



Sparkling Science >

Science linking with School
School linking with Science

PROJECT OUTLOOK, 3rd December 2008

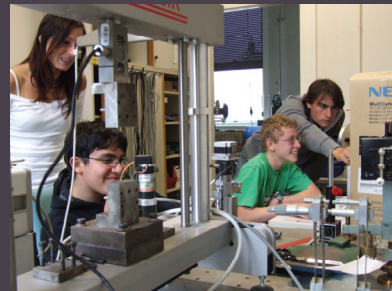
Testing practically sustainable cooperation between
University and School: Research and School groups
develop joint presentations for students younger than 14

LEADING INSTITUTION

University of Vienna,
Faculty of Physics
Coordinator: Ao. Univ.-Prof. Dr. Viktor Gröger
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SCHOOLS INVOLVED

GRG 3 Kundmannngasse "Landstraßer Gymnasium",
GRG 8 Albertgasse, GRG 17 Hernalser Gymnasium
Geblergasse, Gymnasium Franklinstraße 26,
AHS22 Theodor Kramer Straße, Höhere Lehranstalt
Für Umwelt und Wirtschaft Yspertal, NÖ



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Austrian Federal Ministry of
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Testing practically sustainable cooperation between University and School: Research and School groups develop joint presentations for students younger than 14

How can we interest grade school students below 14 with attractive hands-on experiments in physics? How can we show them that their own curiosity and fun in experimenting is just the same as the passion and enthusiasm of scientists for their research? How can we enable them to remember this experience as adults when they will be confronted with science and research? Three Research Groups (Faculty of Physics, Vienna University) and five School Groups (students and teachers from Viennese schools) try hard to answer these questions practically during the school year 2008/2009. The aim is to join the creativity of the participating young people with the expertise of the scientists in the course of the development of the presentations and create learning experiences in both groups. Scientists practice their communication skills and the viability of simple concepts of explanation, and students gain personal experiences about research activities and research topics.

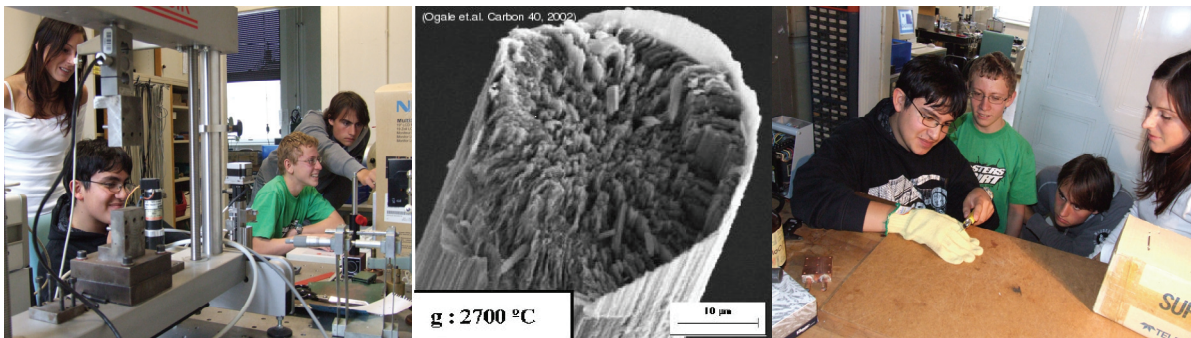
A particularly fruitful format of cooperation including multiplication effects

In the development of the presentations we intend a real partnership between pupils, teachers and scientists. The scientists learn about the concerns, motivation and desires of this age group and can also present their activities to open minded young people and awaken their interest for research. The student groups will then demonstrate the motivating hands-on presentations for students below 14 and broaden the scope further to this target group. Younger people even if they are not particularly interested (yet) in science are in general more easily accessible because at this age they are more open for new experiences, curious and capable of enthusiasm so that a first interest may be started. Project director Prof. Gröger emphasizes: „encouraging young talents by university should combine direct efforts to make more young people study physics with long term programs for making science better accepted by society.“

Research and investigations in this special program ‚Sparkling Science Fellowships‘ concentrate on the communication process between the partners itself. In order to learn more about the conditions for successful and sustainable cooperation between research and education partners the project is supported (Dr. Helga Stadler) and evaluated (Clemens Nagel) from a physics education view.

