

# Interplay of Domain-Specific and Domain- General Aspects of Scientific Reasoning and Argumentation Skills

**International Workshop organized by** Prof. Dr. Frank Fischer (CAS Senior Researcher in Residence), Prof. Clark Chinn, Ph.D. (Rutgers/CAS Fellow), Katharina Engelmann (LMU) and Prof. Jonathan Osborne, Ph.D. (Stanford/CAS Fellow)

This workshop explores the extent to which scientific reasoning is dependent on domain-general and/or domain-specific knowledge. Improving our understanding of this enduring issue in psychology, philosophy and sociology is crucial to deepening our understanding of one of the major goals of science education at all levels. The workshop brings together scholars focusing on scientific reasoning and argumentation in a broad range of domains, including a range of natural sciences, the learning sciences, cognitive sciences, as well as computational linguistics.



Center for Advanced Studies  
Seestraße 13, D-80802 München  
Phone: +49 (0) 89 / 21 80 – 72 080  
E-mail: [info@cas.lmu.de](mailto:info@cas.lmu.de)  
[www.cas.lmu.de](http://www.cas.lmu.de)



International Workshop

# Interplay of Domain-Specific and Domain- General Aspects of Scientific Reasoning and Argumentation Skills

6-8 July 2016

## Organized by

- Prof. Dr. Frank Fischer (CAS Senior Researcher in Residence)
- Prof. Clark Chinn, Ph.D. (Rutgers/CAS Fellow)
- Katharina Engelmann, M.Sc. (LMU)
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Center for Advanced Studies  
Ludwig-Maximilians-Universität München

CAS Researcher  
in Residence

## Wednesday, 6 July

17:30 - 18:15

### Welcome Reception

18:15 - 18:30

**Orientation** (Frank Fischer, LMU Munich)

18:30 - 20:00

### Keynote Lecture

■ Paul Thagard (University of Waterloo)

**Why Reason? Inference, Reasoning, and Education**

Introduction: Clark Chinn (Rutgers/ CAS Fellow)

## Thursday, 7 July

### 1st Session

8:30 - 9:30

■ Susan Goldman (University of Illinois at Chicago), ■ Mon-Lin Ko (University of Illinois at Chicago)

**Domain-Specificity in the Practices of Explanation, Modeling, and Argument in the Sciences**

Discussant: Carla van Boxtel (University of Amsterdam)

9:30 - 10:30

■ Beate Sodian (LMU Munich)  
**Scientific Reasoning in Elementary and Preschool Children. Early Competencies, Cognitive Correlates and Functions for the Acquisition of Domain-Specific Knowledge**  
Discussant: Rainer Bromme (Münster University)

*10:30 - 11:00 Coffee Break*

### 2nd Session

11:00 - 12:00

■ Ala Samarapungavan (Purdue University)  
**Construing Scientific Evidence: The Role of Disciplinary Knowledge in Reasoning with and about Evidence in Scientific Practice**

Discussant: Susan Goldman (University of Illinois at Chicago)

12:00 - 13:00

■ Iryna Gurevych (TU Darmstadt),  
■ Johannes Daxenberger (TU Darmstadt)  
**Domain-Specific Aspects of Reasoning and Argumentation: Insights from Automatic Coding**

Discussant: Frank Fischer (LMU Munich)

*13:00 - 14:00 Lunch Break*

### 3rd Session

14:00 - 15:00

■ Dorothe Kienhues (Münster University), ■ Eva Thomm (Münster University), ■ Rainer Bromme (Münster University)

## Specificity Reloaded: How Multiple Layers of Specificity Influence Reasoning in Science Argument Evaluation

Discussant: Jonathan Osborne (Stanford/CAS Fellow)

15:00 - 16:00

■ Frank Fischer (LMU Munich), ■ Andreas Hetmanek (TU Munich), ■ Katharina Engelmann (LMU Munich), ■ Ansgar Opitz (LMU Munich)

**Beyond Intelligence and Domain Knowledge: Scientific Reasoning and Argumentation as a Multi-Dimensional Cross-Domain Skill**

Discussant: Leona Schauble (Vanderbilt University)

*16:00 - 18:00 Coffee break*

and **Poster Session** (Members of the international graduate program REASON)

17:00 - 18:30

**Meeting of Authors and Editors**

19:00

**Conference Dinner** (Weinbauer)

## Friday, 8 July

### 4th Session

8:30 - 9:30

■ Clark Chinn (Rutgers/CAS Fellow)  
**General Versus Specific Epistemic Cognition: What – if any – Benefits Arise from General Knowledge?**

Discussant: Paul Thagard (University of Waterloo)

9:30 - 10:30

■ Leona Schauble (Vanderbilt University)  
**In the Eye of the Beholder: Domain-General and Domain-Specific Reasoning in Science**

Discussant: Beate Sodian (LMU Munich)

*10:30 - 11:00 Coffee break*

### 5th Session

11:00 - 12:00

■ Carla van Boxtel (University of Amsterdam)  
■ Jannet van Drie (University of Amsterdam)  
**Historical Reasoning: The Interplay of Domain-General and Domain-Specific Aspects**

Discussant: Ala Samarapungavan (Purdue University)

12:00 - 13:00

■ Jonathan Osborne (Stanford/CAS Fellow)  
**Styles of Scientific Reasoning: What Can We Learn from Looking at the Product not the Process of Scientific Reasoning?**

Discussant: Clark Chinn (Rutgers/CAS Fellow)

13:00 - 14:00

**Farewell Lunch**

Afternoon

**Discovering Munich** (Excursion)