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Seminar on Philosophy of Science:
Social Epistemology
Carnegie Mellon University
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Dr. Kevin Zollman
email: kzollman@andrew.cmu.edu
office: Baker Hall 155D
office hours: Wednesday 2:00-4:00pm

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Traditional epistemology and philosophy of science has focused on the individual learner, usually learning in isolation. While philosophers have clung to this model of inquiry, it has become less and less accurate. This course will focus on a new type of epistemology, "social epistemology," which focuses on the uniquely social problems that learners confront. These range from problems faced by individual learners – how to handle testimonial evidence or what to do when one finds one disagrees with another – to problems that groups face qua groups – how should a group communicate or how does one form a "group opinion."

This alternative epistemology has utilized a variety of different methodologies. It should be no surprise that this course will focus on the mathematical techniques, but we will look at a few debates that occur in the more traditional philosophical literature. You are especially encouraged to consider how formal methods might be applied to these problems and also to consider how the formal models in the course might be inadequate to deal with those problems.

Requirements: A grade in this course will be awarded on the basis of a final paper. The final paper can be of varying length, but you are strongly encouraged to get approval for the topic before you start work on it. The final paper is due *December 10.*

Possible topics for the final paper include:
  (1) Extension of a mathematical result by relaxing or altering an assumption
  (2) Replication of a simulation which also includes an extensive survey of possible variable settings or altering an assumption of the model
  (3) Criticism of a formal model as inadequate to address the topic it purports to address
  (4) Development of a novel formal model to address a problem in social epistemology
  (5) Argumentative paper addressing one of the issues discussed in class

If you have a paper topic that doesn't fit in one of these categories, run it by me.

Week	Readings
1: Introduction	• Goldman's "Systems-Oriented Social epistemology"
2: Testimony	• Goldman *Knowledge in a Social World,* Chapter 4 • Kitcher *The Advancement of Science, C*hapter 8, Sections 1-13 • Bovens and Hartmann, *Bayesian Epistemology, C*hapter 5
3: Peer disagreement	• Feldman, "Reasonable religious disagreement" • Elga "Reflection and disagreement" • Kelly "Peer disagreement and higher order evidence"
4: Peer disagreement continued	• Aumann "Agreeing to disagree" • Rubinstein and Wolinsky "On the logic of agreeing to disagree type results" • Bonnano and Nehring "Agreeing to disagree: A survey"
5: Opinion Pooling	• Geanakoplos "Three Brief Proof's of Arrow's Impossibility Theorem" • List and Petit "An Impossibility Result" • List and Petit "Two Impossibility Results Compared"
6: Opinion Pooling	• Degroot "Reaching a Consensus" • Wagner "Allocation, Lehrer Models, and the Consensus of Probabilities" • Seidenfeld, Schervish, and Kadane "On the Shared Preference of Two Bayesian Decisionmakers"
7: Scientific Norms	• Merton *Sociology of Science* Chapters 11, 13, 18, and 21
8: Diversity in Science	• Feyerabend "How to be a good empiricist" • Kuhn "Objectivity, Value Judgment, and Theory Choice" • Kitcher, *The Advancement of Science,* Chapter 8, sections 13+
9: More on diversity	• Goldman and Shaked, *Liasons*, Chapter 12 • Hong and Page "Groups of diverse problem solvers outperform groups of high ability problem solvers" • Weisberg and Muldoon "Epistemic Landscapes and the Division of Cognitive Labor"
10: Reward systems in science	• Strevens "The role of the priority rule in science", "Further properties of the priority rule" • Weisberg and Muldoon "Robustness and idealization in models of cognitive labor" • Brock and Durlauf "An economic model of theory choice in science"
11: Other issues in science	• Goldman *Knowledge in a social workd* Chapter 8 • Zollman "Optimal publishing""
12: Network structure	• Zollman "Epistemic benefit of transient diversity" • Zollman "Social network structure and social influence" • Goyal "Learning in networks: a survey"
13: More on network structure	• Mayo-Wilson, Zollman, Danks • Jackson and Wolinsky "A strategic model of social and economics networks" • Huttegger and Skyrms "Emergence of information transfer by inductive learning"
14: Information cascades	• Banerjee "A simple model of herd behavior" • Hung and Plott "Information cascades"
15	Extra