

Culturing Stem Cell Awareness

The bond between the general public and stem cell research has long been tinged with misgivings. The use of embryos and the potential for human cloning make many people uneasy, while government restrictions have taught scientists to be wary of external interference. This September, however, major efforts to heal the rift got underway. A new online petition affirming support for stem cell science went live, while scientific organizations from California to Australia brought a taste of stem cell research to the public on Stem Cell Awareness Day.

On September 22, the Canadian Stem Cell Foundation launched the web-based Stem Cell Charter (www.stemcellcharter.org). An umbrella organization of stakeholders, scientists, and the public, the foundation aims to foster discussions about stem cell science and in doing so, advance the research. The charter sets forth principles by which stem cell research should be conducted, including maintaining the highest levels of safety and ethics, protecting people from harm, and being transparent about study results and conflicts of interest.

Bioethicist Bartha Knoppers crafted the text of the charter along with a team of stem cell scientists, patients, ethicists, and laypeople. Among the initial signatories are Sam Weiss, a founder of the neural stem cell field; Janet Rossant, who grew a whole mouse from a single cell; and Michael Rudnicki, who isolated a type of stem cell that gives rise to new muscle.

Rudnicki, Scientific Director of Canada's Stem Cell Network and Director of Molecular Medicine at Ottawa Hospital Research Institute, explains the role of the charter this way: "Stem cell research has been considered a controversial area and unfortunately, this has had an impact on the perception of the science. The charter communicates the fundamental principles we as researchers hold close to our hearts and makes those principles accessible to everyone."

Rudnicki sees the document as a way to unite stem cell interests. "We are certainly not as organized or have the single voice that other communities that are in opposition might have. This is a way of

bringing people together," he says. By demonstrating that many people are in favor of regenerative medicine, he says, it will promote the responsible, ethical progression of the field, keep it credible, and ensure that the area continues to merit public investment.

Visitors to the charter website are greeted by an introductory video. Featuring eleven scientific luminaries, these so-called Rock Star Scientists state the potential of stem cell research in plain yet moving terms. "Right now, we are on the brink of incredible things. Breathtaking things. Remarkable, stranger, and more-beautiful-than-fiction things," they say. The scientists go on to remind viewers of the bottom line: "It's about people. People we love. People you love. People who could get better." Filmed against a stark white background, with big-budget production values, the video gives a human face to the men and women making these advances possible.

Those who sign the charter are asked to personalize their own cell, which goes on to join a swirling universe of other cells labeled with supporters' names or facts about stem cell research. The charter has proven extremely popular so far—within a week of its launch, more than 1,100 people had signed, and many went on to "cell a friend." The sleek-yet-playful site also includes videos featuring interviews with individual scientists as well as information and resources about stem cell science.

The next day, September 23, the California Institute of Regenerative Medicine

(CIRM) and allies celebrated Stem Cell Awareness Day. First marked in 2008, the event has been spearheaded by CIRM as part of the institute's educational mission. "We want to empower the folks who are committed to stem cell research at any level, whether they are grantees or patient advocates, to have a day where they feel they are making a contribution to broader understanding and outreach for the potential of stem cells," says Don Gibbons, CIRM's chief communications officer. "It's to motivate people already committed to this, to give them a chance to increase the number of people aware of the potential of this work."

Last year's inaugural event consisted of a webcast connecting the public to scientists in half a dozen universities around California and Monash University in Melbourne. This year, the number of affiliated events mushroomed. In addition to the web chat, CIRM grantees made presentations to students at 50 high schools throughout California in talks that reached nearly 4,900 students. One presenter, principal scientist Kevin D'Amour of Novocell in San Diego, gave four consecutive presentations at Steele Canyon High School in the town of Spring Valley to a total of 800 students. Basing their talks on lesson plans calibrated by Gibbons and a University of California, Berkeley team for students at various grade levels, the scientists personalized the content to include details of their own research.

Among the scientist presenters was Jan Nolta, the stem cell program director for the University of California, Davis. Nolta began her morning in an auditorium at Arthur A. Benjamin Health Professions High School in Sacramento before the student body, many of whom were clad in hospital scrubs, the school's official uniform. A participant in last year's webcast, Nolta finds talking about her research with nonscientists both helpful and rewarding. "Any time someone asks questions, it really makes you think and refine your thought processes. It also lets you see what is most important to people in the community, which is what we want in order to address the diseases and find the approaches most helpful to them," she says.

