Game Theory and Nobel Prizes in Economics Sciences

Jérôme MATHIS
(Toulouse School of Economics and University of Paris VIII)

Lecture at the Institut für Banking & Finance
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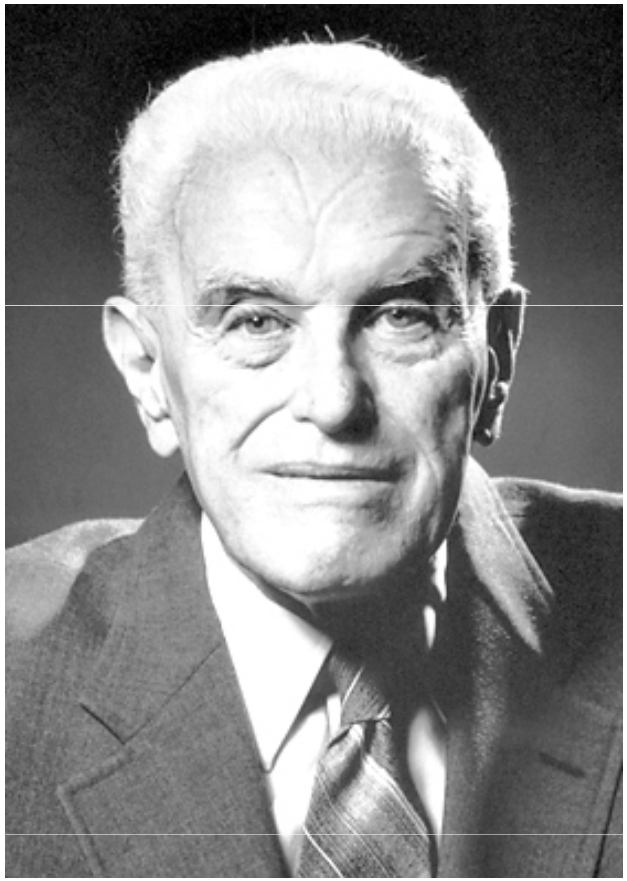
1. JOHN HARSANYI (NOBEL 1994)



