

FINDINGS

2016 FALL NEWSLETTER

Nebraska Coalition for Lifesaving Cures
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Omaha, Ne 68114

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UPCOMING EVENTS

Science Café with Dr. Franklin D. West

Tuesday, November 15, 2016

7 pm at The Slowdown
729 N 14th Street, Omaha

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Nebraska Coalition
FOR LIFESAVING CURES

FINDINGS

2016 FALL NEWSLETTER

NCLC says good-bye to its founder Richard "Dick" Holland



Richard "Dick" Holland

The Nebraska Coalition for Lifesaving Cures lost its biggest supporter Tuesday, August 9, 2016, when Richard "Dick" Holland died following a short illness. He was 95.

The Coalition was not the only organization Dick Holland supported, but the organization did feel special because he created it and then had the vision to merge Nebraskans for Research with the Coalition, to expand its strength and its reach statewide and beyond.

Holland's philanthropy extended to the University of Nebraska Medical Center (UNMC) and included major gifts for the Durham Research

Centers (DRC), the Michael F. Sorrell Center for Health Science Education, the Fred & Pamela Buffett Cancer Center, and the UNMC College of Public Health.

His donations created the Mary and Richard Holland Cardiovascular Research Laboratories and the Mary and Dick Holland Regenerative Medicine Program.

His good friend, Harold M. Maurer, M.D., chancellor emeritus of UNMC said this on his passing, "He bravely led The Nebraska Coalition for Lifesaving Cures to promote human embryonic stem cell research in Nebraska for research on incurable diseases afflicting mankind. He attended the Board of Regents' critical meeting to present his view on the subject, and he was successful. He would whistle/howl at events and that made everyone smile along with his tremendous humor. We loved him and will miss him dearly. He is irreplaceable!"

A huge supporter of the arts, Holland and his late wife, Mary, funded the Holland Center for Performing Arts. They also provided major support to Opera Omaha, the University of Nebraska at Omaha, the Child Saving Institute and All Our Kids, now known as the Partnership For Our Kids.



Lynne Boyer and Dick Holland



Dick Holland and Marian Leary at the 2016 Spring Luncheon

Upon hearing of his death, UNMC Chancellor Jeffrey P. Gold, M.D., released the following statement: "Over the past two years, I have had the true honor to get to know Mr. Holland and his family and to learn of the visionary leadership role that he has had for UNMC and for our community. His strong spirit, dedication to quality and groundbreaking programs of science have been truly remarkable. His collegiality, sense of humor and sincere welcome, as I joined our community, also will long be remembered."

FROM THE PRESIDENT

Update on Embryonic Stem Cell Clinical Trials

By Dr. David Crouse
President, Nebraska Coalition
for Lifesaving Cures



Most people who follow this subject are aware that there are still three general clinical areas where embryonic stem cells (ESC) are being tested in well accepted and registered human clinical trials. These include trials for treatment of: macular degeneration; type I diabetes; and, spinal cord injury. Results summarized more than two years ago for the macular degeneration trials were quite positive, though still in the Phase I/II stage. No results other than “no adverse events” have been reported for the diabetes trials. Now, we have the first report from the resumption of the spinal cord injury trial. As you might recall, this trial was suspended for two to three years when the company originally sponsoring the trial, Geron, decided to change direction and focus more on drugs for cancer as a clinical target. Just over two years ago, a relatively new company, Asterias Biotherapeutics, acquired the rights from Geron to the cells used in the study and planned for the resumption of patient

accrual in a multi-center clinical trial. With additional support from the California Institute for Regenerative Medicine (CIRM) and BioTime to develop and process clinically usable cells, the studies resumed just over a year ago.

The first patient was enrolled and treated in March of 2016. He was a 21-year-old man who suffered a traumatic injury to his spinal cord in a car accident. His age, general health and availability for quick enrollment in the study made him an eligible and ideal candidate to be enrolled. He was treated at the USC Keck Medical Center with a direct spinal injection of 10 million AST-OPEC1 cells, derived from ESC established several years ago. Within two weeks he began to show signs of improvement in motor function. His clinical response continued to show improvement to the point that, at 90 days post-treatment, he has regained most use of his hands and arms with no adverse events. Although his physicians are careful not to predict his future progress, they are very optimistic and are seeking additional patients to enroll in the multi-center trial. Because of the complexity of handling and administering the cells, only six sites are authorized to enroll and treat subjects. Since additional patients are still being acquired, everyone anxiously awaits further updates.



