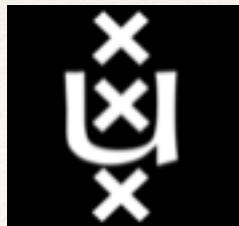


Setting up an outreach program

Jordy de Vries, Universiteit van Amsterdam & Nikhef

Setting up an outreach program

- ❖ When I worked in Amherst (USA) they ran a STEM summer program for high-school teachers in New England
- ❖ Huge disparity in school resources. Chance to connect UMass to students who might not go to college (first-generation students)
- ❖ I participated in the program and very much enjoyed it
- ❖ When I came to Amsterdam in 2021 I wanted to set up something similar here



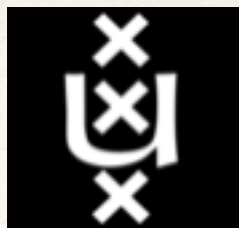
University of Amsterdam



The plan

- ❖ Setup a 3-day school for high-school teacher about modern particle physics and why we need new ideas / young people
- ❖ I made this part of my VIDI proposal. I wrote in a grandiose fashion:

ideas and results of this proposal to a general audience. As part of this proposal, I will develop a new educational program, organized in collaboration with UvA physicist and outreach coordinator Marcel Vonk and *Bètapartners*, an outreach organization that helps the UvA research community communicate the content and relevance of their state-of-the-art research to a broader audience. Through this program, I will:



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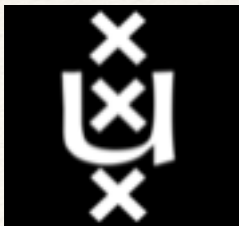
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- 2) Strengthen connections between UvA and science teachers in the Amsterdam area, with emphasis on under-represented groups. A focus will lie on experiences of first-generation students and how to help such students start higher education. First-generation students face severe academic, cultural, and financial obstacles [71-72]. Discussions between high-school and university teachers can lead to strategies to improve the experience of first-generation students and to a more diverse student population. The program is targeted at high-school science teachers and aims to form a small group of leaders who inspire their own school environments.



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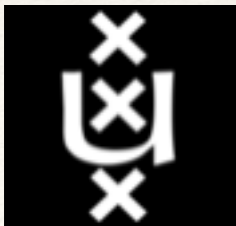


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- ❖ This plan completely failed. *I did not really know how to do any of it.*

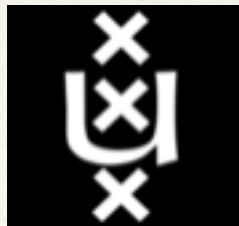


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Restart

- ❖ In Amsterdam I started teaching a course Natk4all
- ❖ And actually *talked* to practicing high-school teachers
- ❖ They are busy and don't really want to go to 3-day schools.....
- ❖ But they would love to connect their school / students to the university !

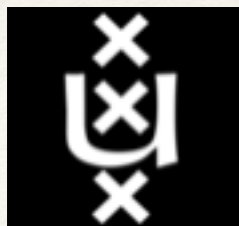


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Back to reality

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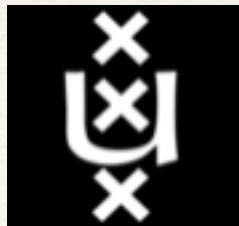


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Onderzoeker in jouw klas (OIJK)

