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# Welcome to the *International Week 2017* in Melk

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Growing ideas for the world of tomorrow in the field of science, technology, engineering and mathematics was the idea of the *International Week 2017* because climate change, digital world & security 4.0, geoengineering, green innovation, genome editing, populism & democracy are in the present scientific discourse. We added the arts because we had also a cultural program in Vienna and Melk and so SteAm was the motor of this week and an old steamboat took us through the Wachau, an Austrian valley with a picturesque landscape formed by the Danube river.

## Cultural Program on Sunday, May 28th

The cultural program started on Sunday in Vienna: In the Hofburg we attended a holy mass: "Missa solemnis". W. A. Mozart wrote the C major mass KV 337 in Salzburg in March 1780. The Vienna Boys' Choir (Wiener Sängerknaben) performed this festive mass in the so-called Wiener Hofburgkapelle. The choir of boy sopranos and altos is one of the best known boys' choirs in the world. The boys are selected mainly from Austria, but also from many other countries. After this touching event we went for a walk along the Vienna Ring. This small part of the inner city is an Austrian World Heritage Site. The majestic boulevard was laid out in the mid-19th century and around the center of the city. Ornate buildings such as the state opera, parliament buildings, city hall. Burgtheater, stock exchange and numerous palaces were erected along the resulting boulevard. We discovered the MuseumsQuartier and also took a coffee break in the Café Landtmann, where we enjoyed the traditional Viennese coffee-house atmosphere that is famous all over the world and tasted the traditional Viennese Apfelstrudel with whipped cream.

## Monday, May 29th

On Monday we arrived at the campus in Melk, one of the most famous villages of the Wachau. In my opening words I gave a warm welcome to all our international guests, colleagues and students. I started with our guests who had the longest trip: Dr. Alfred Posamentier, former Dean of MCNY (Mercy College New York), and now executive director for international Programs from Long Island University. From the MCNY we were glad to welcome: Dr. Meghan Marrero, Dr. Peter Hillman, Dr. Olga De Jesus. From Hungary: Dr. Vilmos Vass, Dr. Bernadette Nagyhazi and Dr. Szusanne Szilvasy.

From the Netherlands, Haarlem, we were glad to welcome 9 students: Mick Borst, Kaylee Jongewaard, Evelyne Kurvers, Roy Scheerman, Joachim Van Born, Harry Van Heerden, Amber Tolman, Bianchi Opdam and Kayra Deun.

Our Erasmus Incoming students took also part in the International Week: Maria Rojas Marcos Angulo, Marcias Roca de Togores Conceptio and Raquel Lopes Vega from Spain; Konstantina Sfendelyaki from Greece and Aldina Mujanicich from Switzerland. From our house I welcomed the Rector DDr. Erwin Rauscher and the Vice rectors Dr. Norbert Kraker, Dr. Elisabeth Windl and Dr. Maria-Luise Braunsteiner from the Quality Assurance Board. Last but not least I welcomed all colleagues – especially from the Department 3 who helped me organizing this International Week.

In this week the participants gained an insight into how students of all our partner institutions experience and learn child-oriented teaching not just by means of bookish knowledge, but by acting actively in seminars which they have to attend during their period of education.

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To open the meeting I gave the floor to my rector who started his keynote by telling the famous fairy tale about "the green snake" which is from a novel by Johann Wolfgang von Goethe. He also mentioned that SteAm is not hot air but would entail hard work for us during this week.

**Dr. Meghan Marrero** (Mercy College New York) gave the first keynote: **Engaging Students in Inquiry Using Authentic Ocean Data**. To engage in inquiry, students must gain experience in obtaining, interpreting and analyzing data. Freely available oceanic data sets include sea surface temperature (SST), bathymetry, chlorophyll, pollution, sea ice, salinity and tracks of animals. Utilizing these and other authentic data sets can make learning experiences more powerful for learners, giving students the opportunity to gain contextual understandings of the applications of science. This presentation will share recent findings on a study of teaching and learning using authentic ocean data.