“Dick Holland was an extraordinary man. He was incredibly well-read, curious about nearly everything, direct in his approach to tough subjects, a visionary for our community and always able to surprise people with his unique sense of humor. He was one of Nebraska’s leading supporters of the arts, maternal and child health, early childhood education, and biomedical research as well as many other issues related to social justice. Personally, I viewed him as one of my mentors and, somewhat selfishly, wish I had known him and worked with him for a much longer time. We all will clearly miss his leadership, passion for truth and strong voice in our community.

David Crouse, Ph.D.
President of the board of
directors of the Nebraska
Coalition for Lifesaving Cures

UNMC ANNOUNCES RICHARD HOLLAND FUTURE SCIENTIST AWARD WINNERS



Richard Holland Future Scientist Award Winners at ceremony in Nebraska City.

Ten undergraduate students from seven Nebraska colleges and universities recently received the 2016 Richard Holland Future Scientist Award from the Nebraska Coalition for Lifesaving Cures.

The students received cash prizes totaling \$5,000 at the annual INBRE (Institutional Development Award (IDeA) Networks of Biomedical Research Excellence Program) conference on Aug. 9 in Nebraska City.

The awards are named in honor of the late Richard Holland, an Omaha philanthropist and longtime supporter of research. Holland died Aug. 9 at the age of 95. This is the ninth year the

Holland Future Scientist Awards have been awarded.

The students were judged for their oral and poster presentations of the research work they conducted this summer as part of the INBRE program.

The INBRE program is overseen by James Turpen, Ph.D., associate vice chancellor for academic affairs at the University of Nebraska Medical Center. Dr. Turpen is a professor in the UNMC Department of Genetics, Cell Biology and Anatomy and is the principal investigator of the \$16.2 million grant funded by the National Institute of General Medical Sciences of the National Institutes of Health that funds the program.

Holland Future Scientist Award Winners

Oral Presentation Winners

- 1st – Emily Belak**
Doane University
- 2nd – Mackenzie Strehle**
University of Nebraska-Lincoln
- 3rd – Nathan Hatch**
Wayne State College

HONORABLE MENTION

- Alec McCarthy**
University of Nebraska-Lincoln
- Mirtha Gutierrez**
College of Saint Mary

Poster Presentation Winners

- 1st – Nicholas Johnson**
Nebraska Wesleyan University
- 2nd – Kari Heck**
University of Nebraska-Lincoln
- 3rd – Rachel Lukowicz**
Doane University

HONORABLE MENTION

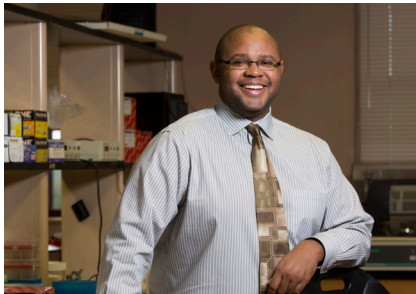
- Austin Sanford**
University of Nebraska at Omaha
- Rachel Pham**
Creighton University

“I had the pleasure of working with Mr. Holland and observing, firsthand, his commitment to medical research. With his support and that of many of his friends, we can say that Nebraska is a state with a supportive and positive research climate. Dick Holland’s impact on the quality of life in Omaha and in the state of Nebraska can’t be understated. Through his philanthropy and leadership, his lifetime of giving will impact generations to come.”

Victoria Kohout - executive director, Nebraska Coalition for Lifesaving Cures

NEWS & NOTES

Coalition welcomes world-leading stem cell biologist to November Science Café



Dr. Franklin D. West

The Nebraska Coalition is bringing Franklin D. West, Ph.D., associate professor of regenerative medicine at the University of Georgia, to speak at the November Science Café. His talk is titled “Saving the Sumatran Tiger and Clouded Leopard – developing technology to turn tiger skin cells into sperm.”

Dr. West is a world-leading expert in stem cell biology with a focus in cellular reprogramming for agriculture and conservation and the development of stem cell therapies for neural injury and diseases including stroke, traumatic brain injury and dementia. He was named one of the nation’s top scholars under 40 by *Georgia Trends and Diverse: Issues in Higher Education* magazines and has been featured on NPR, CNN and FOX News.

Dr. West received a Bachelor of Science in biology from Morehouse College and a doctorate in stem cell biology from the University of Georgia, where he now holds position as an associate professor of animal and dairy science. Dr.

West was a MARC (Minority Access to Research Careers) U-Star Research Fellow and a David and Lucille Packard Research Fellow at Morehouse College. Dr. West sits on the steering committee of UGA’s Regenerative Bioscience Center.