Stemmed from a Haiku

Tis' the day to praise,
The base of life unhazed,
The world in one cell.

Figure 1. Winning Haiku/Short Form Winner of the 2009 Stem Cell Awareness Day Poetry Contest

Reprinted with permission from Jonathan Lee, High School Junior, The Drew School, San Francisco, CA, USA.

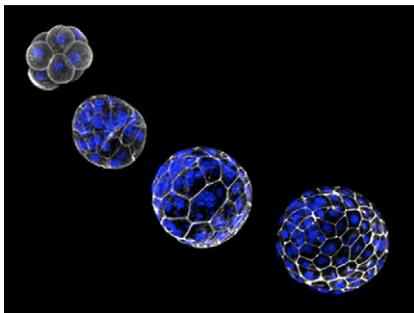


Figure 2. Early Embryonic Development

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Though her responsibilities as a working scientist and an administrator keep her more than busy, Nolta says she never turns down an opportunity to speak about regenerative medicine to the public. "Outreach is incredibly important to me. The more we can spread the word, the less people will fear the term stem cell research," she says. Later that afternoon, Nolta led presentations about Huntington's Disease and stem cell research prior to a tour of the UC Davis Institute for Regenerative Cures facilities.

Other CIRM grantee institutions held open houses and talks at their laboratories as well, including the University of California, Irvine, which gave presentations on the potential of stem cells to ameliorate the effects of aging and Alzheimer's disease, and Scripps Research Institute at La Jolla.

Those unable to participate on the day of the event were still able to take part via two Stem Cell Awareness Day con-

tests. The first, sponsored by CIRM, was a poetry competition suggested by Don Reed, vice president of public policy for the Americans for Cures Foundation (Figure 1). "Stem cells really are a form of poetry. Poetry is taking the fewest number of words and making something happen with them," Reed says. As someone who has logged thousands of hours working to encourage support for stem cell science after his son Roman was paralyzed in a 1994 college football accident, Reed suspected others would also welcome the chance to shift gears and think artistically about stem cell science. "There is so much plain hard work associated with stem cell research and advocacy that it seemed a great time to have some fun with it." One entry came from as far away as the Maldives. Meanwhile, a New York stem cell group, NYSTEM, sponsored a stem cell image contest (Figures 2, 3).

That week, many stem cell advocates, policymakers, and investors joined researchers attending the World Stem Cell Summit in Baltimore. The conference celebrated Stem Cell Awareness Day by showing the world premiere of "Stem Cell Review," a ten-part video series on the medical and business aspects of stem cells. The series is being aired on the internet station BioBusiness TV. The summit itself included public sessions involving guided tours of the posters with medical and graduate students from the University of Maryland and Johns Hopkins.

Recognition of the event spread to many communities across the United States as well. This year, the governors

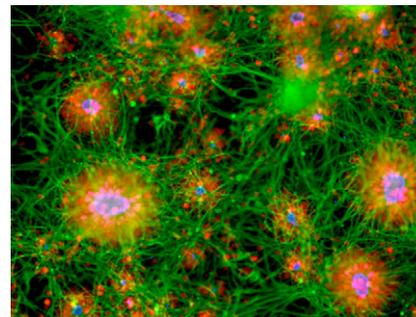


Figure 3. Neural Stem Cell Rosettes

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of California, New York, and Wisconsin all issued proclamations recognizing Stem Cell Awareness Day in their states, along with the mayors of San Francisco, San Diego, Sacramento, Long Beach, and San Jose.

CIRM is now working with the International Consortium of Stem Cell Networks to make the event truly worldwide next year, Gibbons says. Spain and the United Kingdom have both expressed interest in holding Stem Cell Awareness Day events next year.

These outreach efforts serve to remind both scientists and the public why stem cell research is worthwhile, says Reed. "People need to think of stem cell research not just in times of crisis, when presidents are trying to crush it out or raise it up, but in their everyday lives. A hundred million Americans have incurable chronic diseases or disabilities. This is the science we are fighting for."

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