The day ended with "**Taste the culture**": To get to know each other's countries and cultures better the participants brought typical food and drinks from their country to share with the others.

## Tuesday, May 30th

On Tuesday we made a trip by bus to the Institute of Science and Technology Austria (IST Austria), which is a young international institute dedicated to basic research and graduate education in the natural and mathematical sciences. IST Austria is committed to conducting world-class research. By 2026, up to 90 research groups will perform research in an international state-of-the-art environment. Another goal of this institute is supporting science teaching and learning in Austrian schools.

The University College of Teacher Education in Lower Austria has a cooperation with IST Austria: gifted children from primary school meet every year internationally renown researchers to work together in the field of natural sciences and information technology. The teacher training students take care to the children and translate in both directions.

**Dr. Suzanne Kapelari** (University of Innsbruck) had the first presentation of this day on: **Inquiry Learning in STEM subjects**. She explained that Science Education has traditionally been assigned the role of transmitting knowledge. Over the past fifty years, there have been dynamic changes in the conceptualisation of science learning and of science learning environments, integration concepts such as situated learning or the sociocultural perspective of learning. These changes have important implications for how we interpret the role of inquiry in school science education programmes as well as curriculum development, teaching practices and assessment techniques.

**Dr. Christian Bertsch** (University College of Teacher Education in Vienna) gave the second keynote: **Inquiry Learning in the Primary Science Classroom**. He explained that Inquiry Based Science Education would foster both understanding of scientific concepts as well as an understanding of how scientists work when solving problems. Besides the raising popularity of Inquiry Learning, a current unified view of precisely how inquiry should be defined does not exist. The presentation tried to compare current conceptions of Inquiry Based Science Education (IBSE) and discussed the implications of Continuous Professional Development focusing on Inquiry Based Science Education (IBSE) on teaching practice in the primary science classroom.

In the afternoon, we visited the **Vienna International School** in Wien-Donaustadt. Their mission is to empower all of the students to be successful and responsible in a nurturing and diverse learning community, so that they can achieve their potential in a changing world. In harmony with the ideals of the IB Learner Profile, and the spirit of the Universal Declaration of Human Rights, they aim for students to be inquiring, inspired and involved lifelong learners. (http://www.vis.ac.at/show_content.php?sid=26&language=en)

## Wednesday, May 31st

**Professor Peter C. Hillman** (Mercy College New York) gave the first lecture on Wednesday: **Developing and supporting rigorous science education at the elementary school level**. This five-year professional development

project was designed to support teachers in the K-12 science journey of students. Topics included the importance of learning about the growth and development expected in student's science knowledge over their school career as well as how the project provides elementary science teachers an experience that is both personally and professionally reinvigorating and how elementary level science teachers can incorporate higher level science content through creativity, the arts and play.

**Dr. habil Vilmos Vass** (Hungary) reported about **Curriculum Planning and Implementation on Inquiry-Based Learning in Hungary**. The lecture focused on inquiry-based learning. After the conceptual analysis, the first main part of the lecture analysed the differences between content- and competency-based curriculum planning and gave some interdisciplinary approaches in practice. The second main part of the lecture showed some best practice on different levels (macro, micro) of curriculum implementation focusing on the coherency between SteAm and inquiry-based learning. Finally, he concluded his lecture raising some questions and dilemmas.

**Dr. Bernadette Kövérné Nagyházi** (Hungary) gave the third presentation: **Math, Art and IT in language teaching.** In this presentation, the meeting point of Mathematics, Art and IT in language teaching was presented on a special and unique part of HFL teaching, teaching word order. The examples will be Hungarian, but this method for teaching word order could be accepted in different languages. The presentation also highlighted the importance of cooperation in different sciences: Mathematics helps in directing the focus on the material; Art helps in visualizing the rules; and finally, software, worked out by the presenter helps the language learners understand and practice using the rules.

