

## August 4<sup>th</sup>, 2018 MN Neuropathy Association Meeting Notes

by J. Bishop and his best note takers L. Bishop and her sister G. Hedstrom

### Speaker:

William Hoffman of the U of M Medical School  
[https://mbbnet.ahc.umn.edu/hoff/hoff\\_w.html](https://mbbnet.ahc.umn.edu/hoff/hoff_w.html)

### Topic:

Stem Cells and Regenerative Medicine: A Revolution Picks Up the Pace

Link to the slides he used in his presentation:

- ["Stem cell research: Evolving policy for a new science"](#)[PDF]  
University of Minnesota Stem Cell Institute, November 17, 2010.

William Hoffman has been giving talks on Stem Cell treatments for 15+ years. He emphasized if it's not in clinical trials beware.

He talked about two pioneers in Stem Cell Research and other developments in Stem Cell Research:

- Dr. James Thomson, University of Wisconsin, Madison

Published paper that led to an explosion in the field of stem cell research. In November 1998, Dr. James Thomson's laboratory reported the first derivation of human embryonic stem cell (hESC) lines from human blastocysts (Science 1998;282:1145-1147).

<https://stemcellportal.com/content/dr-james-thomsons-lab>

- Professor Shinya Yamanaka, Kyoto University & Gladstone Institute

[How iPS cells changed the world](#) Better explanation than my notes.

- The Promise and the Challenge of Stem Cell Research -- Statement of Story C. Landis, Ph.D., Director National Institute of Neurological Disorders and Stroke, National Institutes of Health, U.S. Department of Health and Human Services

<https://stemcells.nih.gov/StaticResources/policy/Landis2007-01-19.pdf>

- Stem Cell derived organoids - Madeline A. Lancaster and Juergen A. Knoblich

Generation of Cerebral Organoids from Human Pluripotent Stem Cells  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4160653/>

- Big Pharma involved in clinical trials for CAR T Cells – Greatest advance in cancer therapy since chemotherapy

Jun 23, 2018 - Chimeric antigen receptor T (CAR-T) cell therapy has produced promising results in clinical trials.

<http://www.lymphomation.org/programing-t-cells.htm>

The Scientist - The CAR T-Cell Race: Tumor-targeting T-cell therapies are generating remarkable remissions in hard-to-beat cancers—and attracting millions of dollars of investment along the way.

<https://www.the-scientist.com/bio-business/the-car-t-cell-race-35701>

### Outlook for Treating Peripheral Neuropathy

- Stem cell transplantation remains largely at the pre-clinic stage
- Proper stem cell homing and migration remain a concern
- Stem cell transplantation has shown some benefit but is still inferior to nerve repair with conventional techniques
- Pre-clinical and eventually clinical studies comparing different types of stem cell are needed
- Optimal Schwann cell differentiation has yet to be achieved

A little explanation for the last bullet:

The Wound Microenvironment Reprograms Schwann Cells to Invasive Mesenchymal-like Cells to Drive Peripheral Nerve Regeneration

— [https://www.cell.com/neuron/abstract/S0896-6273\(17\)30843-7](https://www.cell.com/neuron/abstract/S0896-6273(17)30843-7)

The repair Schwann cell and its function in regenerating nerves

— <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4929314/>