

IYSC

PRESS

DAILY REPORT ABOUT THE INTERNATIONAL YOUTH
SCIENCE CONGRESS

Closing Ceremony

FREE AFTERNOON

After the long expected closing ceremony, the participants had the entire afternoon off until the end of congress party would begin. Many of the foreign delegations took their time to take a closer look at the city of Bremen and its most famous and central sights. Others spent time at the famous Christmas market. In general, everyone had time to recover from the eventful week and spent some more time with the other delegates.

OPENING SPEECH – CONGRESS CHAIR

All good things must come to an end, even the IYSC 2019. Another speech given by the Congress Chair Eva Grotheer set the starting point for the ‘beginning of the end’ for this years IYSC. After every participant, and additionally a science class from the hosting school, had assembled in a hall of the “Überseemuseum”, the ceremony could get started. Ms. Grotheer welcomed the people present, before she moved on to express her positive feelings about the last few days at the congress and wished the delegates good luck with their presentations. Finally, she introduced the following procedure and thus the ceremony could begin.

THE PRESENTATIONS



Beginning with bioscience, Tim Hainz-Sator (A), Eva Pešti (SL), Tijs Smits (BE) and Emma Stroemgaard (DK) represented their fellow delegates when talking about the topic of gene therapy and diagnosis. Their introduction set the mood for the severity of the topic, with the expression being: “I was supposed to say something funny, but really, it’s just



not in my genes.” Firstly, they explained what gene therapy was in general terms and also provided a small crash course on the DNA to make sure everyone can follow the presentation. Furthermore, they talked about the Human Genome Project, the biggest collaborative project in biology, and explained its purpose. Moreover, they talked about the timeline of gene therapy going back to the 19th century, even though the research is still ongoing and new in the scientific community. The speakers went in depth into the different methods of gene therapy, such as CRISP/Cas9 or vectors. The entire topic tackles the theme of a “new era in the medical field” and its many possible applications. Not only an essential research matter in furthering medical development, the presentation also showcased the ethical and economic issues of this innovative method, emphasised by the concluding quote: “with great power comes great responsibility.” After the presentation there was an opportunity to ask questions, moderated by the chairs and Congress Chair, which allowed for interesting discussions.



Electric mobility, the research topic of the energy and environment group, was presented by the delegates Goran Jocić (SL), Benedek Bárányi (HU) and Adam Roden (F). They first elaborated

on the development of electric cars and the many obstacles it is currently having, as presented by Mr. Jocić with the example of the batteries. First of all, there are many possible ideas for an electric battery, in order to move away from fossil fuels in the car industry. Furthermore, he explained that one possible option would be the lithium battery as a power source. However, there is a deficiency of lithium on earth, which would mean that it would be expensive and limited. Another option would be the sodium battery, but it is currently too heavy to be installed in electric cars. Another aspect that the committee talked about was, what electric energy meant for combatting climate change, as the reduction of the loss of energy is necessary. In many countries the government promotes and encourages citizens to switch to electric vehicles. This is done by helping to pay a percentage of the costs, reaching from charging stations to vehicles themselves, as well as reducing taxes. But at this point in time, charging is still very





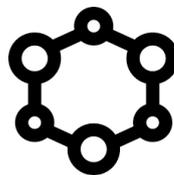
expensive. According to them, having a personal charging station at home is financially beneficial in the long term, but the start-up costs are still too high for most. That is why there are now initiatives by governments to help pay some of the costs, as previously mentioned. Public transport is vital, yet has to be reduced because of the current climate emissions. Public transport is projected to be more popular than personal transport in the near future. A leading example is Denmark, as a leader in renewable energy. Reportedly, buses in Copenhagen run on bio fuel. Renewable sources have a low power density and because of that it is, at least at this point in time, not possible to completely switch from fossil energy resources to renewable energy. It is said that an area the size of Spain full of solar panels would be needed in order to power the world. Moreover, solar panels are expensive and this action would be too costly to execute. There are, however, possible solutions. For one, energy can be recycled, or another idea would be to produce more solar panels. As the mass production of solar panels would reduce the price, because of costs for production would decrease, it is an option. After the informative speeches were concluded, the audience again had the chance to ask a few questions. The highlight of this particular Q&A was the question asked by Antje Grotheer, the Vice-President of the parliament of Bremen, who asked whether or not the comfort of the citizens living near e.g. wind power plants should be sacrificed for production of clean energy, thus introducing a political element to the scientific research, which is something necessary for real-life application of such technologies.