Furthermore additional interviews in schools and university will be held.

The school groups are organized in various ways. Collaboration at school occurs in whole classes (also in interdisciplinary teaching), in specialized physics courses held for groups of particularly interested pupils or in a group of pupils in an extra activity in addition to scheduled school hours.



Starting the Project School Students as ambassadors of physics

Research topics offered for this project by the Physics Department

A relation of key aspects of the topics with individual life experiences is the main criterium for the choice

1. **Aerosol Physics**, Vice-Dean Ao. Prof. Dr. Regina Hitzenberger
 Clouds, Air pollution, Nano particles, Global Change of Climate
2. **Diffusion**, O. Univ. Prof. Dr. Gero Vogl, Mag. Michael Leitner (PhD student)
 Universal Phenomenon in global spread of people, languages, animals, plants but as well important for particles down to microscopical and atomic scales
3. **Carbon fiber reinforced Carbon**, Dr. Harald Rennhofer und Petra Fürst (Diploma student)
 Extreme Properties of carbon fiber reinforced carbon used as well in the propulsion nozzles of space shuttle as in ultra-light sport sticks specialized for skiing and nordic walking.

Choosing the topics by the school groups and individual starting workshops

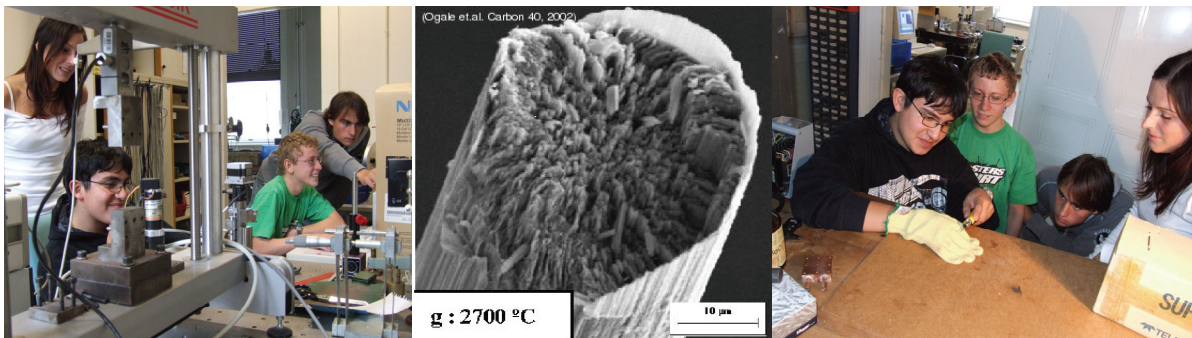
In a joint meeting of all school and research groups the topics were presented. The students' favourite topics could all be accepted.


The project started individually for each group with a kick-off workshop during a visit at the research group. The main aspects were mutual getting to know each other, communication structures and an overview about the research subject. Petra Fürst, coordinating Diploma student: "If I look back the time when I was a pupil myself seems not so long ago, it is easy to find the contact, I have fun."

For the Vice-Dean, Prof. Regina Hitzenberger "the participation in this project is a welcome opportunity to let others share in my interest in physics and to show young women, that physics is not an area only for men."

Activities at University and at School alternate during the project time. Until the end of the year it is the school where creative presentation ideas enabling active participation are developed. A student from GRG19: „For me it is fascinating to contribute to such a joint effort in a topic which is entirely new for me, and I wonder how this all will work in full detail“

The teachers have a key role especially in the phases of development of the presentation at school especially for maintaining the pupils' motivation. Even at the first contacts for preparing the application Christa Deinlein, a very active teacher, pointed out the opinion of most of her colleagues: „Without suitable compensation for the supervision by the teachers a long standing institutionalized collaboration will be hardly possible.“





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