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Obama's "Dream Team"

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In the end, is it worth all the effort? As long as the community as a whole can bring thoughtful analysis and interpretation, as well as a healthy dose of common sense, to bear on citations, such political considerations should be mitigated. As Winston Churchill once said: "If you have ten thousand regulations, you destroy all respect for the law."

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Country trends



Obama's "Dream Team"

New US President Barack Obama's choices for senior science advisory posts in his new government include some of the most prolific and high-impact scientists working in the US today, earning the nickname of Obama's "Dream Team".

In his weekly radio address in December 2008, Obama vowed to "put science at the top of our agenda [because] science holds the key to our survival as a planet and our security and prosperity as a nation".

Environment on the agenda

As Assistant to the President for Science and Technology and Director of the White House Office of Science and Technology Policy, John P. Holdren is Obama's top science advisor. Based at the Kennedy School of Government at Harvard University, Holdren is a physicist whose publications on sustainable energy technology and energy policy have featured frequently in Science; his seminal 1971 article (with population biologist Paul Ehrlich) entitled "Impact of population growth" (1) continues to be cited strongly (with more than 30 citations during 2007).

Holdren was recently president of the American Association for the Advancement of Science (AAAS) and then chairman of its Board of Directors. In a [statement](#) on the AAAS website, the Association's Chief Executive Officer Alan Leshner noted: "John

Holdren's expertise spans so many issues of great concern at this point in history – climate change, energy and energy technology, nuclear proliferation."

Another past president of the AAAS, Jane Lubchenco, assumes the role of National Oceanic and Atmospheric Administration (NOAA) Administrator. The first woman to head the agency, Lubchenco has an impressive list of publications in marine ecology, and co-authored a 1997 article warning of the impacts of human activity on the global ecosystem and the immediate need for action that has been cited more than 1,400 times to date (2). Like Holdren, Lubchenco has a Harvard connection, having taken her Ph.D. there in 1975 and holding a teaching post before relocating to Oregon State University in 1978.

Stocking up on Nobel laureates

President Obama's Secretary of Energy, Steven Chu, Professor of Physics and Molecular & Cellular Biology and Director of the Lawrence Berkeley National Laboratory at the University of California, Berkeley, shared the 1997 Nobel Prize in Physics for his research in cooling and trapping of atoms with laser light. The first Laureate to be appointed to the Cabinet, Chu's research interests in single-molecule biology are reflected in his list of more than 140 journal publications since 1996, with more than 7,000 citations to date.

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Rounding out President Obama's "Dream Team" are two biologists, Eric Lander and Harold Varmus, co-chairs of the President's Council of Advisers on Science and Technology (PCAST) with Holdren. PCAST is a panel of private sector and academic representatives established in 2001 to advise on issues related to technology, research priorities and science education.

Lander, founding Director of the Broad Institute of Massachusetts Institute of Technology and Harvard, was instrumental in the Human Genome Project; his more than 350 journal publications have collectively been cited more than 75,000 times since 1996.

Varmus, former director of the National Institutes of Health and President and CEO of Memorial Sloan-Kettering Cancer Center since 2000, is the second Nobel Prize winner (Physiology or Medicine, 1989) appointed to Obama's team. His prize-winning research on the cellular origin of retroviral oncogenes published in *Nature* in 1976 (3) continues to be cited (21 times in 2007).

Towards a well-informed future

President Obama has collected some of the finest scientific talent in the US to advise him, with a particular focus on environmental issues. In fact, the team has also been dubbed

the "Green Team". These five individuals were together cited more than 12,000 times in 2007 and their experience spans the breadth of the physical sciences.

Incidentally, Obama himself is a published author, with a dozen journal publications: his 2006 article (4) with erstwhile presidential rival and now Secretary of State Hillary Clinton on health-care reform has been cited 28 times to date.

President Obama outlined the key role that science policy will play in the US's economic recovery in his inauguration speech in January: "The state of the economy calls for action, bold and swift, and we will act [...] We will restore science to its rightful place".

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Expert opinion



Inspired by bibliometrics

Brian Fath



Brian Fath is an Associate Professor in the Department of Biological Sciences at Towson University, USA, and Editor-in-Chief for the journal, *Ecological Modelling*. Like all journal editors, he wants his journal to continue improving. However, unlike many editors, he has a passion for network analysis, giving him a unique insight into the way ranking metrics are calculated and an enhanced understanding of how scholarly literature is cited within communities.

Fath uses ecological network analysis to identify relationships between non-connected elements in food webs. He says: "Network analysis is a very powerful tool to identify hidden relationships. We can now integrate the networks of different systems and identify indirect pathways, making it possible for us to see the unexpected consequences of our actions. For example, CFCs looked good in the lab, but it took 40 years to understand their effect on the planet. Through

network analysis, we can potentially gauge those effects before we cause them."

In October 2007, he was invited to give a presentation on "Assessing Journal Quality Using Bibliometrics" at the Elsevier Editors' Conference in Miami. While carrying out background research, he came across Derek de Solla Price. "His 1965 paper (1) was a revelation, and I literally just stumbled upon it," he recalls.

Eye opener

"I thought this paper was fascinating. For instance, de Solla Price identifies research fronts, marked by review papers. This is important, because he also shows that the frequency of review papers is not linked to time, but to the number of papers published in the field. Hot topics, where a lot of papers are published, prompt review papers more frequently than slower-paced areas. This changed my mind on the

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