The last presentation before the short intermission concerned the topic of extra-terrestrial resources by the space science committee, represented by Ruth Soto (ES), Louisa Toft (DK) and Balázs Bánszki (HU). The topic was introduced by rhetorical questions towards the audience about such things as space tourism, which would be answered during the speeches. After a hopeful expression of “this is the future, after all, everything is possible,” the delegates defined space resources as “specific elements of value in space or in certain celestial bodies.” Furthermore, they



explained the need for extra-terrestrial resources, as human had already exploited everything exploitable on earth and there are potentially available resources on planets, the moon and asteroids. Moreover, we could not only take or farm elements of value in space, but also move things from earth to celestial bodies, such as human residencies and plantations – overall, the theoretical possibilities are endless. Then the limitations come into play, such as the enormous financial commitment needed for any of the planned space missions, as well as the health problems astronauts would suffer from due to longer expeditions, as well as the toll the missions would have on the already strained environment. In the end, the topic fuelled engaging discussions, such as the debate on whether or not it is ethical to sacrifice human safety in the name of science or whether or not humanity should even be thinking about colonialization in space. The group’s position could, in conclusion, be summed up by their expert’s quote: “Exploring space is necessary if we want to ensure the human species for the next many years to come. Not only is it important for human survival, but also because it is in the human DNA to explore” (Michael Fick, Airbus Engineer).



After the short break the ceremony continued with nanotechnology, energy and environmental challenges in that field, to be precise. Their results were presented by Dominik Hauswirth (A), Flore Behaeghel (BE), Mia Hozjan (SL) and Thea Hansen (DK). The delegates began by showing a definition of nanoparticles, particles between 1 or 100 nanometres, and explaining that nanotechnology involves the manipulation and control of such particles. Their controlled reaction and different properties depending on their size lead to many possible applications, such as solar panels, computer chips and other advanced technologies. These applications can contribute to some of the UN’s Sustainable Development Goals, and will thus help to solve environmental challenges. Despite the fact, that nanotechnology will prove itself useful, the rapidly growing and mostly unknown science still has dangerous aspects, that should be taken into consideration. Nonetheless, “the future could be in the hands of nanotechnology.”





Last, but definitely not least ICT with blockchain technology. Presented by Maxim Lokshin (A), Erik Hauzer (SL), Gergő Bujdosó (HU) and Adriana Pineau (F), they talked about the future

possibilities of blockchains how they could change things we do in many ways. Additionally, they also explained digital currencies, which there are a lot of, but the most popular ones are Bitcoin and Ethereum. Bitcoin is preferred because of the fact that there is no bank to control the cashflow. One of the many problems that makes bitcoin unreliable, is that the value regularly fluctuates. On the other hand, Ethereum uses a so called decentralized applications that have smart contracts. Smart contracts are anonymous contracts, that are part of a blockchain and district after the transfer. Blockchains could potentially be used as new ways to find out certain information, as well as do certain things safer. Food could be tracked back to where it was produced by just giving in the hash, that will then give you information about where the food was made. Another alternative use would be for voting procedures, which could potentially be a lot securer than how voting is today, avoiding the possibility of a rigged election. One last example mentioned was that it is already used by companies i.e Spotify to avoid piracy and copyright infringements. Artist store their songs in blocks and by doing so, nobody is able to steal the song.