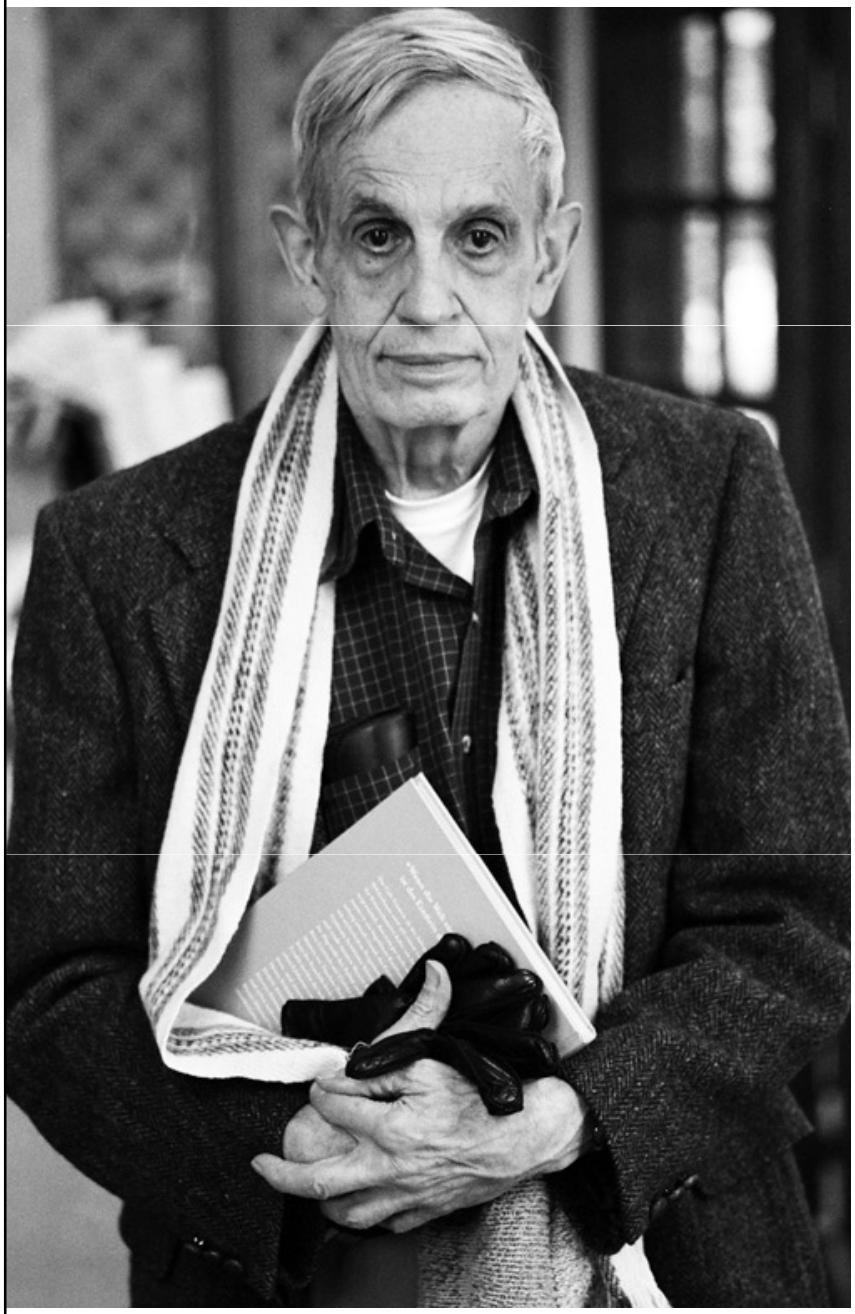
Born: 29 May 1920, Budapest, Hungary
Died: 9 August 2000, Berkeley, CA, USA
Affiliation at the time of the award: University of California, Berkeley, CA, USA

Prize motivation: "for their pioneering analysis of equilibria in the theory of non-cooperative games“

Field: Game theory

Contribution: Showed how games of incomplete information can be analyzed, thereby providing a theoretical foundation for a lively field of research - the economics of information - which focuses on strategic situations where different agents do not know each others' objectives.

