

# findings

THE NEWSLETTER OF NEBRASKANS FOR RESEARCH AND THE NEBRASKA COALITION FOR LIFESAVING CURES Volume 7, Number 2

## NFR 2008 Tribute Recipient Holland Urges Attendees to Speak Out for Research



Sanford Goodman, Mary Ann Holland and Dick Holland at the Tribute Luncheon.

An overflowing Happy Hollow ballroom was the setting Monday, April 14, for Nebraskans for Research recognition of Richard "Dick" Holland, community leader and retired advertising

agency CEO. Holland was lauded for his courage, tenacity and his avid support of medical research.

John Nelson served as master of ceremonies for the luncheon and introduced Holland's daughter Andy. Andy applauded Chancellor Harold M. Maurer, M.D., for recruiting her father to the Nebraska Coalition for Lifesaving Cures. "That was very smart. For one thing, my dad has never met a controversy that he doesn't love. Secondly Dr. Maurer was smart to recruit my dad because once he gets his teeth into something, he's like a pit bull, you need a special device to pry his jaws open. We are lucky to have him for his tenacity and for his courage."

After an uplifting piano solo by international pianist, Stanislav Ioudenitch, Sandy Goodman, President of Nebraskans for Research, briefly reviewed the history of Nebraskans for Research and the new energy that has come with the joining of NFR and NCLC.

Goodman also announced that in honor of Holland's support of medical research and education, NFR would name its Future Scientist Award after Holland. It will now be called the Dick Holland Future Scientist Award. These are cash awards presented to Nebraska students who compete in oral and written poster presentations on their chosen areas of scientific studies as part of the Biomedical Research in Nebraska Scholars Program (BRIN), which provides summer fellowships for advanced research training at the University of Nebraska Medical Center, Creighton University Medical Center or the University of Nebraska at Lincoln, all of which are PhD granting institutions.

Following his acceptance of the award, Holland spoke about the progress of science across the centuries, acknowledging that it may have been easier to accept some of the early discoveries, "such as the earth is round, not flat and it moves around the sun and that the sun isn't stationary. That bacteria would yield the opportunity for vaccinations and that antibiotics would save thousands of lives."

"Today many scientists believe that science is on the verge of finding some new reality about life itself. That may be bad news for a lot of people," Holland said. "Yet today despite the scientific methods, science is attacked not just by some religionists, but by other political leaders of our own government when scientific findings don't jive with their political goals, they rewrite the findings."

Holland spoke about the need for personal and private morality during this time, "generosity, kindness, concern for others, men and animals, not just person to person, but nation to nation, group to group, tribe to tribe." He also urged the audience that we must be advocates for science.

"But as we sit here, make no mistake, any attack on science is probably based on some false or misleading idea of reality and it is a lousy road to take for the success of our collective future. Lastly, and I ask you to do this. We should all speak out for science-- politely and firmly and speak out publicly. And I think you should all remember that when speaking out you hold the high ground, you hold the high ground, Amen."

Holland's comments drew a standing ovation.

### Previous recipients of this honor include:

- 2007 Dr. James Armitage
- 2006 Harold and Marian Andersen
- 2005 Rik and Dr. Shannon Bonness
- 2004 Dr. Michael F. Sorrell
- 2003 Charles Durham

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## President's Corner

by Sanford Goodman, President - Nebraskans for Research and Research Nebraska, Inc.

A key argument in the arsenal of those opposed to human embryonic stem cell research (hESCR) proceeds as follows:

Every person alive today began as a single cell known as a zygote, which is the product of the fusion of a sperm cell with an egg cell (oocyte). That cell began to divide and the subsequent cells became the various tissues and structures of the body in a continuous process of development. (There are corresponding assertions of self-directedness that are subject to dispute but are not pertinent to this discussion.)

Given that a one-second old baby is indisputably a person with the right to life, liberty and the pursuit of happiness, the argument goes, and there is virtually no difference between it and a fetus one-second prior to birth, and there is virtually no difference one second before that, etc., all the way back incrementally to the zygote, clearly the zygote is indisputably a person with the right to life, liberty and the pursuit of happiness. The argument is also presented in the reverse chronology, from the zygote to the one-second old baby.

