AIBS news

Source: BioScience, 60(10) : 858-860

Published By: American Institute of Biological Sciences

URL: https://doi.org/10.1525/bio.2010.60.10.17

AIBS*news*

NOVEMBER 2010 / VOLUME 60 NUMBER 10

Biology Groups Partner to Advance Science Education Policy

AIBS and the National Association of Biology Teachers (NABT) are pleased to announce a new strategic partnership that will help advance the science and education policy interests of the biological sciences community. Through the arrangement, NABT members will be able to access and use a suite of AIBS public policy services and resources.

"AIBS and NABT have a long history of working together to help teachers bring the excitement of modern biology to students and make sure that their education keeps pace with the rapid growth of biological knowledge," said AIBS President Joseph Travis. "We are excited to expand this partnership; AIBS will now help NABT members stay informed about developments in science and education policy in Washington. Our biology teachers are vital for our nation; they lay the groundwork for students who pursue 21st century careers in medicine, science, and biotechnology and help all students understand the living world."

The partnership will help AIBS and NABT leverage resources to ensure that decisionmakers understand the needs and challenges facing biology teachers. Through the arrangement, NABT members will be able to use the AIBS Legislative Action Center and participate in the Biological Sciences Congressional District Visits event and AIBS Webinars and workshops that help scientists and educators effectively communicate with decisionmakers and reporters. Additionally, AIBS will provide NABT with timely news reports on science education policy developments.

"Since 1938, NABT has been advocating for biology teachers," said NABT President Marion Jaskot. "Today, more than ever, biology and science education are on the front lines of reform. Our partnership with AIBS furnishes an extensive membership service replete with credible information, resources, and a more expansive voice for biology and the life sciences, most especially in a greater formal interaction with policy makers. It makes sense to utilize our partnership with AIBS to provide an additional toolkit of available and accessible opportunities."

Peer Review Furthers Interdisciplinary Innovation in Army Regenerative Medicine

When biological tissues such as skin, muscle, and bone are lost or damaged by trauma, age, disease, or defect, regenerative medicine works to create new, functioning tissue to repair or replace the damaged part.

To harness and fuel rapid-fire breakthroughs in the field, the Armed Forces Institute of Regenerative Medicine (AFIRM) brought together more than 100 investigators to work on emerging innovations in areas pertinent to both war-fighter and civilian populations. "This type of technology is changing the future of medicine in our world," said Colonel Robert Vandre, AFIRM's immediate past program director.

Two years ago, AFIRM requested that AIBS Scientific Peer Advisory and Review Services (SPARS) manage the independent peer review of 21 proposals submitted by the consortia. SPARS assembled a panel of experts to evaluate the widely interdisciplinary proposal topics. Much of the research focused on one of the most difficult and deadly problems the medical community faces today: burn repair. Because deep burns (deeper than 4 centimeters) account for 10 percent of all casualties suffered by war fighters and afflict 20,000 US civilians every year, many research projects submitted to AFIRM were attempts to restore or mimic the complexity of living, functional skin.

For example, engineered substitute skin, or ESS, can be cultured from a small sample of a patient's healthy skin and grown into sheets that are patient compatible. However, although ESS can act as a barrier, it cannot quickly grow the vascular networks necessary to reconnect the new skin to the healthy veins and capillaries that carry nutrients, fluid, and gases into the engineered tissue.

Recently, however, SPARS-managed peer review evaluated novel research, performed at Steven Boyce's laboratory at the University of Cincinnati, that adds dermal microvascular endothelial cells (the precursors of veins) to ESS dressings. Promising results in 2009 indicated that endothelial cells began to self-organize into multicellular structures and joined with the engineered skin.

In addition to the creation of living tissue, AFIRM supports device design. In battle and civilian emergencies, it is critical to close and protect extensive burn wounds. At Wake Forest University, a coleader of one of AFIRM's two consortia, James Yoo, has developed a portable bioprinting device: A computer-controlled XYZ plotter and cell-deposition system similar to a dot-matrix printer that deploys a layer of fibroblasts, followed by a layer of keratinocytes, directly onto burn wounds. In studies last year, the printer-delivered cells self-organized into skin layers, stabilized the wound, and produced faster healing than controls.

doi:10.1525/bio.2010.60.10.17

Nerve repair is often forgotten in the urgency to rebuild war-injured tissue, but the loss of sensation and control means poor function, serial reinjury, and a grim quality-of-life prognosis. Several nerve-regeneration studies are being pursued through AFIRM, including work by the Anderson laboratory at Massachusetts Institute of Technology.

These are just a few examples of regenerative medicine in action—medicine that brings together surgery, biochemistry, bioengineering, and biomechanics in an interdisciplinary system that mimics the complexity of the biological systems it seeks to recreate. Initially addressing the needs of soldiers, but designed to be directly and swiftly translatable to all populations, regenerative medicine is changing the future of medicine in our world.