2. JOHN F. NASH (NOBEL 1994)



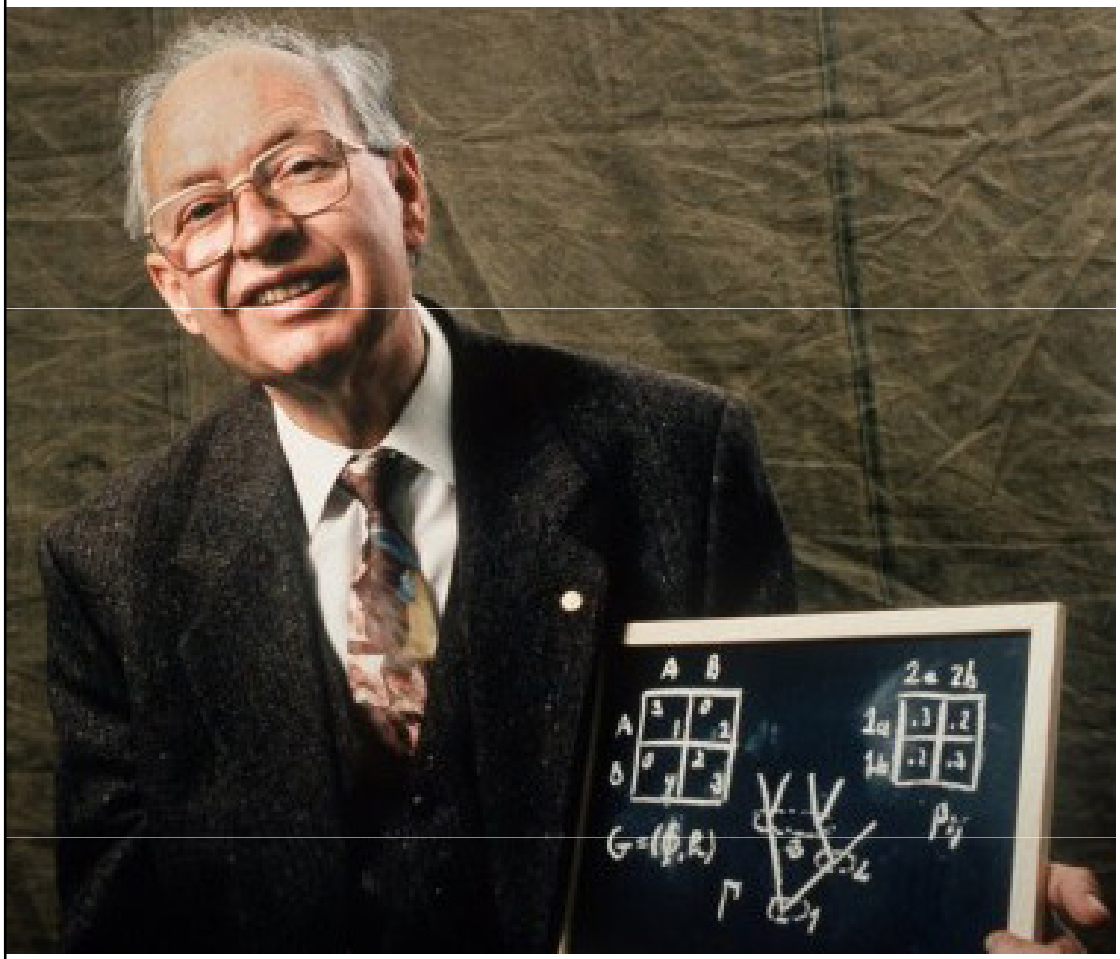
Born: 13 June 1928, Bluefield, WV, USA
Affiliation at the time of the award: Princeton University, Princeton, NJ, USA

Prize motivation: "for their pioneering analysis of equilibria in the theory of non-cooperative games“

Field: Game theory

Contribution: Introduced the distinction between cooperative games, in which binding agreements can be made, and non-cooperative games, where binding agreements are not feasible. Developed an equilibrium concept for non-cooperative games that now is called Nash equilibrium.

3. REINHARD SELTEN (NOBEL 1994)



Born: 5 October 1930, Breslau (now Wroclaw), Germany (now Poland)

Affiliation at the time of the award: Rheinische Friedrich-Wilhelms-Universität, Bonn, Federal Republic of Germany

Prize motivation: "for their pioneering analysis of equilibria in the theory of non-cooperative games“

Field: Game theory

Contribution: Refined the Nash equilibrium concept for analyzing dynamic strategic interaction by getting rid of unlikely equilibria. He also applied the refined concept to analyses of oligopolistic competition.