This allegedly non-religious argument advanced by hESCR opponents claims to be based on the science of embryology but it is in fact a logical fallacy that was identified over 2,500 years ago.

This is illustrated by the classical example of the heap. Begin with one grain of rice on a table. Add one grain of rice. The addition of the single grain of rice makes a trivial change to the collection of grains that preceded it. Since the single grain of rice is clearly not a heap of rice, and the addition of a single grain of rice does not materially change the nature of the collection of grains that preceded it, there will never exist a heap of rice regardless of how many individual grains we add to the pile.

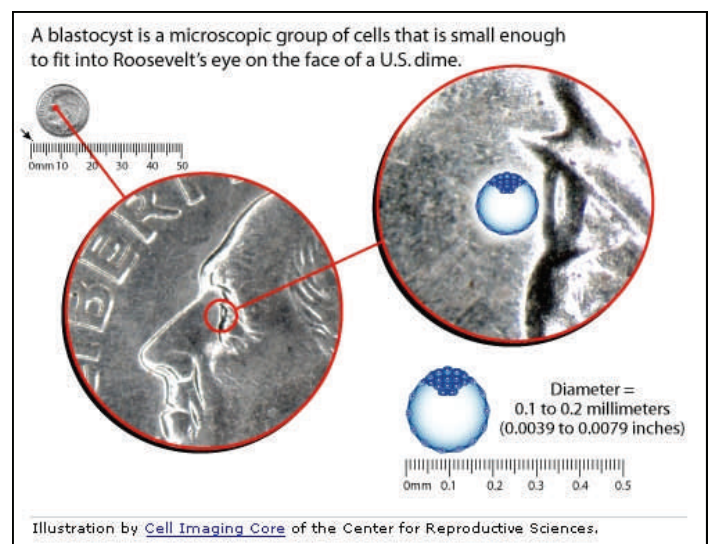
But clearly a bushel of rice piled on a table, or 10 metric tons of rice on the floor of a grain storage facility can accurately be characterized as a heap. (The Greek word for heap is "sorites" and the paradox is known as the Sorites Paradox.) During the continuous, incremental addition of single grains of rice, the collection of rice clearly became a heap – but at what point?

The same is true of human development. While the physical process of development is continuous and incremental, the physical nature of the developing organism clearly transforms from one thing to another.

The anti-hESCR use of this argument proceeds further to the conclusion that the coming into existence of the zygote by fertilization (or SCNT) is the only non-arbitrary point at which to establish full personhood. To do otherwise subjects us to the slippery slope that could justify infanticide by the same logic that if it is OK to destroy an embryo at the one-cell or 200-cell stage, and that each increment of development is not materially different from the moment before it, it must be OK to destroy a one-second old baby.

But this is just another illustration of the Sorites Paradox. hESCR supporters reject the Sorites Paradox argument when applied backwards from the one-second old baby. Clearly, we would not embrace it in the opposite direction to justify infanticide. The developing human organism becomes a person at a point in its development – a point subject to broad societal agreement in a morally stable society.

hESCR opponents may argue that the case of human development is different because of the special nature of the single-cell human organism. But this is not a scientific argument; it is a philosophical assertion. And in the case of virtually all the organized opposition to hESC, this assertion derives from a theological understanding of the relationship of the zygote to God as interpreted from certain Judeo-Christian traditions.



## Nebraskans for Research Recognizes Allens

Georgene and Bob Allen had two surprises the weekend of June 22, 2008. Their family surprised them with a 50<sup>th</sup> wedding anniversary party which drew family and friends to Hastings to help the couple celebrate their marriage milestone.

The second surprise was delivered by Beverly Maurer, a board member and one of the founding members of Nebraskans for Research. On behalf of NFR, she presented a plaque to Georgene and Bob for their tireless advocacy and support of Nebraskans for Research and for medical research in Nebraska.

