BIOGRAPHICAL SKETCH

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NAME Lola M. Reid	**POSITION TITLE.** Professor
eRA COMMONS USER NAME Lola_Reid	

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE	YEAR(s)	FIELD OF STUDY
Heidelberg University, Germany	-----	1965-1966	German literature
University of North Carolina, Chapel Hill	B.A.	1969	Biology, Chemistry
University of North Carolina, Chapel Hill	PhD	1974	Neuroendocrinology
U.California-San Diego (with Gordon Sato and John Holland)	Postdoctoral Studies	1974-1977	Cell biology, virology
Jackson Laboratories, Bar Harbor Maine (with Kenneth Paigen)	Postdoctoral Studies	Summer, 1976	Genetics
Pasteur Institute, Paris, France (with F. Jacob)	Postdoctoral Studies	Fall,1976	Genetics, cell biology

NOTE: Biographical Sketch may not exceed 4 pages. Items A and B may not exceed 2 of the 4-page limit.

A. Employment Positions and Honors.

9/1/1977-12/1/1994 Faculty member (assistant, associate and then full professor) in Depart. Mol. Pharma. and Microbiology and Immunology, Albert Einstein College of Medicine, Bronx, NY. Member of Cancer and Liver Centers; director of Cell Culture Core of the Liver Center (9/1978-6/1994). Annual teaching to medical students in embryology, pharmacology and courses on molecular oncology, molecular mechanisms in cell differentiation, and matrix biology and chemistry.

12/1/1994-present Professor in Depart. of Cell and Molecular Physiology and Biomedical Engineering, and full member in Program in Molecular Biology and Biotechnology, the Cancer Center, the Center for Gastrointestinal and Biliary Disease Biology (CGIBD), Program in Studies on Extracellular Matrix, and in multiple training grants. Course lecturer: courses on physiology, cell biology, biochemistry, and biomedical engineering. Course director in physiology for medical students and in a two semester course ("From Genes to Tissues") on cell and molecular biology for biomedical engineers and mathematicians.

1978-present. Reviewer/ad hoc reviewer for NIH, ACS, and NSF study sections (biochemistry, cell biology, pathobiology, liver biology, liver and GI center grants).

1978-present Reviewer/editor for journals (e.g. JCB, JBC, Science, Hepatology, Cancer Research, Cell, Molecular Cell Biology, Nature.), book chapters, and books.

1980-present: member of American Society of Cell Biologists; 2003-present: member of ISSCR

1987-1993. Advisory committee for NASA Space agency on biological research in space

1987-2001. Advisory committee for Tuft's Medical School's GI Center Grant

1983-present. Formal, paid consultant to companies (e.g. Becton Dickenson, Collaborative Research, Genetics Therapy, Inc, Hana Biologics, Vertex Pharmaceuticals, Incara Pharmaceuticals, Vesta Therapeutics, Pfizer Pharmaceuticals.

12/94-9/00. Founding director of Core for Advanced Cell Technologies and Tissue Engineering (ACT Core) in CGIBD. Succeeded at competitive renewal for funding of the ACT Core (July, 2000)

HonorsCutter Lab Scholarship & honors student at UNC-G (1963-1965); Junior Year Abroad Scholarship to Germany (1965-1966); Honors student/graduated with high honors at UNC (1966-1968); teaching fellowship at UNC-CH (1969-1970); NIH pre-doctoral fellowship (1970-1974); NIH postdoctoral fellowship at UCSD in San Diego (1974-1977); Sinsheimer career development award at Albert Einstein in New York (1978-1982); NIH Career Development Award (1983-1989); American Cancer Society Executive Award (1988); Carl Vestling Lecturer (1991). Annually a lead speaker or a major speaker at numerous national and international conferences and on invited lecture tours through China, Japan, Israel, Europe, etc.

B.1. Representative Original Articles (25 published in the last 5 years)

Jefferson DM Clayton D, Darnell JE, Jr and Reid LM. Posttranscriptional modulation of gene expression by media conditions in cultured rat hepatocytes. *Mol Cell Biol* 4:1929-1934, 1984.

Muschel R, Khoury G, and Reid LM. Regulation of insulin mRNA abundance and adenylation: Dependence on hormones and matrix substrata. *Mol Cell Biol* 6:337-341, 1986.

Zvibel I, Halay E, and Reid LM.Heparin/hormonal regulation of autocrine growth factor mRNA synthesis and abundance: Relevance to clonal growth. *Mol Cell Biol* 11:108-116, 1991.

Sigal SH, et al. Characterization and enrichment of fetal rat hepatoblasts by immunoadsorption ("panning") and fluorescence activated cell sorting. *Hepatology* 19:999-1006, 1994.

