

Summer jobs for undergraduate  
students in the physics department

# Background

Motivation was to get undergraduate students involved in research during the summer

- raise awareness among the students about the research carried out in the department
- way of attracting top students to our MSc and PhD programmes
- good for the research environment in the Divisions

Positions open to undergraduate students at KTH who have completed at least two years of education in Physics. Students in their final year of MSc not eligible to apply.

One-month projects proposed by supervisors. Eight supervisors proposed projects.

# Selection process & outcome 2022

**Selection criteria:** Grades, relevant prior experience (e.g., summer schools, tutoring of other students etc.), motivation in cover letter.

**Selection processes:** Ranking was done by the outreach committee. The focus was on the merits of the students. The suitability of individual students to carry out specific projects was not considered.

Students got to pick their projects in order of ranking (we had envisaged a situation with more projects than positions).

**Outcome:** 24 applicants (16 MSc, 8 BSc), (18 Male, 6 Female)

8 students offered and all accepted (7 MSc and 1 BSc, 6 male and 2 female)

4 students got their first choice of project.

# Reflections from the outreach committee

Suggest to change criteria so that we can also hire some students who have less excellent grades, but a strong interest and motivation for research. This would align better with the objective of “outreach”.

- place more emphasis on the motivation in the cover letter

- remove the statement that previous research experience is considered an advantage.

Also a number of small things that should be clarified in the advert : write in English, work to be done at KTH, transcripts also for ongoing degrees, .....

# Comments from the students

**1. Did you find the summer project meaningful? What was the most important thing that you learnt from working on your project?**

Everyone found it meaningful

*Learnt about the specific subfields and techniques.*

*Learnt about how physics research at a university works.*

*Helpful for making better decisions in terms of a PhD.*

*I learned that I am capable of more than I thought when there is no clear plan or course to follow.*

*I learned that it can be fun to do research and that I might want to pursue an academic career in the future.*

*It was good to learn that it is hard to make progress in research, and that you cannot always expect to get the results you want.*

*Also realised how important computers are for every kind of research in physics.*

**2. Did you feel you had sufficient prior knowledge and time to deliver in your project?**

Yes from most (6/8)

*Not fully (because the project I got was not my first choice)*

*I think that we need more time to study before the summer job*

**3. Were you satisfied with the supervision you received?**

All students were satisfied with the supervision

**4. Was the duration of the project appropriate?**

Everyone said a longer project would have been more meaningful, but 3 would not have time for it.

**5. Has this summer project affected your future study and/or career plans? If so, how?**

No from 3 students. *(I signed up for the program due to my future plans, not the other way around.)*

*Yes, it motivated me to keep learning more about the topic and choose it as a MSc thesis*

*It gave me the opportunity to look at the other possibilities available to me. It even got me interested to do some courses connected to it in my free time later.*

*Yes, because I might want to pursue an academic career.*

*This project helped me decide what fields I want to pursue.*

**6. Did you interact with the other students hired to work at the department during the summer? Would you have liked to have any formal activities together with the other students?**

A few of the students interacted, but most did not.

*Would have been nice to meet the other students, but meeting staff was more important.*

*Maybe put all the summer students in one office.*

*Maybe some meeting at the beginning to get to know each other as there was no opportunity for us to meet or interact.*

**7. Are there any aspects that you think can be improved if we offer summer jobs again next year?**

*The length of the project, as well as the formalization of the project from the professor well beforehand.*

*The duration of the summer job should be more than one month and the students should be prepared in advance.*

*It would help if summer students were offered work areas in the institution.*

**8. Any other comments**

*I enjoyed it a lot! It helped me for my academic/professional future and the salary helped me a lot with expenses I had to deal with.*

*This was a great initiative and a nice learning experience.*

*If you want the students to answer, make the survey an obligatory part of the summer job.*

# Comments from the supervisors

**1. How did the project work with the student? Did the student manage to complete the tasks you had in mind?**

All very good: 6

Partly completed: 2

**2. Was one month sufficient to carry out a meaningful project? Would you be interested in and able to supervise a student for a longer time during the summer?**

Most think a longer project would have been better, though one month was OK. A couple would not have had time to supervise a longer project.