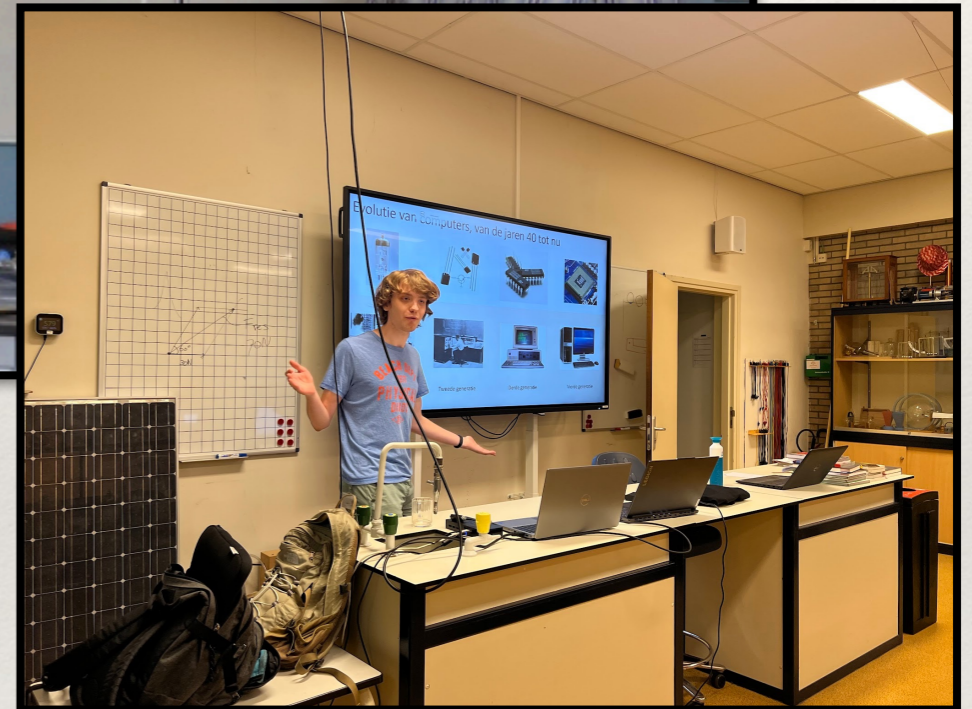
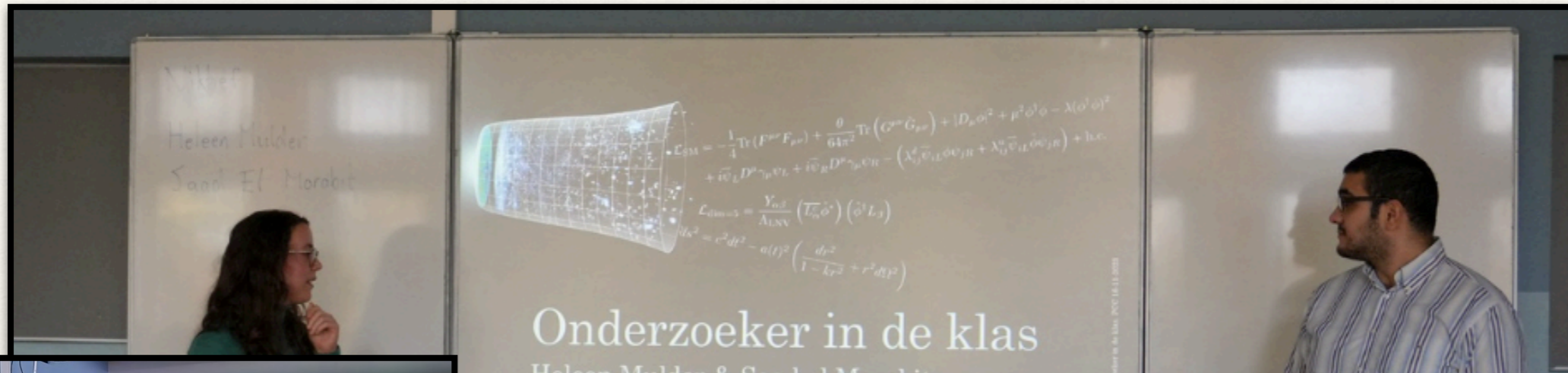
- ❖ We want to introduce high school students to the world of a young physicist
- ❖ PhD students visit school and talk about their lives as scientists
 - How do you become a scientist and why did the choose this path?
 - What do the work on? (*From black holes to quantum computer to Higgs bosons*)
 - What does a work-day look like? And a work-year ? (*Research, teaching, travel,...*)
 - Future plans ?
- ❖ The program is organized by Jordy de Vries as part of the D&I council
- ❖ Participating PhD students earn ECT credits (so a reduced teaching load !)
- ❖ We target schools in the Amsterdam region (broadly defined)