Sigal SH, et al Partial hepatectomy-induced polyploidy attenuates hepatocyte replication and activates cell aging events. *Am.J. Physiol.* 276 (Gastrointest.Liver Physiol.) 39:G1260-G1272, 1999.

Kubota H and Reid LM. Clonogenic hepatoblasts, common precursors for hepatocytic and biliary lineages, are lacking classical major histocompatibility complex class I antigen.*PNAS USA* 97 (22):12132-12137, 2000

Kubota, H, Storm, R, and Reid LM. Variant forms of α-fetoprotein transcripts expressed in human hemopoietic progenitors. *J Biol Chem*. 277 (31): 27629-27635, 2002.

Liu, H and Reid LM. Citron kinase is a cell cycle-dependent protein involved in the control of hepatocyte mitosis and binucleation. *J Biol Chem*. 278 (4): 193-203, 2003.

Sicklick, J. et al. Hedgehog signaling in rodents and humans maintains resident hepatic progenitors throughout life. *Am J Physiol Gastrointest Liver Physiol* 290:G859-G870, 2005.

Schmelzer et al . Phenotype of pluripotent hepatic progenitors. *Stem Cells.24 (8): 1852-1858,* 2006

Turner et al. Human hepatoblast phenotype maintained by hyaluronan hydrogels*. J. Biomed. Biomaterials* (in press), 2007

Schmelzer et al. Human hepatic stem cells in livers from fetal and postnatal donors. *J. Exp. Med.* (*In Press*), 2007

Kubota H et al. Identification and characterization of vitamin A+storing cells in liver. *Stem Cells. (in press)* 2007

B.2. Representative Reviews/Books (8 published in the last 5 years**)**

Reid LM**,** et al A gradient of extracellular matrix in the space of Disse. *Hepatology* 15:1198-1203, 1992.

Sigal SH, et al The liver as a stem cell and lineage system. *Am J Physiol.* 263:G139-G148, 1992.

Zern MA and Reid LM, editors: ***Extracellular Matrix: Its Chemistry, Biology and Pathobiology***, Marcel Dekker, Inc., New York, NY. David van Theil, editor-in-chief. 1993.

Macdonald J, et al. Bioartificial Livers. In: ***Handbook on Bioartificial Organs****.* pp 254-289. 1999

Xu A, et al. Stem Cells, Lineage Biology and Liver. In: ***Principles of Tissue Engineering***, R. Lanza, R. Langer, and J Vacanti, editors, Lands Press, NY. pp. 559-598, 2000.

R Susick, et al Hepatic Progenitors and Strategies for Cell Therapies. *Ann.N.Y.Acad.Sci.* 944:398-401, 2001.

Macdonald JM, et al. Stem cells and liver lineage biology. In: ***Methods for Tissue Engineering***. R. Lanza, editor. Academic Press, NY. 2002.

McClelland R, Reid LM and Macdonald J. Tissue Engineering. In: ***Biomedical Engineering***. J. Enderle, S. Blanchard, and J. Bronzino, editors. Academic Press, NY. Pp.313-402, 2005.

Schmelzer E, et al. Hepatic Stem Cells and the Liver's Maturational Lineages. In: ***Adult (Tissue) Stem Cells: Biology and Applications****.* C Potten, editor. Dekker Publishers, London. 2006

Cheng, N. Yao, R. and Reid LM. Stem cell and maturational lineage biology. In: ***Principles of Tissue Engineering*****,** A. Attala, editor. Elseverier Press, San Diego. 2007 (in press)

McClelland R and Reid LM. Bioartificial Livers. In: ***Principles of Tissue Engineering***, A. Attala, editor. Elsevier Press, San Diego. 2007 (in press)

B.3. Patents/patent applications (of 29 U.S. Filings and more than 100 divisionals and International Patents)

Representative ones on rodent hepatic progenitors: *Isolated hepatocyte precursors*. Inventors: LM Reid and Maria Agelli. Filed 1991; *Method of isolating hepatic progenitors***.** Inventors: LM Reid, et al. Filed. 1993;. *Method of growing hepatic precursors*. Inventors: LM Reid, et al. Filed 1991.

Representative ones on human hepatic progenitors. *Human hepatic progenitors***.** Lola M. Reid, et al. Filed in 1999; *Human liver sources*. L Reid and E. LeCluyse, Filed 2000; *Compositions and Methods Useful for measuring Hepatitis C Viral Infections*. Ann Kwon, Randal Byrne, and Lola M. Reid, filed 2001*; Human hepatic stem cells.* L. Reid, et al. Filed 2002; *Hepatic stellate cell precursors*. IH. Kubota and LM Reid, filed 2005. *Matrix requirements for self-replication of hepatic stem cells. R. McClelland and L Reid, .filed 2006. Hyaluronan hydrogel complexe*s. W Turner and L. Reid, Filed February, 2007.

