



# Research Tips

## University of Colorado Denver

Vice Chancellor for Research: RJ Traystman

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### Stimulus Funding Update (ARRA)

As of October 12, 2009, UCDenver submitted 574 ARRA and 24 non-ARRA grant proposals to NIH. Thus far 93 have been funded for a total of \$37,915,575.

### COMIRB

Education and on going training requirements for investigators and staff engaged in human subject research : What is a POI number? Why do I need it? How do I get one?

A Person of Interest (POI) number connects personnel who are not UCDenver employees to the UCDenver Human Resource PeopleSoft program. The new COMIRB database, InfoEd, pulls persons named on protocols from PeopleSoft. You obtain a POI number from the administrator of the PI's UCDenver Home Department Please call IT Help Desk (303-724-4357) to find out who to contact.

### NIH Announces Web Site for Approval of Human Embryonic Stem Cell Lines

The National Institutes of Health (NIH) has announced they are now accepting requests for human embryonic stem cell (hESC) lines to be approved for use in NIH-funded research. NIH Director Francis Collins, also announced the members of a new working group of the Advisory Committee to the Director (ACD), called the Working Group for Human Embryonic Stem Cell Eligibility Review. Requests for hESCs to be approved for use in NIH-funded research may be submitted through NIH Form 2890, which is available at: <http://stemcells.nih.gov/>. To read the NIH's announcement, please go to: <http://www.nih.gov/news/health/sep2009/od-21.htm>

### Dr. T's Corner



For those of you who may have missed it, this year's (2009) Nobel Prize in Physiology or Medicine was awarded on Oct. 5, 2009. The award winners are: Elizabeth H. Blackburn, PhD, from UCSF; Carol W. Greider, PhD from Johns Hopkins; and Jack W. Szostak, PhD, from Harvard. The award was given for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase. How chromosomes can be copied in a complete way during cell divisions and how they are protected against degradation is an important problem in biology. These three individuals have shown that the solution to this problem is found in the ends of the chromosomes - the telomeres - and in an enzyme that forms them - telomerase. The long, thread-like DNA molecules that carry our genes are packed into chromosomes, the telomeres being the caps on their ends. Blackburn and Szostak discovered that a unique DNA sequence in the telomeres protects the chromosome from degeneration. Greider and Blackburn identified telomerase, the enzyme that makes telomeres, and that they are built by telomerase. If the telomeres are shortened, cells age. Conversely, if telomerase activity is high, telomere length is maintained, and cellular senescence is delayed. This may be the case in cancer cells, which can be considered to have eternal life. Certain inherited diseases, in contrast, are characterized by a defective telomerase, resulting in damaged cells. The Nobel Prize awarded to Blackburn, Greider and Szostak recognizes the discovery of a fundamental mechanism in the cell, a discovery that has stimulated the development of new therapeutic strategies.

### Become a member of CCTSI

All faculty, trainees, post-doctoral fellows, staff or others currently using or planning to use Colorado Clinical and Translational Sciences Institute (CCTSI) resources, services, facilities, cores, training or funding MUST become members of CCTSI by November 3, 2009 in order to use these resources. Becoming a member is free, and will take less than 2 minutes. Go to the website, <http://cctsi.ucdenver.edu> and click on the "Become a Member" red button to fill out the simple member registration form. That is all that it will take and you will have access to a myriad of outstanding resources for clinical and translational research and training.

### OLAR: No Animal Orders Will be Received During National Meeting and Holiday Weeks

Due to staff shortages and short work weeks, in the following weeks OLAR will not be receiving animal orders from Routine Source Vendors. Please plan your experiments and animal orders accordingly.