Though there are many positive aspects to the use of blockchains, there are, however, many threats such as the ecological issues, and also blockchains require a lot of energy. Another problem is that, though general transactions are visible, transactions between the two parties are not. This could lead to e.g. guns being sold illegally without possible tracking from the government, which the black market would profit from. Another aspect is that governments will not allow this official cryptocurrency. First of all, because of the lack of control they will have and the decentralisation. In addition, this could lead to the fall of banks. For these reasons in some countries that is already illegal. Money transfers will no longer be need to be done through a bank, but with a blockchain the transfer goes directly to the other party. As governments rely on banks that are crucial for a stable government as we know it, an official uniform cryptocurrency is unlikely.



CLOSING SPEECH – CONGRESS CHAIR



Following the impressively informative presentations of the research groups was the last speech given by Congress Chair Ms. Grotheer. After she expressed her delight of the results this week's work produced, she stressed the fact, that it would not have been possible, without each and everyone participating. Moreover, she continued to thank everyone, specifically Mr. Endig, without whom there would not have been an IYSC in Bremen, all the teachers present, the experts, who offered their knowledge and support, as well as the chairs and assistant chairs, and, last but not least, Mr. Martinez from Investiga. She also emphasised that this was a voluntary project, which enabled students to engage with science in their free time and hopefully further fuel their passion for these subjects. Furthermore, her successful speech cannot be condensed in a better way, than in her own words at the end: "So if I could suggest what you should take home from this congress, it's not the fact that you could make \$5 trillion mining an asteroid, or that Germany already reached Overshoot Day in March, but your enthusiasm for science, your international relationships and cooperation skills, and also the ability and desire to understand science - and to make it understandable for other."

CLOSING SPEECH – MR. MARTINEZ

At the end of the official closing ceremony of the International Youth Science Congress, the one having the last words was Mr. Martinez himself, who used his closing speech to emphasise how impressed the teachers were of the great final results and to congratulate the delegates on their good work. Moreover, his concerns about the difficulty of the chosen topics proved to have been unnecessary, as they engaged the delegates on a level that school education does not. In addition, he continued on to explain, that teachers in general try to prepare their students for the future, but that they can only give them the tools necessary to adapt to change in their lives and society. Furthermore, he evaluated that the

times when only one person developed a theory, such as Einstein, are over and that the scientific research can nowadays only be contrived by groups of research teams. Similarly, he explained the importance of human science in contrast to isolated experimental science, as data alone cannot change the world, but the cooperation of many different parties can. Lastly, he also thanked the Hermann-Böse Gymnasium, the parliament of Bremen and the experts for their collaboration, as well as inform the participants about the passing of the former director, who was valued greatly. Mr. Martinez' final request to the students was subsequently for them to "go out, build a better Europe and change the world."

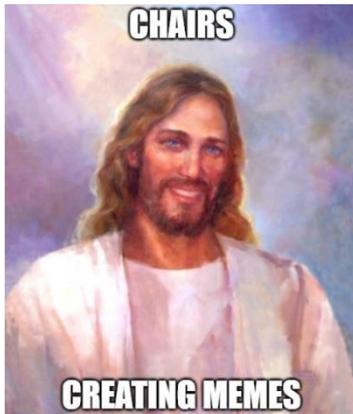


END OF CONGRESS PARTY

The grand finale of the IYSC took place at the Konsul-Hackfeld-Haus, which was the end of congress party. After the free afternoon all of the participants, delegates, chairs and teachers alike, gathered in a hall, where they were provided with well-deserved food and drinks. The chairs also made sure, that the delegates would not be staying in their delegations, and thus assigned numbers to the students, which would then enjoy their meal in a new formation, so they could have one last chance at meeting new people. Next, the tables were rearranged, so that a dance floor was formed, sufficient enough to handle the infamous Macarena. In conclusion, the entire congress was an overall success in allowing a scientific as well as cultural exchange.



Meme Gallery



Credits to Matthias, Nicolai and Amelie