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Onderzoeker in jouw klas



- ❖ ~ 10 active PhD students (2023-2026). A dip this year, but new students for next years
- ❖ ~ 35 schools and ~ 60 classrooms

Tell your own story (with support)

- ❖ PhD students tell their **own story** (this works best!)
- ❖ We help with making your presentation / demonstration
- ❖ Great way to learn talking to audience of non-scientist / non-experts
- ❖ **We take care of communication with schools and teachers: you don't have to do that.**
- ❖ **PhDs visit schools typically in pairs**
- ❖ We have 2 get-togethers per year to discuss experiences / plans and to have drinks / food
- ❖ **YOU DO NOT HAVE TO SPEAK DUTCH ;)**

Feedback

Het was helemaal top!

Ik zou het leuk vinden om dit elk jaar te gaan doen. Er was veel interactie met de leerlingen.

Hi Bas, Lemonia and Jordy,

Thanks again for today. It was really informative and I'm sure you changed the view on doing science for a lot of the students. The experiment was also really nice.

- 1) Het was erg leuk! Het is leuk voor de leerlingen om te horen waar natuurkundigen mee bezig zijn. Ik was erg tevreden en we gaan het volgend jaar zeker weer doen (als jullie dit blijven aanbieden dan :-)). Echte feedback heb ik niet. Behalve dat het toch voor leerlingen lastig is om vragen te durven stellen. Zeker als het ook nog in het Engels is, vinden ze het toch moeilijk (of spannend). Ze wat meer uitdagen om vragen te durven stellen of vragen te (moeten) beantwoorden, zou de interactie nog bevorderen.

Beste Jordy,

Zeker is het goed verlopen. Lemonia en Sarah hebben in twee klassen beide hun praatje gedaan, en daarna nog uitgebreid op vragen van leerlingen in gegaan. Ik vind het een fantastisch initiatief, dit doet wat met de leerlingen. Lemonia en Sara geven een toekomst in dit vakgebied echt een gezicht en maken het tastbaar. Daarnaast waren zowel Lemonia als Sarah hele goede role-models. Hun praatjes waren heel goed verzocht en nog belangrijker: ze brachten het allebei heel enthousiast. Jullie doen fantastisch werk met dit out-reach programma. Ik hoop dat jullie zoveel mogelijk scholen op deze manier kunnen bereiken.

- **Saads experiments were very interesting' & 'Shoutout to Saad, sick research and I hope the pain from the aluminum foil has passed'**

What have I learned

- ❖ Setting up a program and running it is **very different**
- ❖ It requires continuous attention and sometimes hard to keep up the energy
- ❖ **PhD students involved very much enjoy the actual visits to schools**
- ❖ Very rewarding when it works but not **professionally rewarding**
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- ❖ Except for grant writing.....

EDMs—both innovative departures from conventional methods. He also connects high-energy physics, nuclear theory, and cosmology through a unified EFT framework, bridging disciplines. His "Researcher in Your Classroom" outreach program further reflects creative engagement beyond academia.

B) This cutting-edge research joined with the outreach activity proposed here will help attracting new young people of diverse backgrounds to the physics or other natural sciences studies.

- 1) making sure that governmentally provided research money (taken from the society) is well spent through careful science.
- 2) Impact through outreach, very importantly to high schools.

I think point 1) should be implicit in all research grants and was stated only to tick a box. Point 2 however is well thought out and the applicant makes a convincing case that it will be carried out. Although the main focus in impact was scientific according to the proposal, I think that this outreach aspect is an excellent addition.

Interested ?

- ❖ I would be happy to discuss how to improve the program!