4. GEORGE A. AKERLOF (NOBEL 2001)

Born: 17 June 1940, New Haven, CT, USA

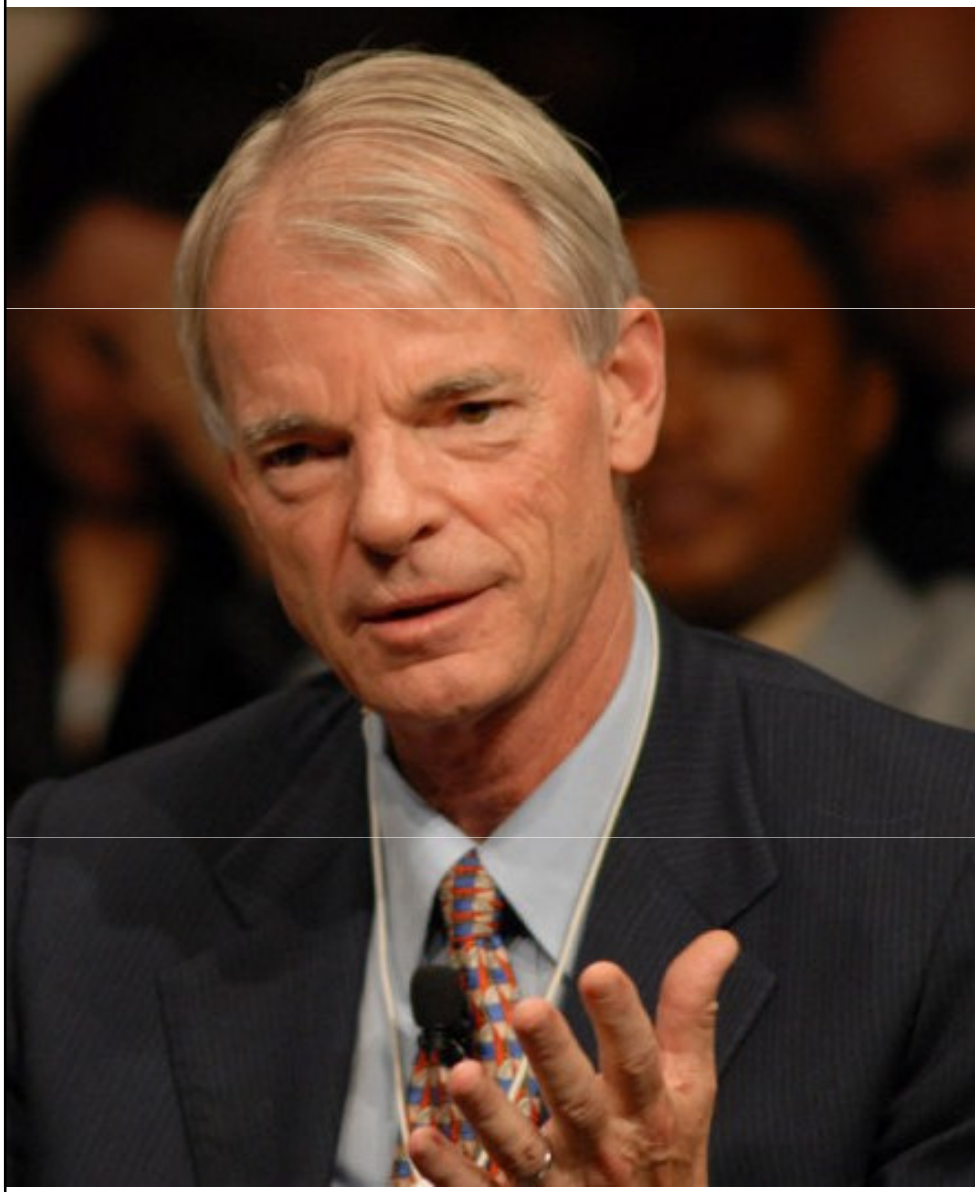
Affiliation at the time of the award: University of California, Berkeley, CA, USA

Prize motivation: "for their analyses of markets with asymmetric information“

Field: Economics of information

Contribution: Studied markets where sellers of products have more information than buyers about product quality. He showed that low-quality products may squeeze out high-quality products in such markets, and that prices of high-quality products may suffer as a result.