*Given that there is only a fixed amount of money, it makes sense to have several one-month projects instead of fewer two-month projects*

*Paying for only one month might mean that students who need the salary for two months or so during the summer might not apply, which isn't great from an outreach perspective where we should try to ensure all students find these positions attractive.*

**3. Do you have any comments on the selection criteria and/or the hiring process? The advert is attached for reference.**

Most thought the process was fine (four supervisors had no comments)

Two would have like to met the students in advance

Two had unpaid students working during the summer, who produced better results (they were not offered positions due to lower grades)

*Perhaps we can arrange a common seminar where the projects are presented and we can discuss with the students*

*Larger group (of slightly less excellent) students could benefit from this*

*If the purpose is outreach and to get a more diverse selection of students to apply and also obtain one of these positions, only rewarding high grades and previous research experience isn't the best.*

*We could possible put a slightly greater emphasis on motivation letter and/or extracurricular activities relative to grades, but I still think grades should be important.*

*Students who have top marks know well how to fulfil well-defined tasks efficiently, but it does not say how motivated and talented they are in doing research.*

*-Invite students to provide letters of recommendations, from intended advisors or other teachers.*

*-Perhaps one can make the bachelor thesis into a selection criterion: while the “official” marks are “P” and “F”, we allow for an additional mark “excellent” which advisors can give.*

#### **4. Would you be interested in supervising a summer student again?**

Yes from 7, maybe from 1

*I would not want again the situation that I “must” advise a student I did not talk to before.*

#### **5. Any other comments**

*This worked even better than I had expected.*

*Great initiative*

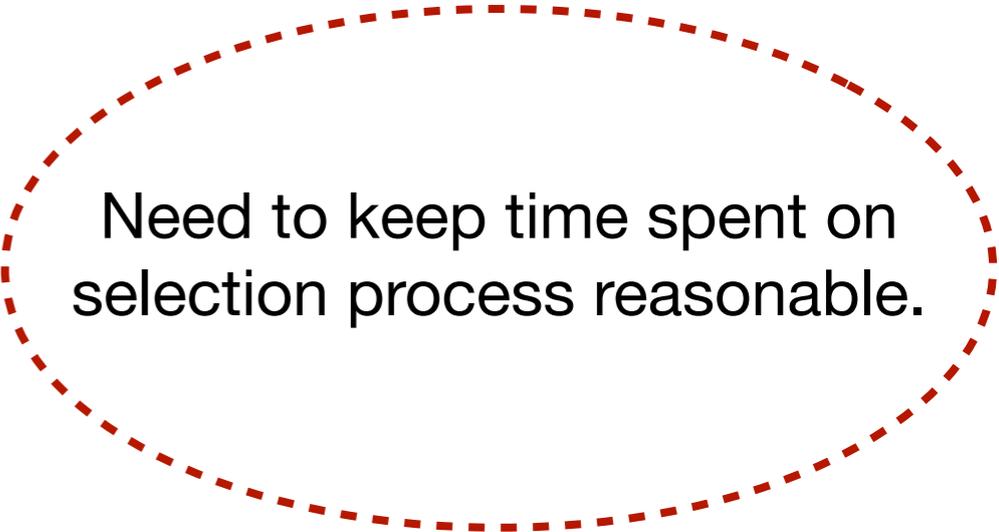
*In case it could be interesting for the department, perhaps a few projects could be about actually developing something for outreach purposes?*

# Discussion points

- Do we want to make this an annual programme?
- How much money can we spend on this?

## **If announcing new positions in 2023**

- Number of positions and duration of projects?
- How best match supervisors and students?
  - Keep current system?
  - Apply directly to supervisors instead?
  - Hybrid method (complicated)?
- Change selection criteria?
  - Each supervisor sets their own criteria?
  - Less emphasis on grades and prior research experience?



Need to keep time spent on selection process reasonable.