He has published in numerous international scientific peer-reviewed journals including *Cell*, *Stem Cells* and *Scientific Reports*. He holds several patents in the area of regenerative medicine and has written book chapters covering topics from developing transgenic animals to cell therapies. Dr. West has produced the first live chimeric pigs from induced pluripotent stem cells, has developed novel stem cell to germ cell petri dish culture systems and a first-of-its-kind U.S. swine stroke model that has major implications on the treatment of human stroke patients.

Asterias’ stem cell clinical trial shows encouraging results for spinal cord injury patients

September 15, 2016

Kevin McCormack - California Institute for Regenerative Medicine

When researchers are carrying out a clinical trial they have two goals: first, show that it is safe (the old “do no harm” maxim), and second, show it works. One without the other doesn’t do anyone any good in the long run.

A few weeks ago Asterias Biotherapeutics showed that their CIRM-funded stem cell therapy

for spinal cord injuries appeared to be safe. Now their data suggests it’s working. And that is a pretty exciting combination.

Asterias announced the news at the annual scientific meeting of the International Spinal Cord Society in Vienna, Austria. These results cover five people who received a transplant of 10 million cells. While the language is muted, the implications are very encouraging:

“While early in the study, with only four of the five patients in the cohort having reached 90 days after dosing, all patients have shown at least one motor level of improvement so far and the efficacy target of two of five patients in the cohort achieving two motor levels of improvement on at least one side of their body has already been achieved.”

Reprinted with the permission of the California Institute of Regenerative Medicine

“On Tuesday, August 9, we lost our biggest supporter. Dick Holland died at age 95. Dick’s philanthropy enhanced the quality of life for all Nebraskans. We feel fortunate to have had him as a friend for the last 20 years. He is irreplaceable and will be missed.”

Beverly Maurer - founding member of Nebraskans for Research and board member of Nebraska Coalition for Lifesaving Cures

NEWS & NOTES

New approach could help turn back the clock and reverse damage for stroke patients

August 22, 2016

Kevin McCormack - California Institute for Regenerative Medicine

Stroke is the leading cause of serious, long-term disability in the US. Every year almost 800,000 people suffer from a stroke. The impact on their lives, and the lives of those around them, can be devastating.

Right now the only treatment approved by the US Food and Drug Administration (FDA) is tissue plasminogen activator or TPA. This helps dissolve the blood clot causing most strokes and restores blood flow to the brain. However, to be fully effective this has to be administered within about three to four hours after the stroke. Many people are unable to get to the hospital in time and as a result suffer long-term damage, damage that for most people has been permanent.

But now a new study in Nature Medicine shows that might not be the case, and that this damage could even be reversible.

The research, done by a team at the University of Southern California (USC) uses a one-two punch combination of stem cells and a

protein that helps those cells turn into neurons, the cells in the brain damaged by a stroke.

First, the researchers induced a stroke in mice and then transplanted human neural stem cells alongside the damaged brain tissue. They then added in a dose of the protein 3K3A-APC or a placebo.

They found that mice treated with 3K3A-APC had 16 times more human stem-cell derived neurons than the mice treated with the placebo. Those neurons weren't just sitting around doing nothing. USC's Berislav Zlokovic, senior author of the paper, says they were actively repairing the stroke-induced damage.

"We showed that 3K3A-APC helps the grafted stem cells convert into neurons and make structural and functional connections with the host's nervous system. No one in the stroke field has ever shown this, so I believe this is going to be the gold standard for future studies. Functional deficits after five weeks of stroke were minimized, and the mice were almost back to normal in terms of motor and sensorimotor functions. Synapses formed between transplanted cells and host cells, so there is functional activation and cooperation of transplanted cells in the host circuitry."

Reprinted with the permission of the California Institute of Regenerative Medicine

"Dick Holland exemplified pragmatic creativity and independent thinking in the tradition of George Norris, father of Nebraska's unique institutions of government. By successfully working to protect and expand academic freedom and intellectual inquiry in the state, he has left all Nebraskans an invaluable and timeless legacy."

Sandy Goodman - former president of Nebraskans for Research and Nebraska Coalition for Lifesaving Cures

"We who had the great fortune to be in Dick's company were given a gift. He made us aware of our humanity and our responsibility to one another, and he made us (if we were listening) realize we damn well (he'd love the cussing!) better act on that responsibility.

We love Dick and will carry him in our hearts forever."

Eunie Denenberg - Member of the board of directors of the Nebraska Coalition for Lifesaving Cures