



## **Stem Cell Debate at W5, Belfast – 23<sup>rd</sup> October 2012**

*'Based on what you, personally, know at this moment, do you feel there is value in stem cell research and therapy?'*

This was the question debated by 90 AS and A level students who attended a Stem Cell Debate event at W5, Belfast's award-winning science and discovery centre, on 23 October 2012. The students, from four schools across Northern Ireland, had come not only to debate but to learn more about stem cells and to meet and talk to real stem cell scientists working in the field. The full-day event included speeches, a quiz, a poster-making session, a game of 'stem cell twister' and of course a debate, which was the centrepiece activity of the day.

The pupils arrived shortly after 10.00 and were quickly ushered up to W5's fifth-floor lecture theatre where they were greeted by education staff and given a rundown of the day's proceedings. From the very outset, the relatively small size of the event gave the event a friendly, almost tutorial atmosphere, conducive to the sort of learning that works best with this age group.

The attending pupils were all students of biology, enthusiastic and well-informed. Prior to coming they had been sent information about today's debate as well as background information about stem cells and a copy each of *Hope Beyond Hype*, the EuroStemCell produced comic book which takes a look at the stem cell story from discovery to therapy. This helpfully acted as a primer to the ethics issues which would feature later in the day.

Following the welcome and introductions the assembled students were asked to vote for the first time on the question above. The question was asked at this point deliberately in order to gauge students' opinions *before* they went on to hear more about stem cells and to discuss them in more detail. To help make a rough count of results, students were given a green card and a red card to vote with. Green stood for 'yes', red for 'no.' In response to the question, there was a unanimous show of green indicating, as expected from biology students, a general positive attitude toward stem cell research and therapy. But was it possible that this could change after the day's proceedings? Might students change their minds based on what



they heard from others and from some of the speakers to come? The answer to this would be revealed when the question was asked again at the event's conclusion.

With the first vote taken, everyone then watched an excerpt from the excellent short film *A Stem Cell Story*, available through the EuroStemCell website. This served perfectly as a reminder for students of the basics of stem cell biology. And then came the guest speakers.

The School of Medicine, Dentistry and Biomedical Sciences at Belfast's Queen's University is home to some cutting-edge stem cell research and the faculty's Professor Alan Stitt, director of the Centre for Vision and Vascular Science, agreed to come in to W5 and give a short presentation about his research. Along with him came his research partner Dr. Reinhold Medina, originally from Peru, who spoke first with a presentation which looked at the biology of stem cells in more depth. Professor Stitt followed by showing how he and his team have been researching the use of stem cells to cure diabetic retinopathy.



*Professor Alan Stitt*

Students were fascinated by both presentations and it was clear that their interest had been truly piqued by the two scientists. The next speaker however, opened their eyes yet further. Dr. Melissa McCullough, a lecturer also from the same department spoke about the ethical issues surrounding biomedicine and stem cells. Her topic contrasted nicely with the previous two speakers and, it may be said,



surprised some students who were expecting the day to be all 'pure science.' This was an excellent point at which to move on to the next part of the day.

Students left the lecture theatre and moved to W5's Atrium where nine round tables had been set up, each with ten chairs. Students then sat in mixed groups and proceeded to roleplay a scenario taken and adapted from Ready or Not?, the EuroStemCell online debate resource. At each table four students acted as an Ethics Committee considering the application by a biomedical research company for a licence to conduct a clinical trial using stem cells to treat spinal cord injuries. The other students played interested parties seeking to influence the committees decision. Each student was given a character biography and had to debate the scenario from their character's point of view. Eventually, based on what they heard, the 'committee' had to decide whether to grant a licence or not, and if so, what restrictions they might apply.



The students debated in their round table groups for an hour and as they did so Professor Stitt, Dr. McCullough and Dr. Medina moved around the tables and spoke with the students and joined in their discussions. During this time students were also tasked with producing an illustrated poster outlining the stem cell story and detailing their own committee's decision and recommendations. To give them a break from the table, each group was also able to play the floor game Start with a Stem Cell (also known as 'stem cell twister'). This fun and very interactive game helped illustrate and emphasise stem cells' special ability to differentiate.



After lunch all the students gathered in the lecture theatre one more time to discuss the proceedings of the round table session. Each table-group presented their decision by explaining the points written on their poster. Of the nine groups, only one had decided not to grant the company a licence. All groups however, had certain stipulations to be adhered to before the licence was given.

It was clear that there was a widespread positive attitude toward stem cell research. However, it was also clear that students had learnt that the issue was not simply an all good or an all bad one. The group which had refused to grant a licence did so insisting that the company should apply again in the future but with better data. As they put it, their committee wanted to see, "More guarantee of positive outcomes [and] more data of effects on larger animals." It was clear that all students had given the issue a lot of thought and this had, to a large extent, been due to the thought-provoking presentations of the speakers before lunch.

Students were then finally asked to vote once more, this time, not in character but from their own personal perspective. They were asked three key questions. The first was the same question they were asked at the beginning of the event:

1. Based on what I know now, I feel there is value in stem cell research and therapy?
2. Based on my personal convictions I have some reservations about stem cell technology.
3. As a result of today's debate I have changed how I feel about stem cells.

The first question elicited a unanimous show of green cards again, just as expected and just as it had done in the morning session in the lecture theatre. The second question however, divided the group into almost 50/50 green and red cards. It was interesting to see that quite a few did not look at the issue from a purely scientific point of view. Question three resulted in a show of about 70% green cards showing that the day's activities had affected the students' opinions in some way. Speakers, facilitators, teachers and of course students themselves all found this very interesting and a very apt and succinct conclusion to the day. Though some schools had to then leave quickly, some were able to linger and an impromptu question-and-answer session between the students and the three guest speakers took place. It was clear that for many, the speakers had been a highlight of the day and the genuine interest of the students was very impressive. It was plain that a number of



students had been inspired by the approach taken to the topic, an approach they may not have thought of before or experienced at school. It also did not seem an unlikely proposition that amongst the 90 biology students in attendance there were not a few stem cell scientists of the future and that Professor Stitt, Dr. Medina and Dr. McCullough might possibly find themselves with a few familiar and very enthusiastic research partners only a few years from now!



l – r: Professor Alan Stitt, Dr. Reinhold Medina, Dr. Melissa McCullough, Danielle Nicholson of REMEDI and Sean Greer from W5