Georgene serves on the advisory board of NFR. Bob served as Mayor of Hastings for four years and as a member of the University of Nebraska Board of Regents for 12 years.

The couple own Allen's of Hastings Inc., a business that includes a supermarket, liquor store and drugstore with a pharmacy.

Nebraskans for Research relies on the commitment and passion of individuals like the Allens to ensure that the state's citizens have access to lifesaving treatments developed through medical research.

The plaque presented to the Allens reads: In Appreciation for Your Many Years of Dedication and Diligence to Nebraskans for Research.



Georgene and Bob Allen with the plaque honoring their commitment to research

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*Nebraskans for Research is a not-for-profit state-wide organization.  
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## Stem Cell Research in the News

### **Burnham Institute Researchers Link Early Stem cell Mutation to Autism**

June 30, 2008

LA Jolla, California – (Business Wire)—In a breakthrough scientific study published today in the *Proceedings of the National Academy of Sciences*, scientists at the Burnham Institute for Medical Research have shown that neural stem cell development may be linked to Autism. The study demonstrated that mice lacking the myocyte enhancer factor 2C (MEF2C) protein in neural stem cells had smaller brains, fewer nerve cells and showed behaviors similar to those seen in humans with a form of autism known as Rett Syndrome.

This work represents the first direct link between a developmental disorder of neural stem cells and the subsequent onset of autism.

The Research team was led by Stuart A. Lipton, M.D., Ph.D., a clinical neurologist and Professor and Director of the Del E. Webb Neuroscience, Aging and Stem Cell Research Center at Burnham.

“These results give us a good hint of how to look at Rett Syndrome and potentially other forms of autism in humans,” said Dr. Lipton. “Having identified a mutation that causes this defect, we can track what happens. Perhaps we can correct it in a mouse, and if so, eventually correct it in humans.”

### **California Institute for Regenerative Medicine to fund stem cell research at Cedars-Sinai Heart Institute**

July 7, 2008

[www.innovations-report.de/html](http://www.innovations-report.de/html)

The California Institute for Regenerative Medicine (CIRM) has awarded a planning grant to the Cedars-Sinai Heart Institute to support its researchers in their study of regenerative stem cell-based approaches to heart attacks, congestive heart failure and pacing abnormalities.

The grant was awarded to Eduardo Marban, M.D., Ph.D., a world-renowned stem cell researcher and cardiologist who joined Cedars-Sinai last year as the founding director of its Heart Institute. Building on Cedars-Sinai's decades-long strengths in cardiology, cardiac surgery and cardiac imaging, the Cedars-Sinai Heart Institute integrates state of the art research in heart disease and prevention with one of the nation's highest-quality patient-care programs.

In studies scheduled to begin at Cedars-Sinai later this year, autologous (derived from patients themselves) stem cells will be used to treat heart attack and heart failure. Studies in these areas are advanced and are expected to provide clinical results within a few years. The goal is to have stem cells pro-

viding healthy new heart cells to replace those damaged by disease.

For the development of “biological pacemakers,” the researchers will be studying whether human embryonic stem cells can be engineered to become heart pacing cells that could be implanted to actually restore a heart's natural rhythm, even responding to varying demands – something artificial pacemakers can't do. The complex process of creating biological pacemakers appears feasible in laboratory work but needs to progress through years of development and preclinical trials before being approved for human studies.

### **Stem Cell Breakthrough for Lou Gehrig's Disease (ALS)**

August 2, 2008

[www.healthnews.com](http://www.healthnews.com) by Drucilla Dyess

A new technique for reprogramming cells has allowed scientists to grow neurons from cell samples donated by people suffering from Lou Gehrig's disease (ALS) that genetically match the bad cells in the spinal cords of ALS patients. This breakthrough may lead to an understanding of how the disease develops.

ALS, technically known as amyotrophic lateral sclerosis, is a progressive neurodegenerative disease that causes motor neurons in the brain and spinal cord to die, which can lead to paralysis or death. It is estimated that 30,000 people in the United States have the disease, according to the ALS Association.

