# *Research frontiers in Economic Sociology and Labour Studies (ResFron ESLS)*

## Seminar

## *Peerin' into peer review with agent-based models*

### Flaminio Squazzoni (University of Brescia)

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Room A, h. 13.00-14.30
Graduate School in Social and Political Sciences
via Pace 10 - Milan

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Peer review is a cornerstone of science. Without it, there would be no science. On the one hand, it guarantees that the scientific community generates innovative, rigorous and solid knowledge. On the other hand, it is fundamental to help science to self-regulate through a decentralized, distributed and collective trial and error process. Whether directly or indirectly, this complex, self-regulated institution determines how all the resources of the science system—including funding, positions, and reputation—are allocated.

Recent failures of peer review due to judgment biases and parochialism as well as cases of misconduct have contributed to calls for a reconsideration of the rigour and quality of the process. Furthermore, increasing competition between scientists at all levels, the explosion of scholarly publications and application of peer review to a variety of complex knowledge output (e.g., grant proposals, research assessment, careers) have raised serious concern about the long-term sustainability of a process that is largely based upon voluntary contribution and unprofessional.

In this talk I shall present some simulation models built to understand large-scale implications of scientist behaviour on the quality and efficiency of peer review. In our models, we have simulated a population of scientists competing for publication in a "publish-or perish" context and asked to submit and review articles facing different trade-offs. We looked at peer review as a cooperation dilemma in which scientists' self interest is at odds with collective achievements.