5. MICHAEL SPENCE (NOBEL 2001)



Born: 1943, Montclair, NJ, USA

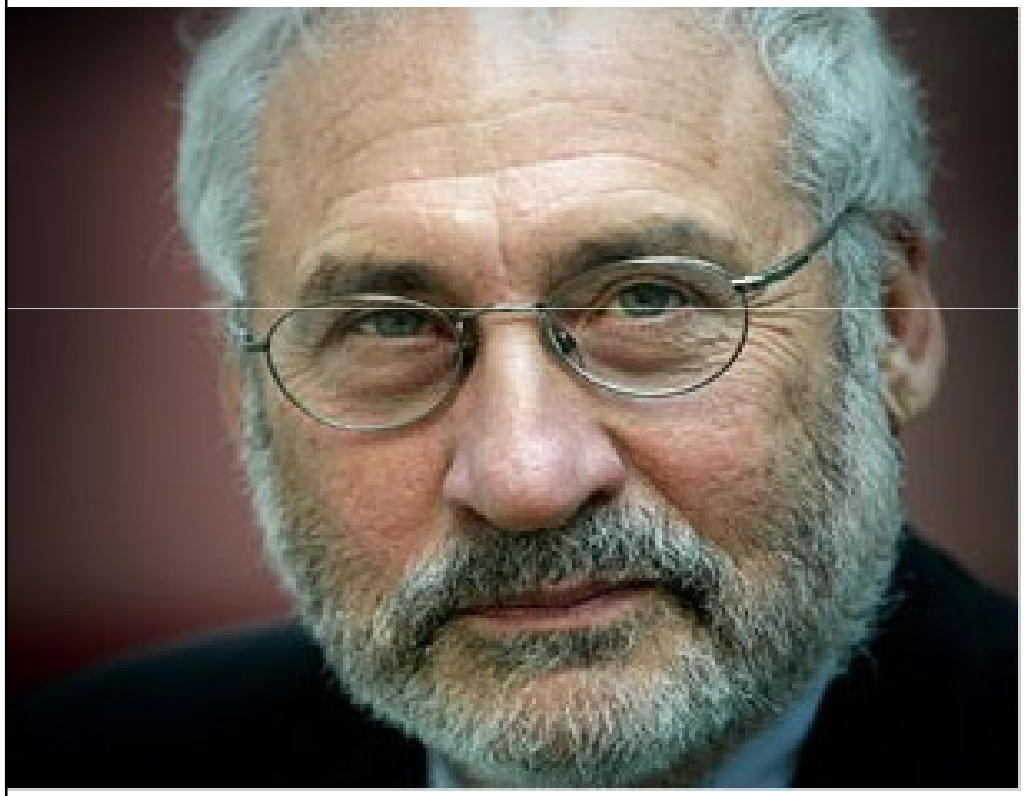
Affiliation at the time of the award: Stanford University, Stanford, CA, USA

Prize motivation: "for their analyses of markets with asymmetric information“

Field: Economics of information

Contribution: Showed how the able agents may improve the market outcome by taking costly action to signal information to poorly informed recipients. An important example is education as a signal of high individual productivity in the labor market. It is not necessary for education to have intrinsic value. Costly investment in education as such signals high ability.

6. JOSEPH E. STIGLITZ (NOBEL 2001)



Born: 9 February 1943, Gary, IN, USA

Affiliation at the time of the award: Columbia University, New York, NY, USA

Prize motivation: "for their analyses of markets with asymmetric information“

Field: Economics of information

Contribution: Showed that asymmetric information can provide the key to understanding many observed market phenomena, including unemployment and credit rationing.

