

2017 Scale-up and Manufacturing of Cell-Based Therapies Award Winner

Sponsored by Pfizer and ECI

Peter W. Zandstra



Peter Zandstra has demonstrated outstanding achievements in elucidating the factors that regulate stem cell expansion and differentiation. He has also developed a fundamental understanding of the design principles for stem cell bioreactor technologies during nearly two decades at the University of Toronto. Peter's work integrates engineering and biological approaches, and he has contributed to the development of clinically and industrially relevant and academically recognized technologies based on the design of bioprocesses for the growth and differentiation of adult and pluripotent stem cells. Key contributions include:

- High-throughput experimental assays for determining molecular regulators of stem cell behavior
- Conceptual and computational models for molecular regulation of stem cell proliferation and differentiation
- Establishing bioreactor conditions to effectively yield desired stem cell proliferation and differentiation behavior
- Developing approaches to examine physiological and therapeutic effects of culture-expanded stem cells

In addition to his role as a Professor, Dr. Zandstra is interested in innovation and the process by which fundamental research (especially in cell manufacturing and process development) can be catalyzed and translated for health and economic impact. Some of these efforts are manifest in his role as co-founder and Chief Scientific Officer at CCRM (www.ccrm.ca).

CCRM is a Canadian, federally incorporated, not-for-profit organization supporting the development of foundational technologies that accelerate the commercialization of

stem-cell-based products and therapies. Over the last 5 years CCRM has grown to 40+ employees (>75% PhD level), launched 4 companies, and attracted >\$30M in industry funding. Peter has also participated in the founding of two for-profit companies (Inception Lifebank and ExCellThera), and is a scientific advisor for a number of others, including Silvercreek Pharmaceuticals. ExCellThera, launched in 2015, is a clinical stage company that focuses on the development of technologies for robust and cost effective blood-stem-cell-based therapies for leukemia and other blood diseases.

Peter is a spectacular teacher and scientist. His scientific accomplishments set the bar high for the field. He has the novel ideas and inventiveness to come up with entirely new concepts, as well as the intelligence and drive to carry them through to fruition. Few laboratories are having more impact on the field.

This award recognizes outstanding contributors to the development and commercialization of cell-based therapies. Past recipients include Bob Nerem (2014) and Kim Warren (2015).