

2020, Natural Sciences (Physics), Christ's College

My first encounter with 'high-level' science was the book of Stephen and Lucy Hawking: *George's Secret Key to the Universe*, which I read around the age of 10. I enjoyed the story, the nice illustrations and the knowledge about the solar system and black holes. Therefore, I instantly devoured the next two volumes as well, and the experience awakened my interest in physics. Following the advice of two of my go rivals, I have spent six years in the specialised mathematics class at Fazekas Mihaly Secondary School. At school, there has been a very motivating atmosphere, a large amount of freedom and numerous facultative and group tasks, throughout which I have been able to improve my cooperation and research skills. The level of teaching has been quite high: we have learnt about modular arithmetic in maths, Fourier series in physics and entropy and Gibbs free energy in chemistry class. In addition, I have been exposed to chemistry material in a very structured, logical and detailed way by an extraordinary chemistry teacher, who also used various experiments, my favourites being the 'barking dog' and the oxidation of a gummy bear. For the last three years, I have also been a student of the Milestone Institute. There, I have studied academic writing and have gained other extracurricular scientific knowledge in English. For instance, I have written essays about the quantum mechanics of white dwarfs, dark matter and the ethics of human cloning. To improve my problem-solving skills, I have participated in the most prestigious national level physics and chemistry competitions. In chemistry, my most outstanding results were a first place in 2017 and a fourth place in 2018 and 2019, and in physics, a first place in 2018 and second place in 2019. I also won the Szilard Leo national modern physics competition two times. Furthermore, I achieved first place in one of the most prestigious physics problem-solving competitions in Hungary, the Eotvos competition, where I even competed with first-year undergraduate students. Apart from individual competitions, I have participated in the Durer team competitions in Hungary; in 2018, my team became second in chemistry, and in 2019, first in physics. It should be noted that all of the team members came from different institutions. I think it is very stimulating to exchange ideas and knowledge this way. My international 'science career' started in 2016 when I got excited to hear about the IJSO and spent a summer studying to earn a spot on the Hungarian team. I won two medals: one silver (Daegu, 2016) and one gold (Bali, 2017). I have also been a member of the top Hungarian team of EUSO as a chemist. In 2017, my team won the absolute top prize (Copenhagen, gold medal) and in 2018, we were 11th (Ljubljana, silver medal). In 2019, I qualified for IPhO and EuPhO in physics and received two bronze medals, and I participated in the International Mendeleev Chemistry Olympiad, where I also received a bronze medal. Throughout these competitions, I have learnt how to deal with stress and was able to meet many foreign participants. I also like to invent my own problems and polish them until they are perfect. I have already published two physics tasks in KoMaL, a Hungarian journal that poses various math, physics and computer science problems

for high school students. I have also been submitting monthly solutions to KoMaL problems for years. In my free time, I like reading-especially historical novels and fantasy-and playing board games. When I was young, I used to play tennis and swim. Nowadays, I tend to deal more with economics as an extracurricular activity. I would like to continue my studies in order to have more years to learn about various fields of research in chemistry and physics and the points of contact between the two disciplines. I am convinced that with my skills, motivation and ability to concentrate, I will be able to complete the requirements of the course.