7. ROBERT J. AUMANN (NOBEL 2005)

Born: 8 June 1930, Frankfurt-on-the-Main, Germany

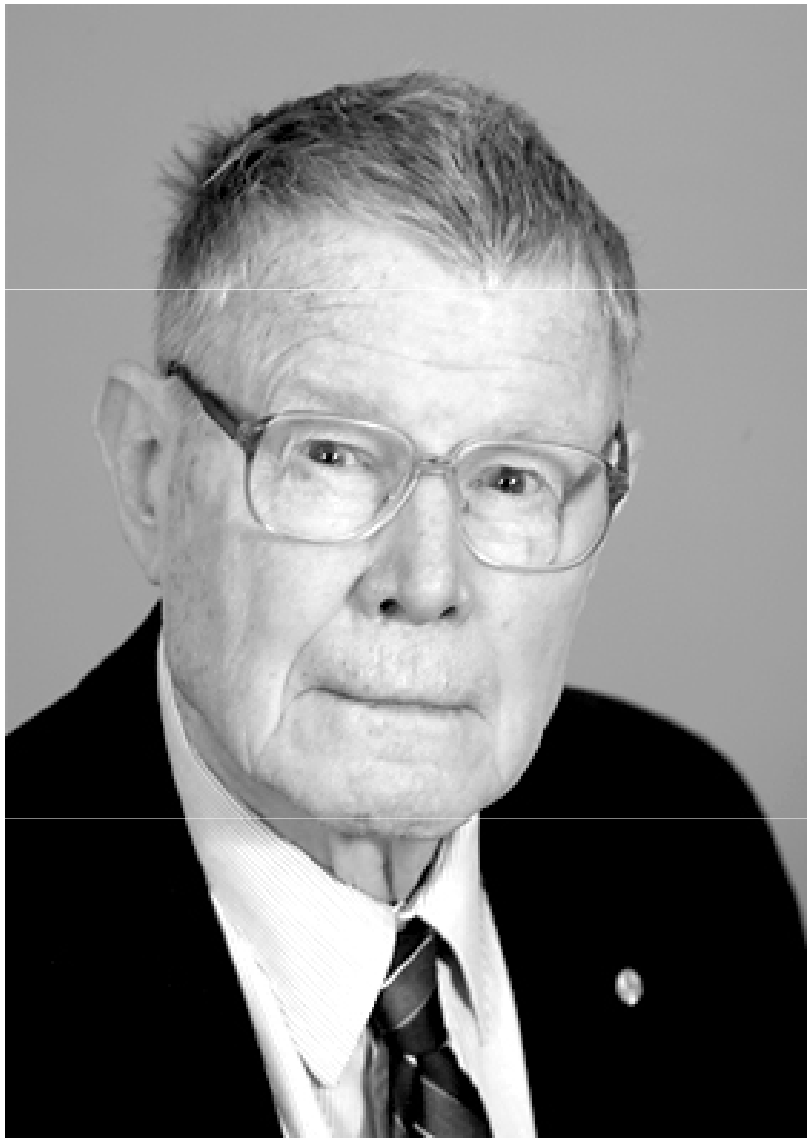
Affiliation at the time of the award: University of Jerusalem, Center for RationalityHebrew, Jerusalem, Israel

Prize motivation: "for having enhanced our understanding of conflict and cooperation through game-theory analysis“

Field: Game theory

Contribution: The first to conduct a full-fledged formal analysis of so-called infinitely repeated games. His research identified exactly what outcomes can be upheld over time in long-run relations (the Folk Theorem).

