



Nebraska Coalition honors Chancellor Emeritus Harold M. Maurer, M.D. and Beverly Maurer

The Nebraska Coalition for Lifesaving Cures held its twelfth annual luncheon on Monday, April 28, 2014, honoring University of Nebraska Medical Center Chancellor Emeritus Harold M. Maurer, M.D., and Beverly Maurer. The sold-out event was held at Happy Hollow Club.

Dr. David Crouse, president of the Coalition board, welcomed those attending. Dr. Jennifer Larsen, Vice Chancellor for research at UNMC, spoke about the accomplishments of Dr. Maurer during his tenure at the medical center. Richard “Dick” Holland, chairman of the Board of Directors for the Coalition and Lynne Boyer, secretary of the board, also made remarks about the honorees.

John Nelson served as master of ceremonies.

The Coalition surprised the couple with the creation of an annual research award that will bear the Maurers’ names. The “Dr. Harold M. & Beverly Maurer Scientific Achievement Award” will be given annually by the Coalition, beginning next year, to a scientist or clinician who shows special merit or promise in research topics or treatment areas that mirror the Coalition’s mission.

“We look forward to recognizing some of the prominent Nebraska workers in this area,” said David Crouse, Ph.D., president of the Coalition.

Lynne Boyer said that both Dr. Maurer and “his powerhouse wife Beverly” knew it would take community support to reach their research goals. The couple helped to raise close to \$1 billion in philanthropy, and Beverly was a leading driver in the formation of Nebraskans for



Above: Dr. Harold M. and Beverly Maurer

Below: Dele Davies, Vice Chancellor for Academic Affairs at UNMC, Dr. Harold M. Maurer, and Quan Dong Nguyen, M.D., Professor and Chair of Ophthalmology at UNMC



Research, which later joined with business leaders to create the Nebraska Coalition for Lifesaving Cures.

“I’ve admired Dr. Maurer and I’ve admired Beverly for a long, long time,” said Dick Holland. “I don’t think they will ever be forgotten – what they have accomplished is remarkable.”



In our last newsletter I wrote about the rapid advances related to induced pluripotent stem cells (iPSC). This month I want to briefly look at the domain of clinical trials.

Trials are ongoing in two areas: spinal cord injury and a well-publicized set of trials treating various forms of macular degeneration in the retina. Although spinal cord injury trials were initiated by Geron in 2010, they were suspended when the company changed research directions. After acquisition by another biotech company, the outcome of the trial was recently reported by Asterias Biotherapeutics. There were no adverse treatment related effects in patients treated in three medical centers in the U.S. in the two to three years since administration of the hESC derived oligodendrocyte progenitor cells. Patients will be followed for at least 15 years.

In the retinal trials, the early results in both the U.S. and U.K. have been described as “encouraging” with “improved visual acuity” (*Schwartz et al, The Lancet, 2012*). Though still in early Phase I/II trials, some patients have recovered significant vision after the transplantation of retinal pigment epithelium cells derived from an embryonic stem cell (ESC) line and show no signs of rejection or other complications. The slow progress in embryonic stem cell breakthroughs stands in contrast to the early hype for “cures” from these cells and is often the target of critics even though the knowledge gained

and interest generated by ESC have led to major new efforts with adult and neural stem cell sources. Indeed, the progress with these cell sources has been remarkable. In a recent survey of the 82 “therapy development projects” supported by the California Institute of Regenerative Medicine (CIRM), only about half a dozen are focused on ESC while the great majority use iPSC, neural stem cells, mesenchymal stem cells (MSC) or other adult stem cell sources (*CIRM, Progress Toward Therapies, 2013*).

For example, at UNMC, Dr. Pierre Fayad is participating in a registered clinical trial testing the ability of an adult stem cell product to treat stroke patients (*Fayad, UNMC Today, 2013*). In a number of locations around the world, including in the U.S., FDA approved studies with neural stem cells for spinal cord injury and other central nervous system problems were initiated in just this past year (*Willyard, Nature – Stem Cells, Nov 2013*). Another significant funding agency, the New York Stem Cell Foundation, has recently released a summary of their progress in stem cell research, again, mostly with non-ESC sources (<http://www.nyscf.org>). It is remarkable how the knowledge gained from ESC research has supported and stimulated research with all forms of stem cells. The future for all forms of stem cell therapy is unfolding before us.

Finally, I want to thank all of our members for your continuing support of the mission of the Coalition – which is to promote, support and advocate research to advance our quality of life and economy.

