

THE UNIVERSITY OF TEXAS AT DALLAS
FY 06 REPORT OF ENDOWMENT USE:
ENDOWED CHAIRS/PROFESSORSHIPS

Date:

Endowment Name: Cecil H. and Ida Green Distinguished Chair in Systems
Biology Science #1
Chair Holder: A. Dean Sherry
Endowment No: 060074
FINS Account No: 525801

Administrator Name: A. Dean Sherry



Signature: _____ **Date:** ____ Oct 31, 2006 _____

Endowment Purpose/Criteria:

Attract, hire and retain outstanding faculty members whose research expertise lies at one of the interfaces between biomedical science and physical, mathematical, computational or engineering science, emphasizing in particular research that will create significant synergy with complementary research at UT Southwestern.

A restructuring of several existing endowments has been completed to support the mission of The Cecil and Ida Green Center for Systems Biology Science that has been newly created in order to align the legacy of Cecil and Ida Green with the emergent strategic priorities of The University of Texas at Dallas. The overarching goal of this restructuring is to establish in Dallas a world-class cohort of faculty and students in the new domain of integrated interdisciplinary biomedical research. This will be accomplished by combining the resources and talents of UTD and UT Southwestern under the support and thematic guidance of the two institutions' closely collaborating Green Centers.

Donor/Stakeholder:

Contact with Donor/Stakeholder during FY 06? ☐ Yes ☒ No ☐ NA

<u>FY 06 Revenue:</u>	\$95,021
<u>FY 06 Transfers</u>	\$
<u>FY 06 Expenditures:</u>	\$95,193
<u>FY 06 Ending</u>	\$46,186
<u>Balance</u>	

Brief Summary of Expenditures funded by the Endowment:

Endowment funds were used again this year for salary support for a part-time administrative assistant, a part-time faculty associate to help direct student research at UTD and to provide bridging funds for students and postdoctoral students needing temporary salary support between grants. Our administrative assistant, Deborah McGill, manages all grants & contract account balances, advises undergraduate biochemistry majors and chemistry graduate students, provides arrangements for foreign visitors and exchange scientists, and organizes all travel arrangements for Dr. Sherry and his students and postdocs. Ms. McGill has been invaluable in boasting the research productivity of our entire laboratory. Dr. Sherry also accepted a new challenge this year by accepting a position as Director of the Advanced Imaging Research Center (AIRC) at UT Southwestern. This new center provides an exciting environment for scientific collaborations between scientists at UT Dallas, UT Arlington and UT Southwestern Medical Center using state-of-the-art imaging technologies. This added responsibility requires that Dr. Sherry spend a good deal more time on the UT Southwestern campus and unfortunately less time with his students at UT Dallas (although many of them now come to the AIRC to do their research). Once again Endowment funds have helped solve this problem because they allowed me to hire Dr. Garry Kiefer as a part-time faculty associate to help maintain research continuity with my students at UT Dallas. These endowment funds are invaluable because they provide flexibility in enhancing our research program by providing funds that are not ordinarily available from other grant sources.

Chair Holder's message to donor: *(Based on donor feedback, they prefer concise reports. Two or three paragraphs; 2 pages maximum. Consider including how funds were used; major focus/ scope of work; awards/recognition received, etc.)*

Optional: Attach relevant articles and/or news releases

Calendar of Events (<i>Optional; include major conferences attended or funded by the endowment.</i>)		
Date	Location	Conference/Presentation
Feb 2006	Taos, New Mexico	*Keystone Symposium on <i>Toward Understanding Islet Biology</i> , Invited plenary speaker.
Apr 2006	Washington, DC	*National Institutes of Health Workshop on Imaging the Beta Cell, Invited speaker
Apr 2006	New York University	Department of Radiology, Invited seminar speaker
Apr 2006	Hunter College, New York City	Department of Chemistry, Invited seminar speaker
Sept 2006	University of Pennsylvania	*Symposium on Hyperpolarized ^{13}C , Invited speaker
Sept 2006	University of Pennsylvania	Diabetes Center, Invited seminar speaker
Oct 2006	Pocono Manor, Pennsylvania	*International Society of Magnetic Resonance in Medicine Workshop on Cancer Imaging, Invited speaker.
Oct 2006	University of Texas Southwestern Medical Center	Residents Research Forum speaker, Department of Radiology

Major Focus/Scope of Work:

Professor Sherry and his research group at UTD are developing novel responsive imaging agents that report on metabolism and physiology inside the human body using standard clinical MRI scanners. This past year, we made considerable progress in three areas: 1) mapping of tissue pH by MRI, 2) mapping of tissue glucose by MRI, and 3) imaging of liver glycogen using a new technique that we named glycoCEST. A paper on imaging extracellular pH of tumors appeared in Magnetic Resonance in Medicine a few months ago and we have continued exploring the possibility of using this same agent to image pH in other tissues. This year, we demonstrated that we can image ischemic regions of heart tissue (tissue lacking in oxygen) and release of insulin from pancreatic beta cells using our pH sensitive agent. This technology could have a major impact in diagnostic medicine one day so we will continue exploring the utility of such agents in detecting abnormal tissues within the human body. We have also chemically modified our original glucose sensor and are now in position to begin imaging the tissue distribution of this most important metabolite in live animals. Finally, we are most excited about a new discovery we made this year call glycoCEST imaging (an acronym for imaging the storage form of glucose in skeletal muscle and liver). This is an important because there is currently no routine way to measure liver glycogen in humans (short of a tissue biopsy) and there is considerable uncertainty about whether or not live glycogen is abnormally high or abnormally low in diabetic humans. If our glycoCEST technology can be demonstrated to work first in intact animals and later in humans, this will add considerably to our knowledge about how glucose is handled and stored in the diabetic state.

Awards/Recognition Received:

Professor Sherry continues to receive wide recognition for his scientific contributions in two areas. The first is development of novel imaging agents that sense and report on physiology and medicine using standard clinical MR devices and the second area is his contributions in using the stable isotopes ^{13}C and ^2H to measure metabolic fluxes in rodents and people. This year, he was invited to speak at four international conferences (denoted by an * in the above listing) and subjects ranging from novel imaging agents, to *in vivo* MR spectroscopy, to hyperpolarized ^{13}C as a metabolic tracer.

Endowment Administrator's Message to Donor (Optional):

Please attach the following documents that you would like to send to the Donor:

1. Copies of relevant written communication
2. Copies of news articles; promotional materials