26.07.2019

Curious students spending their school holidays in the lab

The Saxony Anhalt Student Academy spent one day at the IPB, where the participants conducted laboratory experiments. First, plant material was homogenized (left), then DNA isolated (middle), and finally DNA fragments analyzed (right). Photos: Courtesy of Sabine Rosahl.

During the first weeks of school holidays in Saxony-Anhalt, we were pleased to welcome many high school students at our institute. On July 12, the Saxony Anhalt Student Academy visited, followed by the BioByte on July 18.

The **Student Academy** (Landesschülerakademie) of the Anhalt University of Applied Sciences (HS Anhalt) annually invites students aged 14 to 17 years to a two-week orientation course. The seminars and lab classes at the HS Anhalt in Köthen included excursions to research institutions such as the IPB. The participants chose from different course tracks in advance. For the biotechnology track with five curious students, Prof. Sabine Rosahl, IPB research group leader and professor at HS Anhalt, and her team prepared an exciting day at our institute around the topic CRISPR/Cas. After an introductory lecture on this gene editing method, the students did practical work at the lab. The young researchers studied plants that were modified with CRISPR/Cas to produce certain pigment compounds for example. The students had to homogenize plant material, isolate DNA, and analyze DNA fragments according to their size – thereby, obtaining an insight into typical biotechnological laboratory work.

The **BioByte** of the Institute of Computer Science at the Martin-Luther-University Halle-Wittenberg and the Leibniz Institutes IPB Halle and IPK Gatersleben took place for the second time this year. Students of the 10th and 11th grade took a week to learn what it means to study bioinformatics. At the IPB, they learned about determining chemical compounds contained in plants. First, the 21 participants were given a tour of the greenhouses and phytochambers as well as a mass spectrometry (MS) laboratory. MS is a powerful method to identify chemical compounds or to characterize the chemical composition of mixtures. For the subsequent lab work, MS experts Dr. Stefanie Döll and Dr. Karin Gorzolka provided fruits like raspberries and grapes, from which an extract for MS analysis should be prepared. The countless signals from chemical compounds and their fragments, which a mass spectrometer supplies, then have to be evaluated. On the computer, the students created such an evaluation workflow with the researchers of the Bioinformatics and Mass Spectrometry group. With that workflow at hand and given a real MS dataset, they had to solve the question "Does the sample contain blood or ketchup?".

We hope that both initiatives could help the participants in their career orientation and inspire one or the other to study in the STEM - perhaps even plant – field.

The Landesschülerakademie is a joint project of Anhalt University of Applied Sciences with the Ministry of Education of the State of Saxony-Anhalt. Project leader: Prof. Carola Griehl (HS Anhalt). Contact person at the IPB: Prof. Sabine Rosahl.

The BioByte is organized by the Institute of Computer Science of the Martin Luther University Halle-Wittenberg together with the Leibniz Institute of Plant Biochemistry Halle (IPB) and the Leibniz Institute of Plant Genetics and Crop Plant Research Gatersleben (IPK). Furthermore, the BioByte is supported by numerous partners. Contact person at the IPB: Dr. Steffen Neumann.