Stem Cell Science: Hype or Hope?



Paul S. Knoepfler, Ph.D., an Associate Professor of Cell Biology and Human Anatomy at the University of California Davis School of Medicine, was the featured speaker at “Lunch and Learn” events in Lincoln and Omaha on April 25 and 26 as part of the Nebraska Science Festival.

Dr. Paul S. Knoepfler

Dr. Knoepfler discussed and answered questions about stem cell science that helped attendees distinguish between false hype and legitimate hope. Dr. Knoepfler is a cancer survivor, patient advocate, writer and only faculty level academic blogger on stem cell research in the world. He was the recipient of the Genetic Policy Institute 2013 National Advocacy Award, previously won by Michael J. Fox.



Dr. Knoepfler discusses stem cell science with attendees of the “Happy Hour with a Scientist” event.

This was the second year for the Nebraska Science Festival, a four-day series of events designed to make science accessible, interactive, relevant and fun for kids and adults alike. Presented by UNMC, the Festival is a collaboration of organizations and individuals interested in the advancement of science literacy. The Nebraska Coalition for Lifesaving Cures is a sponsor of the Festival.



Creating mature nerve cells better mimics disease

June 6, 2014 | *California Institute of Regenerative Medicine*

Many teams have reported creating disease-specific nerves in the lab by creating iPS type stem cells from the skin of patients with neural diseases like Alzheimer's, but they are less than perfect models of the disease. While they mimic the disease better than any animal model, the nerves resemble those of a newborn, not an older person likely to get the disease.

Now a team at the University of Cambridge in the U.K. has developed a process that tricks the maturing iPS stem cells into continuing down the maturation pathway. The result is nerves in a dish that behave more like those in the patient. The website *PhysOrg* ran a story about the work that was published in the May 27th journal *Development*.

Embryonic cells show promise in multiple sclerosis

June 6, 2014 | *California Institute of Regenerative Medicine*

The vast majority of stem cell clinical trials registered at clinicaltrials.gov use a type of stem cell found in bone marrow, fat and cord blood called mesenchymal stem cells (MSCs). But many in the field believe that sometimes those cells are a little too mature to get the job done well. They suggest that in some situations these cells are often only minimally effective at the goals for their use: reducing inflammation and secreting factors that stimulate natural healing. So several groups have started maturing embryonic stem cells into early stage MSCs hoping their youth would make them more robust in these functions.

Now, a team from the company ImStem Biotechnology and the University of Connecticut has shown that this is indeed the case—at least in the model in this study. They published in *Stem Cell Reports* that embryonic-derived MSCs were better at reducing the damage of multiple sclerosis in mice. The company's press release was picked up by the *San Francisco Chronicle's* website, SFGate.com.

Stem cell research gets a multimillion dollar boost at the Capitol

May 23, 2014 | *Original article by Dan Browning, StarTribune*

Minnesota has joined 15 other states that have backed stem cell therapy research with special taxpayer funds. Rep. Erin Murphy, a registered nurse and majority leader of the Minnesota House, spearheaded legislation, which Gov. Mark Dayton recently signed, that will provide about \$50 million over the next decade as seed money for research into regenerative medicine in Minnesota.

Dr. Andre Terzic, director of the Mayo Clinic Center for Regenerative Medicine, said that California was the first state to pass state funding in 2004. That legislation set up the California Institute for Regenerative Medicine (CIRM) with \$3 billion in funding.

Minnesota pioneered stem cell therapy in 1968, when Dr. Robert Good performed the first bone marrow transplant. The new law provides \$4.35 million in grant funds next year. A committee of outside experts will evaluate proposals based on how they affect Minnesota communities, whether they hold the promise of creating jobs, and possible industrial and clinical applications.

Stem cell breakthrough: patient-specific therapies for Type 1 Diabetes

April 29, 2014 | *MedicalNewsToday.com*

A team of scientists from the New York Stem Cell Foundation Research Institute and Columbia University Medical Center, also in New York, claim to have created the first disease-specific embryonic stem cell line with two sets of chromosomes.

The research began in 2006 as part of an effort to make patient-specific embryonic stem cell lines from people who have type 1 diabetes. The process behind this innovation is called somatic cell nuclear transfer (SCNT). It involves taking unfertilized donor oocytes - the immature egg cells used in reproduction - and adding to them the nuclei of adult skin cells taken from the patient.

Stem cell experiments for this project initially took place at Harvard University in Cambridge, MA, with skin biopsies from the patients being performed at Columbia University Medical Center.



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