Week of November 9  
Week of December 21

Week of November 23  
Week of December 28

## Research Corner

Michele Engel, PhD is an Assistant Professor in the Department of Integrative Biology at the Downtown Denver Campus. Her research focuses on understanding bioremediation of polycyclic aromatic hydrocarbons (PAHs) by ligninolytic fungi, such as oyster mushrooms. Many wood growing fungi secrete enzymes that degrade lignin and it has been proposed that these enzymes can act to break down toxic chemicals in the environment. While ligninolytic fungi have been shown to degrade PAHs, there have been conflicting reports regarding the role of secreted ligninolytic enzymes in the degradation process. Michelle is examining gene expression changes in fungi during PAH degradation. She hypothesizes that by characterizing genes with increased expression during PAH degradation, she will be able to identify additional enzymatic genes and pathways that are involved in the degradation process, which have not been identified by previous biochemical methods. In order for fungal biodegradation to become commercially viable, the process must be optimized, and this can only occur if we understand the enzymes involved in biodegradation. The eventual goal of this research is to develop better fungal bioremediators. Since exposure to PAHs induces stress response phenotypes in mushrooms, stress response genes will also be identified. Understanding stress response pathways in mushrooms is important to the food processing industries since browning of mushrooms makes them less desirable to consumers. The better our understanding of genes involved in stress responses, the more likely that the food industries will be able to develop storage conditions that will result in better product quality at market.



***Michele Engle, PhD***

## BIOSAFETY

The NIH Guidelines for Research Involving Recombinant DNA Molecules (NIH Guidelines; [http://oba.od.nih.gov/oba/rac/guidelines\\_02/NIH\\_Guidelines\\_Apr\\_02.htm](http://oba.od.nih.gov/oba/rac/guidelines_02/NIH_Guidelines_Apr_02.htm)) administered by the NIH Office of Biotechnology Activities (OBA) (<http://oba.od.nih.gov/oba/index.html>), apply to all research projects that involve recombinant DNA which are conducted at, or sponsored by an organization, which receives NIH support for recombinant DNA research. The regulatory oversight role of the UC Denver Institutional Biosafety Committee includes a variety of work with transgenic animal models. For the NIH-OBA FAQs on which experiments are covered and more information on what must be registered, reviewed and approved by the UC Denver Institutional Biosafety Committee in conjunction with IACUC review, please visit our website at <http://www.uchsc.edu/safety/BioSafety/InstBioSafCommittee.htm> or contact the Biosafety Office (biosafety.program@ucdenver.edu; 303-724-0235) for additional information and the appropriate forms.

## Office of Grants and Contracts

UCDenver faculty have received a significant number of awards funded by the American Recovery and Reinvestment Act (ARRA). These awards have unique reporting requirements in addition to customary sponsor award reports. PIs will receive an e-mail from the Office of Grants and Contracts every 90 days requesting updates on the number of new and retained jobs that result from the award along with a brief progress report. Thank you in advance for responding to these quarterly update requests required by federal law.

ARRA Reporting: In addition to the normal annual reporting requirements of Federal awards, there are reporting requirements that will need to be submitted quarterly. The following items will need to be submitted.

- Description of progress made during the quarter
- Number and types of jobs retained or created as a result of this award

This data is needed for both your efforts here at UC Denver and also all of your sub-awardees. The timeline is very tight - so we ask your help to be prepared to provide this data within the first few working days after the end of each calendar quarter.

## The Rederivation Program

The Transgenic and Gene Targeting Core (Core) is accelerating its rederivation program which is aimed at eradicating pathogens in our mouse research colony. Key factors in the Cores progress are the acquisition of new hardware, funded by an NIH grant, and the hiring of a second senior embryologist (October 1st, 2009). The new member of the Core team has extensive expertise in pronuclear injections of transgenes, mouse ES cell injections and all techniques relevant for our rederivation program. Starting October 1st, we will significantly increase our capacity to perform embryo manipulations. As of September 2009, the Core has approved 509 unique mouse lines for rederivation under a program sponsored by the Vice Chancellor of Research. The program consists of two independent steps, cryo-preservation and rederivation of lines. We have completed the cryo-preservation of 191 lines, and we are in the process of completing another 103 lines. 215 lines remain to be processed. This is a reminder that all PIs who have not contacted us to schedule rederivation of their lines should do so immediately. We have also implanted embryos of 47 cryo-preserved lines in our rederivation program. Due to the increased rederivation capacity owing to the hiring of a second embryologist, we expect to be able to implant embryos of 20 lines per week starting in October. At this rate, the Core will be able to complete the entire rederivation program by March 2010. The Core will continue to post updates on our progress in this newsletter. Furthermore, please watch for e-mails alerting you to townhall meetings about the rederivation program which are organized jointly by the Office of Laboratory Animal Research (OLAR) and the Core. Questions or concerns regarding the rederivation program should be sent to [makeamouse@ucdenver.edu](mailto:makeamouse@ucdenver.edu).