

24th Symposium on Chemistry and Science Education

**Building bridges across disciplines for transforma-
tive education and a sustainable future**

University of Bremen, 01-03 June 2018



© Lisa Schwarz, Birgit Winter, Ervien Grote@pixelio.de

Program, Abstracts and Information
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<http://www.chemiedidaktik.uni-bremen.de/symp2018/index.html>

Rationale

The 24th Symposium on Chemistry and Science Education taking place at the University of Bremen in June 2018 continues a long tradition of symposia stretching back to 1981. Already in the past, the symposia focused the question of how science education research can help to improve chemistry and science teaching and learning, and also which the objectives are to be followed. In recent years, debate on the challenge of the sustainable development of our future added another dimension towards this discussion. This was already the focus of the 2014 symposium in Bremen.

We live in times of continuing challenges of transforming today's world for a sustainable future. This is a challenge for all domains of learning science and beyond. The title of the 2018 symposium ***Building bridges across disciplines for transformative education and a sustainable future*** is suggested to provoke the participants for debate and answers towards these challenges. Main questions addressed will include:

- What do we mean by transformative education and how does it go beyond education for sustainability?
- Which curricula and pedagogies are available to start transformative education and what do we know about their effects?
- What do we know from research about fostering and hindering factors concerning the implementation of transformative education for a sustainable future?
- What do we know about attitudes, motivation and PCK of practicing concerning sustainability issues and transformative learning?
- How is science teacher training for Education for Sustainable Development (pre- and in-service) operated and what do we know about the development of teachers' competencies in successfully applying ESD in science classes?
- Which research-based strategies do we have for implementing transformative practices into science teaching and in interdisciplinary approaches?
- What consequences does the interdisciplinary nature of most sustainability issues have for transformative educational practices?
- Which role might the informal and non-formal educational sector play to support transformative education?

Program

Friday, 01/06/18

13:00-13:30	Welcome, addresses, intentions of the symposium	Ingo Eilks (Bremen/Germany)
	<i>Afternoon session I</i>	<i>Chair Ingo Eilks</i>
13:30-14:10	General subject <i>Didaktik</i> – building bridges across disciplines in support of <i>Bildung</i> and sustainability	Jesper Sjöström (Malmö/Sweden)
14:10-14:50	Transformation of society, science, knowledge, and education from a geographer's perspective	Lars Keller (Innsbruck/Austria)
	<i>Coffee break</i>	
	<i>Afternoon session II</i>	<i>Chair Ingo Eilks</i>
15:20-16:00	The chimera that is education for sustainability	Ian Abrahams (Lincoln/UK)
16:00-16:40	People's Planet – Sustainable development within planetary boundaries. How is transformative education benefited by using educational content?	Ulrike Peters (Osnabrück/Germany)
16:40-17:20	Bringing chemistry learning back to life and society	Ozcan Gulacar (Davis/US), Christian Zowada & Ingo Eilks (Bremen/DE)
19:30	<i>Welcome evening</i>	

Saturday, 02/06/18

	<i>Morning session I</i>	<i>Chair Bernd Ralle</i>
09:00-09:40	Science education in the anthropocene	Kai Niebert (Zürich/Switzerland)
09:40-10:20	A co-design framework for transformative learning in chemistry education: opportunities, challenges, and realities	Eleni A. Kyza (Nicosia/Cyprus)
	<i>Coffee break</i>	
	<i>Morning session II</i>	<i>Chair Bernd Ralle</i>
10:50-11:30	Promotion of transformative education for sustainability with ICT in real-life contexts	Christoph Thyssen (Kaiserslautern/Germany) & Johannes Huwer (Saarbrücken/Germany)
11:30-12:10	Find my Name! Evidence-based development of an interactive species identification tool	Jorge Groß (Bamberg/Germany)
12:10-13:00	Poster short presentations	<i>Chair Silviija Markic</i>
	<i>Lunch snack and interactive poster session</i>	

24th Symposium on Chemistry and Science Education – Program

Afternoon session

Chair Jesper Sjöström

14:30-15:10	Transformative Education: Please be aware of student's needs for social affiliation	Andre Bresges (Cologne/Germany)
15:10-15:50	A framework to teach cultural competency and social justice in science courses	Ginevra Clark (Chicago/USA)
15:50-16:30	Formal and informal education: Italian experiences to promote content knowledge and ethics in the perspective of sustainability	Paola Ambrogi (Reggio Emilia/Italy)
19:00	<i>Conference Dinner (optional city walk 18:00)</i>	

Sunday, 03/06/18

Morning session I

Chair Rachel Mamlok-Naaman

09:00-09:40	ADAPT TO IT?! Transformative education in a sustainable geography lesson	Leif O. Mönter (Trier/Germany)
09:40-10:20	The Austrian Ecologisation of Schools Network (ECOLOG): Participation for transformative education	Franz Rauch (Klagenfurt/Austria)

Coffee break

Morning session II

Chair Franz Rauch

10:40-11:10	Beyond the introduction to Green Chemistry: building bridges towards a new interdisciplinary syllabus for Brazilian teacher education in chemistry	Vania Gomes Zuin (Sao Carlos/Brazil & York/UK)
11:10-11:50	Teachers' professional learning communities (PLCs) - towards adapting a transformative pedagogy to teaching	Rachel Mamlok-Naaman (Rehovot/Israel)
11:50-12:30	Transformative science education curricula through metacognitive questioning owned by the learners	John Oversby (Reading/UK) & Jude Sanders (Plymouth University and Hibernia College, Dublin/Ireland)
12:30-13:00	Closing – Reflections from the symposium and farewell	Silvija Markic (Ludwigsburg/Germany)