports that some students wanted to attend multiple courses from a scientifically adjacent PhD, but scheduling conflicts with fundamental Astroparticle Physics courses prevented this.
Corrective measures: *The committee welcomes the faculty's decision to allow students to attend courses from other curricula. In case of scheduling conflicts, the committee suggests advising students to take those courses in later years, provided they are not required for admission to the second year. The committee will evaluate the impact of the course scheduling improvements in the next questionnaire.*

ASTROPHYSICS AND COSMOLOGY
Specific issues: The measures taken by the faculty to improve course logistics appear to have been effective. However, 25% of students report insufficient time with their supervisor. Nearly 50% would appreciate more feedback. Two students state they were not free to choose their thesis topic.
Corrective measures:
The faculty is encouraged to monitor thesis supervision and organize a meeting with students to discuss the questionnaire results and thesis topic options. From a discussion with the coordinator, there is an expressed intent to improve communication with students regarding project planning and educational paths. One possible solution could be to encourage students to take such courses in later years.

PHYSICS AND CHEMISTRY OF BIOLOGICAL SYSTEMS
Specific issues: Respondents report being uninformed or poorly informed about the scientific activities of other SISSA groups (other Areas). Comments about the Colloquia highlight a need for more frequent and broader seminars that appeal across areas. Of 21 respondents (including 2 funded by external grants tied to a specific PI), 4 state they could not freely choose their supervisor—same as last year, though total respondents increased. Around 80% of final-year students find the PhD program effective in helping them develop technical skills, independence, and a professional network.
Corrective measures: For the Colloquia, new interdisciplinary and outreach-style seminars have been scheduled for this year and the next, aiming to interest all Areas. The Coordinator and Vice-Coordinator noted low student attendance. To improve awareness of other PhDs' activities, students are encouraged to subscribe to seminar mailing lists from related groups and nearby institutions.
The Committee will monitor participation and evaluations of the new Colloquia series and encourages faculty to promote attendance among their students.

STATISTICAL PHYSICS
Specific issues: As in the previous year, 50% of students report low or very low well-being, significantly higher than the School average. Free-text comments reveal concerns about transparency in decisions, especially around supervisor choice. Some students felt unclear

about supervision options at the start. Dissatisfaction was also expressed over the faculty decision to stop awarding honors ("lode"), reportedly made mid-year without student involvement, which some feel puts them at a disadvantage compared to peers in other Italian PhDs. While this is within the faculty's authority, open communication with students remains important. The student representative has already contacted faculty about these issues, resulting in a meeting that students felt was unsatisfactory and unproductive. Many students say they are unaware of student representatives' activities. One-third report being uninformed about scientific activities of other SISSA groups.
Corrective measures: The coordinator collected anonymous student feedback via their representative and organized a follow-up discussion with all students. No specific cause was identified for the well-being concerns noted in the 2022/2023 report, though questionnaire results show these issues persist.
The Committee recommends initiating a mediated discussion within the PhD program, involving both students and faculty. An external faculty member could facilitate the dialogue. CPAD student and faculty members are available if deemed appropriate.

THEORETICAL PARTICLE PHYSICS
Specific issues: Both free-text comments and the coordinator's report indicate a gender imbalance.
Corrective measures: Continued efforts are encouraged to improve female representation in the PhD program, which remains limited. The promotion of intra-student activities, such as a student-run junior seminar, is suggested to foster interaction and exchange. The coordinator notes that students are already organizing weekly journal clubs.

THEORY AND NUMERICAL SIMULATION OF CONDENSED MATTER
Specific issues: Application numbers have increased significantly, confirming that last year's drop was due to a cyberattack on the CM website. About 40% of students report attending fewer than 5 seminars per year. Some also mention low female representation.
Corrective measures: It is recommended to explore the reasons behind low seminar attendance and encourage broader participation in scientific activities—even those not directly related to students' thesis work. The coordinator reports that 2023/2024 activities were still affected by the post-pandemic downturn. A significant increase in seminars is planned for 2024/2025. The faculty should also monitor female student well-being and participation; the coordinator expects female representation to improve following recent admissions.

THEORETICAL AND SCIENTIFIC DATA SCIENCE
Specific issues:
The number of students reporting they freely chose their supervisor has improved substantially (1 out of 17 vs. 4 out of 9 last year). This may partly reflect better wording of the question, as many fellowships in this program are tied to specific topics. Female representation has also improved: 22% of admitted students vs. 28% of applicants. Some students report insufficient feedback from their supervisors.
Corrective measures: The faculty is encouraged to continue hosting meetings with students to review questionnaire feedback and assess satisfaction with research projects.

Mathematics Area

APPLIED MATHEMATICS & MATHEMATICAL ANALYSIS
Specific issues: The number of students who had difficulty getting feedback from faculty other than their supervisor dropped significantly (4 out of 36), now in line with the rest of SISSA. No issues were reported regarding the quality of teaching.

GEOMETRY AND MATHEMATICAL PHYSICS
Specific issues: The percentage of students reporting difficulty obtaining feedback from faculty other than their supervisor also decreased significantly (1 out of 35), in line with SISSA overall. However, 33% of students who attended a course rated its quality as low or very low—compared to 13% school-wide. Reported issues include overloaded periods followed by sparse ones, and problems with topic structure and continuity in some courses. Several international students note being excluded from conversations due to the use of Italian. Greater awareness from both faculty and students is needed to include international students.

Neuroscience Area

COGNITIVE NEUROSCIENCES
Specific issues: The number of students reporting low well-being is in line with the rest of the school and shows a significant improvement over last year. About 38% of students attended fewer than 5 seminars. While the report mentions numerous invited guests, it is unclear whether they delivered seminars.

FUNCTIONAL AND STRUCTURAL GENOMICS
Specific issues: Previously reported issues with low conference participation appear largely resolved. Seminar attendance has increased but remains lower than the school average. The PhD program organized 5 seminars during the academic year. Almost all students attended between 6 and 10 seminars, likely including events from other PhD programs.

NEUROBIOLOGY
Specific issues: The number of students reporting low well-being has decreased substantially (24% vs. 50% last year). Past issues with low conference participation also seem mostly resolved, with clear actions taken as described in the PhD's report. However, seminar attendance remains low—about 40% of students attend fewer than 5 seminars per year.