C. Research Support. List selected ongoing or completed (during the last three years) research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and your role (e.g. PI, Co-Investigator, Consultant) in the research project. Do not list award amounts or percent effort in projects.

Ongoing Research Support

No agency #. L.Reid (PI) 7/1/97 – 6//30/08
Vesta Therapeutics
Studies on Human Hepatic Progenitor Cells
The major goals of this project are 1) to develop improved cryopreservation methods for hepatic progenitor cell subpopulations of human liver cells, 2) to test whether hepatic stem cells will fully differentiate to mature liver cells, including tetraploid hepatocytes, if cultured in 3-dimensional (3-D) culture systems utilizing defined extracellular matrix components and serum-free, hormonally defined media (HDM), 3) assess whether EpCAM+ cells can be lineage restricted to endodermal fates other than liver.
Role: Principal Investigator

No agency #. L. Reid (PI) 5/1/07-4/30/09
Pfizer Pharmaceutical
Human Liver Model Systems for Drug Discovery
We are developing methods by which to utilize human liver stem cells to be expanded and secondarily differentiated to mature cells and placed into various culture formats as models for drug and toxicity testing.
Role: Principal Investigator

Troy Nagle (PI) 8/1/01 – 8/31/09
Whitaker Foundation
Biomedical Engineering for Functional Genomics
Development of educational and graduate student research program combining biomedical engineering and genetics, genomics, and tissue engineering. Dr. Reid is the course director for two courses entitled “From Genes to Tissues” that are the foundation of this program.
Role: Investigator

Completed Research Support

1-C06-RR14527 Eugene Orringer and Lola M Reid (Co-PIs) 10/1/00 – 12/31/05
National Center for Research Resources
Renovation of Glaxo Building at UNC-CH
These funds are being used to renovate the Glaxo building (in which Dr. Reid’s lab is located) including the establishment of a much needed back-up generator and new common equipment rooms for the building. The renovations are nearly complete.Over the fall, 2005, we are moving into the renovated space.
Role: Co-principal Investigator

03-SC-DOE-1017 L. Reid (PI of subcontract) 9/1/02 – 8/31/05
Primary award from Dept of Energy to Duke University (PI, Ed Hsu)
Subcontract from Duke Univ. to UNC-Chapel Hill
Imaging of Human Hepatic Stem Cells in Vivo
The primary objectives of this subcontract for the proposal is to develop efficient and biocompatible labeling protocols in which probes for imaging are introduced to progenitor cells.
Role on subcontract: Principal Investigator

J Macdonald (PI) 5/1/02 – 4/30/05
North Carolina Biotechnology Center
Metabolomics Facility

The development of a metabolomics facility for NMR and MRI analyses of cultured cells and tissue engineered cell models. Dr. Reid's lab will be using the facility to do NMR studies on human hepatic stem cells in three-dimensional culture systems and in bioreactors.
Role: Investigator

No agency number L. Reid (PI) 7/1/04 – 12/31/04
Industrial Technology Research Institute (ITRI), Taiwan
Stem Cell Biology & Bioartificial Organs
The training of visiting investigators in the research fields of: 1) human and rodent hepatic stem cell biology, 2) bioreactor designs and bioartificial livers. The long-term goal is to establish research collaborations between Taiwanese research teams and Dr. Reid's laboratory in the fields of stem cell biology and bioartificial organs.
Role: Principal Investigator

No agency number L. Reid (PI) 10/1/03 – 9/30/04
Vertex Pharmaceutical
Human Liver Cells in a Novel Coaxial Bioreactor
Investigators in Dr. Reid's lab and investigators at Vertex (research headed by Dr. Ann Kwong) have found that hepatitis C is a "lineage-dependent" virus, replicating in stem cells and maturing along with the host parenchymal cells. We are assessing whether differentiation of stem cells in a bioreactor will allow sufficient viral replication to yield a model system for hepatitis C and that can be used for drug testing for hepatitis C.
Role: Principal Investigator

No agency number L. Reid (PI) 9/1/03-8/31/04
Chinese Government Grant
Human Hepatic Stem Cell Compartment
A grant providing salary support and some supply funds for Lili Zhang, MD, to do studies on human hepatic stem cells in the laboratory of Dr. Lola Reid at UNC-CH.
Role: Principal Investigator

5-RO1-DK52851 L. Reid (PI) 6/24/98 – 5/31/03
NIH/NIDDK
Bioartificial Livers from Hepatic Progenitor Cells
The major goal is to use purified rodent hepatic stem cells and early progenitors to create a bioartificial liver using commercially available bioreactors.
Role: Principal Investigator

Pending
NIH/NIBIB L. Reid (PI) 7/1/07-6/30/12
BRP Grant: Development of "open bioreactors"