Scientists at Harvard and Columbia universities have become the first to succeed in the laboratory creation of a supply of cells with the same genetic makeup as a patient with a specific disease. The same technique used for the creation of these cells can be used to study other genetic diseases in hopes of better understanding what causes these diseases and allow for the testing of new drugs to battle against them. The accomplishment of creating these cells has been a fundamental reason for performing stem cell research since its inception.

According to co-author Dr. Kevin Eggan of the Harvard Stem Cell Institute Eggan commented, “Since the cloning of Dolly the sheep and the first derivation of a human embryonic stem cell line by Jamie Thomson some 10 years ago, it's been the hope of scientists to generate stem cell lines that have the genes of a patient.” He went on to explain, “this really suggests that it's going to be possible to make these cells from patients suffering from other diseases.” Eggan noted that the research team plans to study the cells in the lab and compare them with cells of someone who doesn't have the disease next.

## Notes from the Executive Director by Victoria Kohout, Executive Director

We have had a busy few months at Nebraskans for Research.

Our annual tribute luncheon in April honoring Mr. Richard Holland was a success. We raised over \$50,000 and had 300 people in attendance. Mr. Holland gave an invigorating speech challenging all in attendance to defend and speak up for science and scientific progress. A special thank you to Jean Bell, Chairman of the 2008 Tribute Luncheon, for all of her hard work to make the event a success.

Dr. Harold & Beverly Maurer attended Bob & Georgene Allen's 50<sup>th</sup> wedding anniversary celebration where they presented the Allens a plaque honoring their service to Nebraskans for Research.

If you are interested in having a speaker from Nebraskans for Research give a presentation on stem cell research at your next Rotary, Kiwanis, or any other type of group meeting, please call the office at 402-390-2461 and we will help arrange a speaker.

Thank you for your involvement and support of Nebraskans for Research.

### Stem Cell Question & Answer

#### What are 'induced pluripotent cells' or iPS cells?

Induced pluripotent cells (iPS cells) are non-pluripotent cells that were engineered ('induced') to become pluripotent, that is, able to form all cell types of the body. In other words, a cell with a specialized function (for example a skin cell) was 'reprogrammed' to an unspecialized state similar to that of an embryonic stem cell. While iPS cells and embryonic stem cells share many characteristics that are not identical.

The generation of mouse iPS cells was reported in 2006, and the generation of human iPS cells at the end of 2007.

Currently, iPS cells are produced by inserting copies of three-four genes into specialized cells known to be important in embryonic stem cells using viruses. Different groups have used slightly different combination of genes. It is not completely understood how each of these genes functions to confer pluripotency and ongoing research is addressing this question.

The technology used to generate iPS cells holds great promise for creating patient and disease specific cell lines for research purposes. However, a great deal of work remains before these methods can be used to generate stem cells suitable for safe and effective therapies.

Source: International Society for Stem Cell Research

## Nebraska Coalition for Life Saving Cures / Nebraskans for Research by Julie Erickson, Registered Lobbyist

The time between legislative sessions, known as the interim, used to be a quiet time for lobbyists as we planned and organized for the next session of the Nebraska Legislature. It is that way no longer.

We are currently working with your organizations to develop a plan of action for this summer and fall and meeting with legislative candidates and getting a better sense of where they are on research issues. Instead of a formal legislative survey which has been done in the past, the one on one meetings actually give us a better sense of their positions.

If you have any information on candidates you know or are working for, please contact us. Additional information on candidate positions will be sent to all of the membership later this summer, and board members will be briefed on all activities in the near future.

The General Election in a Presidential Election Year is very different than the Primary or general election cycles in non presidential years. Not only is turnout heavily increased, but the people that are voting are not regular voters. With this kind of makeup anything can happen and results will be very dependent on the money that can be raised and how the campaign spends that money.

Although we cannot say with certainty that legislation will be introduced that changes research in Nebraska this next legislative session, the Presidential Election will likely have an effect on the issue at both the federal and state levels.

This interim and general election will be critical to research supporters. We will keep you updated as our efforts continue.

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