

An innovative teaching model: Summer Academy for high school students in translational cancer research at the Center for Integrated Oncology Cologne

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Introduction

As a comprehensive cancer center, the Center for Integrated Oncology Cologne (CIO) wants to provide an excellent teaching infrastructure for oncology training. Inspired by the Summer Academies of US-American cancer centers, in particular from our partner cancer center in Pittsburgh (USA), we launched the first “CIO Summer Academy” in 2014 with five local students. Since the 2014 pilot program was assessed as an outstanding experience by the students as well as the participating laboratories, we expanded our program to ten students in 2015, including one student from Pittsburgh. We will expand our Summer Academy activities and believe that it represents a model for inspiring students to focus on translational cancer research. Accordingly, four of the students of our Summer Academy already started to work as student helpers in research groups of our cancer center.



Basic lab techniques were taught in groups



Sophia T. generated trispesific recombinant proteins for cancer Immunotherapy

Christian F. constructed over-expression plasmids for the CLL-relevant Receptor Tyrosine Kinase BTK



The students received certificates after their final presentations

Objective

- To give talented and motivated high school students the opportunity to get a thorough insight into translational cancer research
- To encourage them to pursue careers in the field of cancer research and clinical management.
- To instill theoretical knowledge of cancer biology and clinical care, as well as to provide hands-on research experience and develop presentation and communication skills

Program Overview

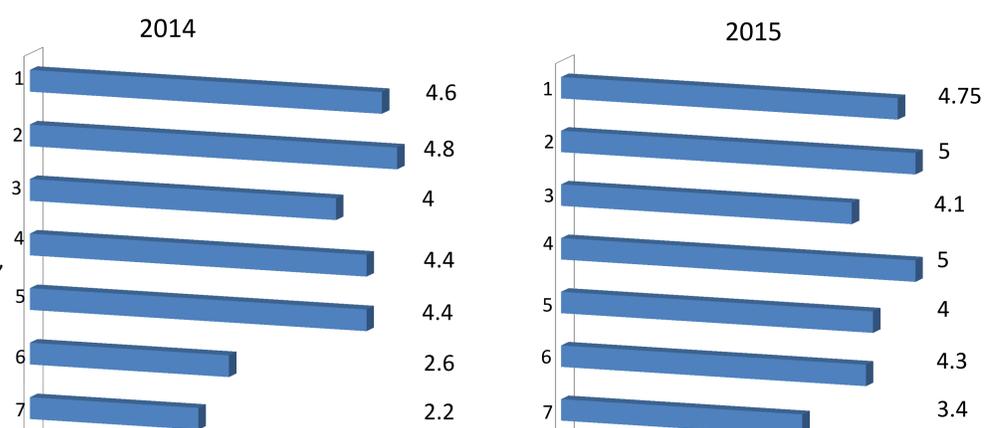
- Scholars experience four weeks of research-focused, didactic and experiential learning in nine different laboratories as well as one clinical trial office location.
- Scholars work on their own research projects in a dedicated laboratory
- Scholars attend a series of cancer biology lectures presented by graduate students and post docs of the CIO, also improving the lecturers' teaching skills.
- At the end of the program, scholars present their projects orally, as well as during a poster session.
- Overall, participating scholars learn important skills to help prepare them for success in college and in their future careers in science and medicine.

Follow up Evaluation

Students were asked: “How much do you agree or disagree with the following statements?”

1= „strongly disagree“ 5= „strongly agree“

- 1) The program was designed with a suitable mixture of worthwhile learning experiences.
- 2) The program was well organized and the leaders of the program kept me informed.
- 3) The speakers in the lectures were well prepared and provided quality presentation.
- 4) My laboratory's mentor(s) was available, helpful, informative, and actively promoted my progress on my project.
- 5) The research project that my lab had me conduct provided an opportunity for learning and accomplishment.
- 6) The choice of the textbook was appropriated.
- 7) The content of the lecture was too complicated.



Testimonials

- „I definitely learned more than I could even begin to imagine this summer. I am so thankful that I had this opportunity to experience hands-on.“ (Sarah 17)
- „First of all: the summer academy was amazing. I always wanted to study natural sciences, but this definitely confirmed that it is the right choice. I am very grateful for this experience.“ (Charlotte 18)
- „To put it briefly, it was a fascinating but also stressful journey, no other internship could have provided it the same way. Thank you!“ (Ibrahim 19)

Acknowledgements

We thank our dedicated PIs and mentors: Matthias Scheffler, Christian Reinhardt, Tamina Seeger, Sandra Iden, Lukas Frenzel, Michael Hallek, Elke Pogge von Strandmann, Michael von Bergwelt, Roman Thomas, Marco Timmer, Claudia Wiza, Kerstin Wennhold, Anna Schmidt, Maria Garcia Marquez, Verena Tischler, Sara Kannampuzha and Michael Saynisch as well as Lonza and Boehringer Ingelheim for the financial support.



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