

## Workshop on research evaluation and commercialization potential

**Adam Jaffe**

Brandeis University and Sloan School of Management at M.I.T.

**Thursday, 3 March 2022**

**12:00-13:30**

<https://youtu.be/Js1vn8h6huw>

**CSIC - Sala de Prensa**

c/ Serrano 113

28006 Madrid

12:00-12:05	Introduction by Catalina Martínez, CSIC-IPP
12:00-12:45	Seminar by Adam Jaffe, Brandeis University & MIT Sloan School of Management on “The Matthew Effect and Intrinsic Quality in Patent Citation Networks”
12:45-13:30	Debate with Jesús Marco de Lucas, CSIC Vicepresident for Scientific and Technical Research, Adam Jaffe and Catalina Martínez and Q&A from the audience, moderated by Luis Sanz-Menéndez, CSIC-IPP

**On-site attendance:** Due to limited space and covid19 protocol restrictions, attendance *on-site* is subject to registration, by sending an email to [seminars@mima-cm.eu](mailto:seminars@mima-cm.eu).



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# The Matthew Effect and Intrinsic Quality in Patent Citation Networks

Many aspects of scientific performance exhibit what Robert Merton dubbed the 'Matthew Effect', i.e. initial success seems to breed subsequent success. In patent citations, this is manifest by what in network theory is called 'preferential attachment': the probability of receiving a citation at any moment is an increasing function of cumulative citations received previously. If the existence of previous citations itself generates subsequent citations, then this empirical regularity represents a true dynamic feedback. An alternative explanation is that inventions differ in their unobserved intrinsic quality; better patents are cited more early on and also later in their lives, but there need be no causal influence of the early citations on later success. We build an empirical model to test the effects of preferential attachment, intrinsic quality and technological obsolescence in patent citations. We find that all three contribute to observed empirical citation time paths.

Keywords: novelty, breakthrough research, bibliometrics, evaluation, impact.

## Prof. Adam Jaffe



Photo credit: Stephen A'Court

## Biography

Adam B. Jaffe is Research Professor at Brandeis University and Senior Lecturer at the Sloan School of Management at M.I.T. From 2013-17 he was Director and Senior Fellow of Motu Economic and Policy Research in Wellington New Zealand. He came to Motu from Brandeis University, where he was the Fred C. Hecht Professor in Economics, Chair of Economics and Dean of the Faculty of Arts and Sciences. Jaffe's research focuses on the economics of research and innovation, particularly the relationship between public research and commercial innovation, the measurement of the impacts of research, and the role of the patent system. He is an Editor of Research Policy and the Chair of the U.S. National Academies Board on Science, Technology and Economic Policy. Jaffe is the author of over 100 scholarly articles and two books—Patents, Citations and Innovations: A Window on the Knowledge Economy (with Manuel Trajtenberg, 2002); and Innovation and Its Discontents: How Our Broken Patent System is Endangering Innovation and Progress and What to Do About It (with Josh Lerner, 2004). Jaffe is Principal Investigator for the Sloan-Foundation-funded Innovation Information Initiative (<https://iii.pubpub.org/>), which is building a network of researchers to foster standardized sharing through open access of innovation metrics based on patent data.