NICK HIGGINS

## Q&A Nirupama Shevde

# Stemming the tide of misinformation

*As director of outreach experiences at the Morgridge Institute for Research in Madison, Wisconsin, Nirupama Shevde spreads the word about stem cells.* Nature Outlook *finds out what she has to say.*

**How did the Morgridge institute become such a major centre for training stem-cell scientists?**

Our stem-cell training programme was started in 2003 by James Thomson [the University of Wisconsin biologist who derived the first human embryonic stem (ES) cell lines in 1998] through WiCell Research Institute. At first we focused only on human ES cells. Then, in 2007, the Thomson lab and Shinya Yamanaka's lab at Kyoto University in Japan described the generation of human induced pluripotent stem (iPS) cells. As soon as this technology was available, a lot of scientists from biotechnology and pharmaceutical companies started attending the course. They had not been very enthusiastic about using human ES cells, and even though iPS cells were the new kid on the block, they felt more comfortable with this model. The programme is still under Thomson's guidance, and any time a new technology comes out of his lab, we have the opportunity to incorporate it.

**What are the scientists who attend the course using iPS cells for?**

Most of them want to do *in vitro* work. We don't ask them what they do, because a lot of that is proprietary. Some companies have existing stem-cell-related technology that they want to improve, whereas others are interested in generating iPS cells for disease models or to make specialized cells, such as nerve or heart muscle cells, and then use those specialized cells to test potential compounds in drug discovery or toxicity testing.

**Some saw biopharmaceutical company Geron's decision to suspend its human ES cell clinical programme in November as a blow to the field — what is your view?**

It was sad that Geron had to end the trial. But the fact that it was able to take neuronal cells made from human ES cells to a stage where the US Food and Drug Administration felt comfortable allowing the company to put them in patients' bodies is a huge accomplishment. Other companies will come forward to do similar trials. For example, Advanced Cell Technology is conducting two trials related to dry age-related macular degeneration and Stargardt's macular dystrophy. Maybe I'm an eternal optimist, but I don't think Geron's efforts were a waste at all.

**Will iPS cells ever be a true surrogate for human ES cells?**

Scientists seeking to understand human development will keep using human ES cells, which are the gold standard. The iPS cells are not optimal, because they were reprogrammed from adult somatic cells. Whether human ES cells make the impact in regenerative medicine that we want them to is anybody's guess, but we are learning so much by using them. The iPS cells will probably play a significant but different role. The classic example of the advantage of iPS cells is the disease-in-a-dish model: a patient with Parkinson's disease goes in for a skin biopsy, we take their skin cells and reprogram them, and now we have a stem-cell line that mimics Parkinson's. That's tremendous progress.

**Do you ever face overt hostility about human ES cell research?**

I have encountered a lot of questions and confusion, which is usually because of misinformation or incomplete information. I've gone to many churches to give presentations, and they invited me because they want to know more. I'm very respectful of people's opinions. All I can do is try to give the scientific facts. Some people tell me they were under the impression that abortions were performed to get these cells, and I inform them that this is not the case. These balls of cells, or blastocysts, came from *in vitro* fertilization procedures and were donated by the parents. Once something is donated or assigned for research, it can never go back into the human body. If they were not used, that would be a waste. After getting that information, if people are still against human ES cell research, I respect that. I am a Christian, and I tell people that when I made the transition from my old research to using human ES cells, it wasn't a snap decision. I thought about it a lot before deciding it was okay for me. I tell people this is a decision they have to make for themselves, and they're fine with that.

**Should researchers using human ES cells engage the public and policymakers more aggressively?**

I think we have an obligation to educate people, but I also think we should remain scientists and not engage in politics. Showing significant changes in treatments and cures will help people to come around. People joke that I don't have to sell what I do because I believe in it so much. I just open my mouth, and people understand my passion and my sincere desire to make a difference, and maybe they will listen because of that. I have learned that if I am sincere and passionate about offering scientific facts and reasons as to why I am OK with human ES cell research, they are more open minded and willing to listen. ■

*Interview by* **Michael Eisenstein**, *a freelance writer based in Philadelphia, Pennsylvania.*