

## Reason – Scientific Reasoning and Argumentation

The international graduate school REASON focuses on interdisciplinary and collaborative research linking psychology, education as well as empirical research on learning in specific domains (e.g. medical education, mathematics educations or biology education).

The doctoral school is funded by the Elite Network of Bavaria (ENB) and offers a structured, interdisciplinary and international training under the roof of the Munich Center of the Learning Sciences (MCLS). Involved researchers from different universities in Munich (Ludwig-Maximilians-Universität, Technische Universität, Katholische Stiftungshochschule), have a broad international network which they use to support the doctoral candidates of the program. The language of instruction is English.

REASON projects investigate specific aspects related to scientific reasoning and argumentation, e.g. how children and adults process scientific evidence in different disciplines, the roles of emotion, collaboration and technology in scientific reasoning and argumentation, how domain-specific and domain-general aspects play together in scientific reasoning and argumentation, and how the development of scientific reasoning and argumentation skills can be promoted by instruction.

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[www.en.mcls.lmu.de/reason](http://www.en.mcls.lmu.de/reason)



2<sup>nd</sup> REASON

Interdisciplinary Spring School 2018

# Advances in measuring scientific reasoning and argumentation

March 5th - 7th, 2018

Ludwig-Maximilians-Universität  
München, Germany



Scientific reasoning and argumentation (SRA) are essential competencies in modern knowledge societies. How do people reason about science? How should we as scientists think about scientific evidence? How can we measure competencies in SRA? These questions and essential aspects of research on SRA will be addressed by leading experts at the 2018 Spring School at LMU Munich.

## Keynotes

- **Micheline (Micki) T.H. Chi** (*Arizona State University*)  
Conceptual change in understanding collective causality versus individual causality
- **Rainer Bromme** (*University of Münster*)  
Bounded reasoning or bounded understanding:  
Revealing (hidden) aims of different approaches on scientific literacy
- **Wolfgang Gaissmaier** (*University of Konstanz*)  
Thinking about scientific evidence: Fallacies and methods of improvement

## Workshops

- **Rainer Bromme** (*University of Münster*)  
Bounded reasoning or bounded understanding:  
Revealing (hidden) aims of different approaches on scientific literacy
- **Micheline (Micki) T.H. Chi** (*Arizona State University*)  
Principles and methods of coding qualitative data
- **Hansjörg Neth** (*University of Konstanz*)  
Grasping uncertainty: What experts and laypeople need to know when reasoning about science
- **Kurt VanLehn** (*Arizona State University*)  
Techniques used by intelligent tutoring systems to analyze (scientific) reasoning

## Symposium

### The use of evidence in research and practice across domains

- **Eileen Gambrill** (*University of California at Berkeley*)  
Ignorance and argumentation
- **Simine Vazire** (*University of California, Davis*)  
Thinking critically about scientific evidence: Lessons from the replicability crisis
- **Manfred Prenzel** (*Technical University of Munich*)  
The use of evidence in education

*Symposium discussant: Christopher Osterhaus (LMU Munich)*

**Organizers:** Frank Fischer (LMU), Martin Fischer (LMU), Moritz Heene (LMU), Heinrich Hußmann (LMU), Birgit Neuhaus (LMU), Reinhard Pekrun (LMU), Beate Sodian (LMU), Stefan Ufer (LMU), Manfred Prenzel (TUM), Kristina Reiss, Tina Seidel (TUM), Birgit Dorner (KSFH), Sabine Pankofer, (KSFH), Ingo Kollar (Augsburg University), Johannes Bauer (Erfurt University)

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Don't miss out on this great opportunity to learn about state-of-the-art research on SRA, as well as to present and discuss your own work with leading experts in the field.

We look forward to applications from PhD candidates who are currently working on SRA. There is no registration fee for participation. PhD candidates without funding from their institutions have the opportunity to apply for one of the 12 available travel grants of each up to 500 €.