THE GOLDEN GOOSE AWARD

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ECONOMISTS BEHIND THE FCC'S SPECTRUM AUCTIONS TO RECEIVE GOLDEN GOOSE AWARD

3rd Annual Golden Goose Award Ceremony to be held Sept. 18 at the Library of Congress; Science Correspondent Miles O'Brien to be Master of Ceremonies

Robert Wilson, Paul Milgrom and R. Preston McAfee, whose basic research on game theory and auctions enabled the Federal Communications Commission (FCC) to first auction spectrum licenses in 1994, were announced today as recipients of the 2014 Golden Goose Award.

They will receive their awards on September 18 at the third annual Golden Goose Awards ceremony in Washington, DC, along with other 2014 awardees. The ceremony will be held at the Library of Congress, with science correspondent Miles O'Brien serving as Master of Ceremonies.

The Golden Goose Award honors researchers whose federally funded research may not have seemed to have significant practical applications at the time it was conducted but has resulted in major economic or other benefits to society.

Including that first FCC auction in 1994, the agency has conducted 87 auctions, raising over $60 billion for the U.S. Treasury and enabling the proliferation of wireless technologies that make life convenient, safe and connected. Additionally, the basic auction process they developed has been used the world over not only for other nations' spectrum auctions but also for items as diverse as gas stations, airport slots, telephone numbers, fishing quotas, emissions permits, and electricity and natural gas contracts.

"Without access to spectrum, America would be trapped in a wireless purgatory," said Rep. Jim Cooper (D-TN), whose idea for a Golden Goose Award inspired its creation by several organizations in 2012. "This trio used game theory to incentivize a critical tool that helps Americans communicate, connect and educate."

"Every year, the Golden Goose Award highlights the real social and economic benefits of federally supported basic research," said Rep. Charlie Dent (R-PA), another congressional supporter of the award. "The theoretical work done by Professors Wilson, Milgrom, and McAfee has revolutionized federal auctions and returned the federal government's investment many times over. As a member of the House Appropriations Committee, I am especially aware of the importance of investing in the sciences and leaving the decisions on research priorities to the scientists to the greatest extent possible – not politicians."

The awardees came together in a rather circuitous way reflecting the evolution of game theory from entirely theoretical, curiosity-inspired research on how people and organizations make

decisions to a process for conducting efficient, fair, and enormously complex real-world auctions.

Robert Wilson was a Stanford University economics professor interested in game theory, including how it applied to formulating auctions for maximum results. His early work was supported by the U.S. Atomic Energy Commission, which was interested in game theory, not auctions, and the Office of Naval Research, which wanted to improve the bidding process for contractors vying to build ships. Eventually, in the 1980s and 1990s, the National Science Foundation (NSF) supported his game theory research on auctions and other economic transactions.

Paul Milgrom, who was pursuing his Ph.D. in economics from Stanford in the 1970s had Wilson as his faculty advisor. Following a successful dissertation on auction theory he moved on to Northwestern University. It was there, supported by the NSF, that he addressed the unique, but still highly speculative and theoretical issues arising from simultaneous auctions of multiple items. In 1982 he authored a paper on single-item auctions that is still considered the state of the art.

Preston McAfee was a University of Texas economics professor also deeply interested in auctions in the 1980s. He was a strong advocate that economic theory should be applied to solving practical problems.

Fast forward to 1993, when Congress granted the FCC authority to auction portions of the electromagnetic spectrum. This was uncharted territory and an extraordinarily complex undertaking. The FCC's notice of proposed rulemaking contained a framework for the auction, which cited Milgrom's work as its basis. Contacted for advice by a company that was interested in participating in the auction, Milgrom thought he could come up with a better design than that proposed by the FCC and reached out to his former thesis advisor. Wilson and Milgrom developed an auction process called a simultaneous multiple round (SMR) auction, also known as a simultaneous ascending-bid auction. Separately, McAfee was consulting with a different telecommunications company and came up with a similar idea.

The FCC asked the three economists to work together, and they designed the first auction. Wilson and Milgrom contributed the fundamental idea that all of the individual auctions should conclude simultaneously. McAfee's work was especially important for dealing with other practical issues, such as how to address defaults by bidders and how to ensure participation by women- and minority-owned businesses.

McAfee is currently the chief economist at Microsoft; Milgrom is the Shirley and Leonard Ely Professor of Humanities and Sciences at Stanford University; and Wilson is the Adams Distinguished Professor of Management, Emeritus at Stanford University.

Rep. Cooper first proposed the Golden Goose Award when the late Senator William Proxmire (D-WI) was issuing the Golden Fleece Award to target wasteful federal spending and often targeted peer-reviewed science because it sounded odd. Rep. Cooper believed such an award was needed to counter the false impression that odd-sounding research was not useful.

In 2012, a coalition of business, university, and scientific organizations created the Golden Goose Award. Like the bipartisan group of Members of Congress who support the Golden Goose Award, the founding organizations believe that federally funded basic scientific research

is the cornerstone of American innovation and essential to our economic growth, health, global competitiveness, and national security. Award recipients are selected by a panel of respected scientists and university research leaders.

Additional information about the Golden Goose Award, including previous winners and sponsors, can be found at www.goldengooseaward.org and on Twitter at @GoldGooseAward.

Golden Goose Award Founding Organizations:

American Association for the Advancement of Science (AAAS)
Association of American Universities (AAU)
Association of Public and Land-grant Universities (APLU)
Breakthrough Institute
Progressive Policy Institute (PPI)
Richard Lounsbery Foundation
The Science Coalition (TSC)
Task Force on American Innovation
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