Recent Articles Online at *www.actionbioscience.org*

Original article in English

- **Life in the Deep Sea.** In this interview, Stephen Haddock, of the Monterey Bay Aquarium Research Institute and the University of California, Santa Cruz, talks about the wealth of plants and animals, many of which are yet to be discovered, constantly changing and adapting to the extreme conditions of the deep sea. Read the interview at *www.actionbioscience.org/biodiversity/haddock.html.*

Recent Public Policy Reports Online at *www.aibs.org/public-policy-reports*

Public Policy Report for 30 August 2010

- **NABT partners with AIBS Public Policy Office.** AIBS and the National Association of Biology Teachers (NABT) are pleased to announce a new strategic partnership that will help advance the science and education policy interests of the biological sciences community. Through the arrangement, NABT members will be able to access and utilize a suite of AIBS public policy services and resources.

- **Judge halts federal funding for stem cell research.** A federal judge ruled on 23 August that the federal government must immediately stop funding research that involves human embryonic stem cells (hESC). US District Judge Royce C. Lamberth found that the Obama administration's policy on hESC research violates a federal law that bars the government from funding research that destroys human embryos.

- **National Science Foundation announces new grant program for digitization of biological collections.** The National Science Foundation (NSF) has announced a new grant program, "Advancing Digitization of Biological Collections," for scientific collections. According to NSF documents, the program seeks to "create a national resource of digital data documenting existing biological collections and to advance scientific knowledge by improving access to digitized information (including images) residing in vouchered scientific collections across the United States.

- **Midterm elections approaching: Don't forget to vote.** This November, voters will head to the polls to elect all members of the US House of Representatives, 37 Senate seats, and various state government offices. To find out more about elections in your district, visit the AIBS Legislative Action Center at *http://capwiz.com/aibs/election/home.* If you have recently moved, you will need to reregister to vote. Visit the US Election Assistance Commission at *www.eac.gov* to obtain a voter registration form.

Public Policy Report for 16 August 2010

- **National Science Foundation leadership changes.** On 5 August,

How to Contact Us

BioScience

Advertising, print and online: *adsales@ucpressjournals.com*

Classified advertising: *jwilliams@aibs.org* 202-628-1500

Online: *www.aibs.org/bioscienceonline*

Permissions: *www.ucpressjournals.com/reprintinfo.asp*

Publisher: *rogrady@aibs.org* 202-628-1500

Submission inquiries: *tbeardsley@aibs.org* 202-628-1500

Subscriptions: Individual *admin@aibs.org* 703-790-1745

Subscriptions: Institutional *customerservice@ucpressjournals.com* 510-643-7154

AIBS

ActionBioscience.org: *editor@actionbioscience.org*

Education Office: *smusante@aibs.org* 202-628-1500

Executive Director: *rogrady@aibs.org* 202-628-1500

Meetings and Conference Services: *sburk@aibs.org* 703-790-1745

Membership Records: *admin@aibs.org* 703-790-1745

Membership and Community Programs: *spotter@aibs.org* 202-628-1500

Public Policy Office: *rgropp@aibs.org* 202-628-1500

Scientific Peer-Review Services: *sglisson@aibs.org* 703-674-2500

Web/IT Services: *jwagener@aibs.org* 703-674-2500

the White House announced the nomination of Cora Marrett to be the next deputy director of the National Science Foundation (NSF). Marrett, a sociologist by training, is currently serving as acting director of NSF. From January 2009 until June 2010 she held the post of acting deputy director, the number two spot in the science agency. Before that, Marrett was the assistant director for Education and Human Resources, where she led the agency's work in science, technology, engineering, and mathematics education.

- **Climate cap-and-trade is off the table in the Senate, for now.** Senate Majority Leader Harry Reid (D–NV) has announced that the Senate will not pursue comprehensive climate legislation this fall. Instead, the Senate may take up a narrower bill (S. 3663) that would address offshore drilling regulations, remove the limits on liability for damages from oil spills, invest in oil spill response research and development, promote the use of plug-in vehicles, and create a residential energy efficiency program. The bill would not include a national renewable energy standard for utilities, as some Senators had hoped.

- **New report assesses nation's botanical capacity.** The Botanical Capacity Assessment Project released the report, "Assessing Botanical Capacity to Address Grand Challenges in the United States," which includes recommendations for the government, academia, and nongovernmental organizations. It is believed to be the first assessment of the nation's botanical capacity.

- **New chief for National Climate Change and Wildlife Science Center.** Doug Beard has been selected as the new chief of the National Climate Change and Wildlife Science Center (NCCWSC). The center, a part of the US Geological Survey, is tasked with understanding the impacts of climate change on fish and wildlife and developing tools that resource managers can use to protect wildlife and their habitats. As head of the NCCWSC, Beard will also oversee the establishment and program direction of the Department of the Interior's eight regional Climate Science Centers.