8. THOMAS C. SCHELLING (NOBEL 2005)



Born: 14 April 1921, Oakland, CA, USA

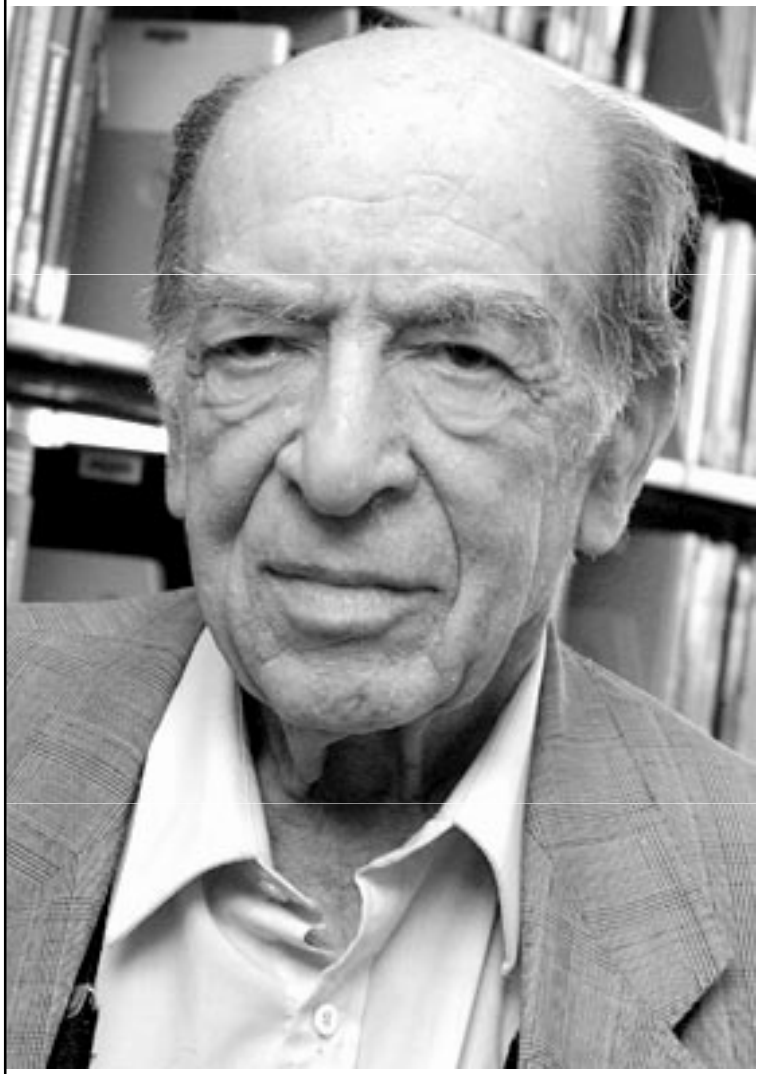
Affiliation at the time of the award: University of Maryland, USA

Prize motivation: "for having enhanced our understanding of conflict and cooperation through game-theory analysis“

Field: Game theory

Contribution: A creative application of game theory to important social, political and economic problems. Showed that a party can strengthen its position by overtly worsening its own options, that the capability to retaliate can be more useful than the ability to resist an attack, and that uncertain retaliation is more credible and more efficient than certain retaliation. These insights have proven to be of great relevance for conflict resolution and efforts to avoid war.

9. LEONID HURWICZ (NOBEL 2008)



Born: 21 August 1917, Moscow, Russia

Died: 24 June 2008, Minneapolis, MN, USA

Affiliation at the time of the award: University of Minnesota, Minneapolis, MN, USA

Prize motivation: "for having laid the foundations of mechanism design theory“

Field: Microeconomics

Contribution: The pioneer in the field of mechanism design. Formulated a general mathematical framework for analyzing institutions implementing collective decision making.

10. Eric S. MASKIN (Nobel 2008)

Born: 12 December 1950, New York, NY, USA

Affiliation at the time of the award: Institute for Advanced Study, Princeton, NJ, USA

Prize motivation: "for having laid the foundations of mechanism design theory“

Field: Microeconomics

Contribution: Developed implementation theory, a theory for achieving particular social or economic goals. An important problem is that a mechanism typically admits multiple equilibria. Even if the best outcome is possible to achieve other inferior solutions may exist. Maskin was first to develop conditions under which all equilibria are optimal.

11. Roger B. MYERSON (Nobel 2008)

Born: 29 March 1951, Boston, MA, USA

Affiliation at the time of the award: University of Chicago, Chicago, IL, USA

Prize motivation: "for having laid the foundations of mechanism design theory“

Field: Microeconomics

Contribution: In the 1970s, the formulation of the “revelation principle” (a way of simplifying the search for a feasible mechanism) and implementation theory led to great advances of mechanism design. He developed this principle to perfection and pioneered its application to economic problems such as auctions and regulations.