**Dr. Alfred Posamentier** (Long Island University New York) demonstrated us in the afternoon that **Mathematics is All Around Us**. Among other topics, he discussed the following issues: Why are sewer covers round? Which other geometric shape can also be used? Whispering Points, The Golden Ratio and The rule of 72.

**Dr. Evelyn Süss-Stepancik** and **Mag. Kathrin Permoser** (University College of Teacher Education in Lower Austria) continued with **Empowering girls in IT competences**. The project aims are: Raising the interest of female students for ICT professions. Deconstructing gender related stereotypes in ICT. Change of perspectives – resources oriented approach. Change the view of technology. Gender gap in IT.

**Dr. Olga De Jesus** (Mercy College) gave the third presentation**: A Simulated Classroom Experience: Preparing the 21st Century Teacher**. The TeachLivE (TLE) Lab, is a mixed-reality teaching environment supporting teacher practice in classroom management, pedagogy and content. The TLE Lab, developed at the University of Central Florida, is currently used at over 85 institutions in the United States and growing to include multiple school districts and international partners. Each partner utilizes the TLE Lab in a unique manner depending on the needs of their students, teachers, professors and community stakeholders. The TLE Lab provides pre-service and in-service teachers the opportunity to learn new skills and to craft their practice without placing "real" students at risk during the learning process.

Visiting the **library of the Melk Abbey** with a special guide through normally closed rooms was another highlight of this week.

## Thursday, June 1st

On Thursday **Mag. Edda Polz** (University College of Teacher Education in Lower Austria) started with the presentation: **Enterprising science & technology at primary school**. She told us that *"The scientist is not a person who gives the right answers, he's one who asks the right questions"* (Claude Lévi-Strauss). Her presentation focused on adventurous possibilities of introducing science and technology to the primary school classroom. Young learners are usually highly motivated for conducting experiments and often ask unexpected questions. It is our responsibility as teachers to facilitate creative thinking and encourage children's natural scientific curiosity. After this presentation we made a boat trip through the Wachau from Melk to Dürnstein.

In the late afternoon, **Dr. Hubert Gruber** (University College of Teacher Education in Lower Austria) and the teacher trainees **Alexander Popvic** and **Mag. Janina Hübner-Trieb** showed us **Challenges and opportunities in the development of integrative learning concepts and learning materials with music and mathematics by using**

**the Lesson Study method**: Collaboration, dialog and the exchange of ideas are paramount for optimizing educational achievement. Music can offer an important contribution to this. In this presentation the results of a bachelor thesis will be shown. Through an active and inspiring exchange, by using the Lesson Study method, innovative learning materials for music, mathematics and other subjects were developed and tested.

In the evening, **Sandra Seiwald** and **Gudrun Topf** (via Livestream) gave a **"Musik und Mensch" Conversation-Concert:** "Seiwald & Topf" call themselves an inclusive duo, Sandra Seiwald, a blind singer and Gudrun Topf at the piano. They presented examples from their concert program, Austropop, ballads, gospels and songs from musicals and talked about their special kind of presentation, where for the first time a sign language interpreter translates the text and the rhythm of the music for deaf people.

On the **Farewell-Party** we tasted Austrian food and wine and sang international songs together.

## Friday, June 2nd

On Friday we reflected the interesting days and planed the next International Week which could have the topic PALM TREE: In the European Project PALM schools collaborate with higher education institutions. PALM exists through and for learners aged 6 to 14, who are authors and users of a platform developed in the context of an Erasmus+ Action 2 project coordinated by the University College of Teacher Education in Lower Austria. The pupils speak at least one of the languages English, French, German, Greek, Hungarian, Italian, Ladin and Spanish and attend schools in Austria, Cyprus, Hungary, Italy and in the UK. Their teachers supervise them in text production and selection in PALM boards, and are also the link to the institutions where the learning materials for the platform are generated. Four partner schools and eleven associate schools and six higher education institutions are creating PALM over a 3-year period of collaboration between 2015 and 2018.

While PALM is an ongoing project, we suggest that TREE will stand for Teaching, Research, Education and Evaluation – which are the four most significant branches in teacher education.