



ISCT TALKING WITH GIANTS

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International Society
ISCT
Cell & Gene Therapy®

5 Questions with Dr. Nancy Collins

When a family friend was diagnosed with leukemia, a young Dr. Nancy Collins knew that she wanted to work in medicine to help people like him. This powerful experience led her to pursuing a degree in biology and then her PhD in microbiology and immunology in 1977 from the University of Rochester in New York. Since those days in the classroom, Dr. Collins has embraced her passion, focusing her research on the translation of cellular therapies from the research laboratory into clinical application, particularly in hematopoietic stem cell transplantation. Her laboratory at Memorial Sloan-Kettering Cancer Center developed a number of methods to improve the safety and efficacy of hematopoietic cell transplantation and treatment of post-transplant complications, working with bone marrow, peripheral blood stem cells, and cord blood cells. She was the visionary first president of ISCT, playing a pivotal role in the genesis of ISCT and the far-reaching global society it has become today. She was also a founding member of the Foundation for the Accreditation of Cellular Therapy (FACT), which was jointly instituted by ISCT and the American Society for Blood and Marrow Transplantation (ASBMT). Over the years, Dr. Collins has inspired and mentored many up-and-coming cell and gene professionals, teaching at the University of Toledo as well as acting as the respected Senior Editor for ISCT’s Telegraft newsletter.

Dr. Collins took the time out of her busy morning (she was planning a science careers day for 130 local high school girls) to talk to ISCT about the Society’s integral role in the cell and gene therapy field, what she envisions for the industry in the next five years and what some of the biggest challenges are during that time.

1 How has the cell and gene therapy field different now compared to when you started 40 years ago?

It’s changed so much – it’s such a different universe today. When I first started, cell and gene therapy was, what I call, a boutique science. There were very few people involved in it and we all knew each other – it was very collegial. It was also a boutique science in that the medical centers were different and had their own way of doing things... there was no standardization and we were essentially making it up as we went along. The field is still very collegial but it is so large and there’s such a large industrial component. When we first started, the FDA really didn’t know what to do with us. Now, they’re really paying attention. When we started using cord blood and peripheral stem cells, the FDA used that as their entrance into the field, setting up the first regulations.

That was what actually triggered the formation of ISCT. It was apparent that we needed to organize to meet and protect our research space – we knew that collaborating with the FDA and with each other was the only way to go. We really needed our own organization to protect ourselves and facilitate communication and creating ISCT was the solution. If we had not started ISCT, I don’t know where we’d be now. If we had not developed this partnership between industry, academia and the regulators, cell and gene therapy would not be where it is today. ISCT really catalyzed this partnership.

2 Where do you see the field going in five years?

I don’t think things will be much different in five years. I think we’ll have more regulation and we’ll have more standardization. The thing about cell and gene therapy that’s so wonderful is the fact that it’s so creative. We have lots of minds and lots of people

now thinking about how we can help people and how we can conquer disease. The whole CAR-T story is so inspirational because it shows how academic centers can partner with the biotech industry and work with the regulatory sector, putting out safe and effective therapies. In five years, I think we still need to be vigilant about people who put profit before safety and to educate the public about these products. In five or 10 years, I think we’ll be moving these therapies out of the big transplant centers and into hospitals and smaller licensed clinical centers. We really need to figure out how to do that safely.

3 What do you love most about working in the cell and gene therapy field?

Next to raising my children and my grandchildren, working in this field has been the most important thing I have ever done. Oh, and I’d like to add marrying my husband. (Laughs) But seriously, it has been a tremendously fulfilling and creative endeavor. The people whom I have met over the years have been incredible – incredibly smart, incredibly dedicated, and incredibly creative. I’m astounded at the degree of volunteerism in the field because people do things, all the time, without getting paid. They’re so dedicated about what they are doing. Cell and gene therapy is a lot of fun and very fulfilling.

4 What are some of the biggest challenges facing the development of new therapies?

The first one, of course, is safety. And then next to that would be developing new regulations and standards. The financial side of what happens in this field is also very complicated and is the driver of much that happens. So, we need to have people working in that area so we have the money to support our work. One thing that ISCT has done to help with these challenges is that it’s given us a venue to meet with the people in

industry who must think about these things in order for their company to survive. It’s amazing that ISCT takes academics trained in science and puts them in an arena where they have to think about how their work will pay for itself and make it safe so their patients are not harmed.

5 For those just starting out in the field now, what would be the one piece of advice you would give them while reflecting on your past experiences?

It would be to network. The young people coming into this science are in an entirely different universe than us old folks. It’s interesting to work with Telegraft because I’m working with some really bright, young ESPs (Early Stage Professionals) and it’s a committee I just love. It’s one of the most important things ISCT has done in recent history because we’ve got to bring these young people into the field and they have to know that the field wasn’t always the way it is now. Sometimes they come in thinking that everything has been set up so these therapies are developed safely. They don’t realize how many gaps still need to be filled – they haven’t seen the products fail. In this field, we have tremendous enthusiasm for what is possible, but we still don’t know how to control it all and you have to respect the complexity. That’s the other advice I’d give – to be aware that the field is still developing.