
Elias Zerhouni, M.D., Former Director of the National Institutes of Health, Named Chief Scientific Advisor

The journal *Science*, published by the nonprofit American Association for the Advancement of Science (AAAS), today announced plans to launch a new journal devoted to research in translational medicine, which uses insights from basic biology to improve medical care. The journal, *Science Translational Medicine*, will launch in fall, 2009. (See www.sciencetranslationalmedicine.org.)

Elias Zerhouni, M.D., Senior Fellow at the Bill & Melinda Gates Foundation’s Global Health Program and former Director of the U.S. National Institutes of Health, has accepted the position of Chief Scientific Advisor for *Science Translational Medicine*.

Together with the journal’s Advisory Board of clinician scientists and other experts, and Editor Katrina L. Kelner, Dr. Zerhouni will set the strategic direction of the journal and work with staff to attract and publish research that represents both excellent science and significant advances for human health.

“We need to find novel and more effective ways to better understand and develop, for patients, the extraordinary advances we have made in the past few years. This is why translational medicine has to become a more rigorous and, in my view, a redefined new discipline of biomedical science, with a vibrant and focused community dedicated to basic and applied investigations of the highest scientific quality, and without artificial barriers between its constituent disciplines,” Dr. Zerhouni said.

“We should never forget that the public supports our research not just for its own sake but for its promise to bring new and more effective approaches to health across the world. I am pleased by the decision of AAAS to launch this journal at this time and honored to serve as its inaugural chief scientific advisor.”

What is Translational Medicine?

Often described as an effort to carry scientific knowledge “from bench to bedside,” translational medicine builds on basic research advances – studies of biological processes using cell cultures, for example, or animal models – and uses them to develop new therapies or medical procedures.

Translational medicine is becoming ever-more interdisciplinary. For example, researchers need new computational approaches to deal with the large amounts of data pouring in
from genomics and other fields, and as new advances in physics and materials science offer new approaches to study or diagnose medical conditions.

*Science Translational Medicine* is being launched to help researchers more efficiently access and apply new findings from many different fields, explained Bruce Alberts, *Science’s* Editor-in-Chief. Specifically, the journal will serve researchers and management in academia, government, and the biotechnology and pharmaceutical industries, physician scientists, regulators, policymakers, investors, business developers, and funding agencies.

“The new journal should help scientists and engineers work toward bigger-picture goals for improving patient care, by allowing them to better assimilate information that currently is coming at them from multiple sources,” Alberts said. “Too often, information with the potential to improve human quality-of-life is available only through silo-like channels. For example, cardiologists who only attend specialized meetings and read the basic cardiology literature, but not the physics or computer science literature, might miss an important breakthrough that could advance their own research. *Science Translational Medicine* will help keep researchers informed about advances across all disciplines.”

*Science Translational Medicine* will encourage the flow of information from the lab to the clinic – but also from the clinic back to the lab. We believe that continuous feedback and communication among the diverse players in this system are essential for success,” said Editor Katrina Kelner.

**Specific Examples of Translational Research**

- Harry Dietz and his colleagues at Johns Hopkins University found that losartan, a drug already approved in the United States for use against high blood pressure, can prevent the aortic aneurisms found in mice engineered to have Marfan syndrome, a genetic disease that affects the body’s connective tissue. Losartan has now been tested as a therapy in a group of children with this syndrome and found to inhibit the development of these potentially deadly abnormalities in the aorta.

- Using sophisticated image processing algorithms, Anant Madabhushi and colleagues at Rutgers University can analyze the texture in high-resolution MRI medical images to detect and locate early stage prostate tumors. This application of computational tools to medical imaging yields a more sensitive and reliable technique for clinical application than existing approaches.

- After several decades of unsuccessful efforts to find a vaccine for meningitis B using conventional methods, a research team led by Rino Rappuoli of IRIS, Chiron S.p.A. in Siena, Italy identified a vaccine candidate using a translational approach called reverse vaccinology, which involved analyzing the meningococcal genome sequence. Novartis is now testing this candidate in clinical trials.
To delay the onset of blindness, many patients with glaucoma must administer eye drops multiple times during the day, a demanding routine that can prevent effective control of the disease. Erin Lavik at Yale University has developed microspheres containing the glaucoma drug timolol maleate, which can be injected into one spot in the eye, where the microspheres secrete controlled amounts of timolol for over a month. This improvement in the way that glaucoma patients receive their medication could lead to more consistent levels of the drug and better outcomes for the patient.

Gold nanoparticles or "nanoshells" developed by James Tunnel's group at the University of Texas in Austin can be localized to cancer cells, allowing detection by fluorescence spectroscopy even when the tumors are quite small. These same particles can then be activated with strong light to potentially destroy the tumor. This approach combines optical imaging, spectroscopy and nanotechnology for early cancer diagnosis.

Inside the Journal

*Science Translational Medicine* will publish original, peer-reviewed, science-based research, including small clinical trials and other studies of human biology, as well research on animal models of human disease. “Perspective” articles and Reviews will discuss new findings from both a basic science and a clinical point of view. The journal also will feature and synthesize informed commentary on policy, funding, regulatory issues, and more.

The scope of content in *Science Translational Medicine* will encompass advances related to cancer; cardiovascular disease; metabolism, diabetes and obesity; neuroscience, neurology, and psychiatry; immunology and vaccines; infectious diseases; policy; behavior; bioengineering; physics; chemical genomics and drug discovery; imaging; applied physical sciences; medical nanotechnology; drug delivery; biomarkers; gene therapy and regenerative medicine; toxicology and pharmacokinetics; data mining; cell culture; animal and human studies; medical informatics; other interdisciplinary approaches to medicine.

*Science Translational Medicine* will be published weekly online, every Wednesday, and a compilation of selected articles will be offered in a print edition, published monthly.

“*Science Translational Medicine* will join Science’s other sister journal, *Science Signaling*, in providing a unique forum for researchers from many different disciplines to connect and collaborate in new ways that benefit human health,” said Alan I. Leshner, Chief Executive Officer of AAAS and Executive Publisher of the journal *Science*.
**Science Translational Medicine's Leadership**

In addition to Chief Scientific Advisor Elias Zerhouni and *Science* Editor-in-Chief Bruce Alberts, *Science Translational Medicine*'s leadership includes Editor Katrina Kelner and *Science* Executive Editor Monica Bradford.

**Science Translational Medicine’s Advisory Board**

Kenneth R. Chien, M.D., Ph.D.  
Director, Cardiovascular Research Center, Massachusetts General Hospital  
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Director, National Heart, Lung, and Blood Institute, National Institutes of Health

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The editors are now accepting research submissions for review and possible publication in *Science Translational Medicine*. The call for papers and submission guidelines are at [http://sciencemag.org/marketing/stm/papers.dt1](http://sciencemag.org/marketing/stm/papers.dt1).

Institutional sitewide access is available. Trials will begin in the fourth quarter of 2009.

The American Association for the Advancement of Science (AAAS) is the world's largest general scientific society, and publisher of the journal *Science* ([www.sciencemag.org](http://www.sciencemag.org)). AAAS was founded in 1848, and serves some 262 affiliated societies and academies of science, serving 10 million individuals. *Science* has the largest paid circulation of any peer-reviewed general science journal in the world, with an estimated total readership of one million. The nonprofit AAAS ([www.aaas.org](http://www.aaas.org)) is open to all and fulfills its mission to "advance science and serve society" through initiatives in science policy; international programs; science education; and more.