BIOGRAPHICAL SKETCH

NAME	POSITION TITLE
McLaren, Gordon D.	Professor
eRA COMMONS USER NAME gmclaren	

EDUCATION/TRAINING *(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)*

INSTITUTION AND LOCATION	DEGREE *(if applicable)*	YEAR(s)	FIELD OF STUDY
University of Missouri, Columbia, MO	B.A.	1965	Chemistry
Stanford University School of Medicine, Stanford, CA	M.D.	1970	Medicine
Mary Imogene Bassett Hospital, Cooperstown, NY	Internship	1970-71	Internal Medicine
University Hospitals of Cleveland, Cleveland, OH	Residency	1973-74	Internal Medicine
University Hospitals of Cleveland, Cleveland, OH	Fellowship	1974-75	Hematology

A. Personal Statement

I am a hematologist and professor at the University of California, Irvine and the Veterans Affairs Long Beach Healthcare System, Long Beach, CA. I have been involved with research on iron metabolism for over 30 years, including investigations of the normal regulation of intestinal iron absorption in humans and the altered regulation in patients with hemochromatosis. I am Vice-Chair for 2011 and Chair for 2012 of the Scientific Committee on Iron and Heme for the American Society Hematology. He served as the Medical Director for the UC Irvine Field Center of the NIH-funded Hemochromatosis and Iron Overload Screening (HEIRS) Study that enrolled 20,400 participants at the University of California, Irvine. My experience with iron chelation therapies includes participation in the phase I/2, dose-escalation trial of deferasirox (Exjade) that was conducted for the treatment of iron overload in *HFE*-related hereditary hemochromatosis. For this SBIR research, I will assist with the animal studies and will serve as Medical Director for the proposed clinical trial to enroll patients, supervise clinical data monitoring, review laboratory test evaluation, and conduct safety and efficacy assessment.

B. Positions and Honors

Positions and Employment

1971-1973 Commissioned Officer, US Public Health Service, Nutritional Biochemistry Section, Centers for Disease Control and Prevention, Atlanta, GA
1975-1977 NIH Hematology Trainee and Fellow, Division of Hematology and Oncology, Department of Medicine, Case Western Reserve University School of Medicine, Cleveland, OH
1976-1977 Senior Instructor, Case Western Reserve University School of Medicine, Cleveland, OH
1977-1986 Assistant Professor, Case Western Reserve University School of Medicine, Cleveland, OH
1986-1990 Associate Professor, Univ. of North Dakota School of Medicine, Grand Forks and Fargo, ND
1986-1988 Physician, Oncology/Hematology Section, Medical Service, VA Medical Center, Fargo, ND
1988-1997 Chief, Division of Hematology, Department of Medicine, University of North Dakota School of Medicine, Grand Forks and Fargo, ND; Chief, Divisions of Hematology & Oncology, 1993-1997
1988-1998 Chief, Oncology/Hematology Section, Medical Service, VA Medical Center, Fargo, ND
1990-1998 Professor, University of North Dakota School of Medicine, Grand Forks and Fargo, ND
1995 Visiting Scientist, Queensland Institute of Medical Research, Brisbane, Australia
1997-1998 Chief, Division of Clinical Research, Department of Medicine, University of North Dakota School of Medicine, Grand Forks and Fargo, ND

Positions and Employment, cont.

1998-2007 Associate Professor of Medicine, Hematology/Oncology Division, University of California, Irvine
1998-present Physician, Hematology/Oncology Section, VA Long Beach Healthcare System, Long Beach, CA
2007-present Professor of Medicine, Hematology/Oncology Division, University of California, Irvine, CA

Other Experience and Professional Memberships

1977-1986 Director, Special Hematology Laboratory, University Hospitals of Cleveland, Cleveland, OH
1985-present Fellow, American College of Physicians
1999 Am. Heart Association, Great America Research Study Group 4 (Cell, Transport & Metabolism)
1999 NIH/NIDDK Review Panel "Biology of Iron Overload and New Approaches to Therapy"
2005 NIH/NIDDK Special Emphasis Panel "Centers of Excellence in Molecular Hematology"
2006 NIH/NIDDK Special Review Panel "Pilot/Feasibility Grants in Kidney or Urologic Diseases"
2008 NIH/NHLBI Special Emphasis Panel "Thrombosis and Erythrocyte Biology"
2008 NHLBI, Sickle Cell Disease Clinical Research Network, Additional Sites Review Group
2009 Chair, CDC/NCHM Review Panel "Diagnosis and Treatment of Hereditary Hemochromatosis"
2009 Chair, Iron Overload Education Session, American Society of Hematology Annual Meeting
2010 NIH/NIDDK Special Emphasis Panel "Centers of Excellence in Molecular Hematology"
2011 Vice-Chair, American Society of Hematology, Scientific Committee on Iron and Heme (1-year term, to be followed by a subsequent 1-year term as Chair in 2012)

Honors and Awards

1973 U.S. Public Health Service Commendation Medal
1979-80 British-American Research Fellow of the American Heart Association and the British Heart Foundation, Department of Haematology, Welsh National School of Medicine, Cardiff, UK
1984 Wellcome Research Travel Grant, University of Wales College of Medicine, Cardiff, UK
1998 Distinguished Professor of the Year, Department of Medicine, University of North Dakota School of Medicine, Fargo and Grand Forks, ND

C. Selected Peer-reviewed Publications

Most relevant to the current application

1. Adams PC, Reboussin DM, Barton JC, McLaren CE, Eckfeldt JH, **McLaren GD**, Dawkins FW, Acton RT, Harris EL, Gordeuk VR, Leiendecker-Foster C, Speechley M, Snivley BM, Holup JL, Thomson E, Sholinsky P for the Hemochromatosis and Iron Overload Screening Study Research Investigators: Hemochromatosis and iron overload screening in a racially diverse population. N Engl J Med, 2005; 28: 1769-78. PMID: 15858186.
2. **McLaren GD**, McLaren CE, Adams PC, Barton JC, Reboussin DM, Gordeuk VR, Acton RT, Harris EL, Speechley MR, Sholinsky P, Dawkins FW, Snively BM, Vogt TM, Eckfeldt JH: Clinical manifestations of hemochromatosis in *HFE* C282Y homozygotes identified by screening. Can J Gastroenterol, 2008; 22: 923-30. PMID: 19018338. **PMCID: PMC2661195**.
3. **McLaren GD**, Gordeuk VR. Hereditary hemochromatosis: insights from the Hemochromatosis and Iron Overload Screening (HEIRS) Study. Hematology Am Soc Hematol Educ Program 2009: 195-206. PMID: 20008199.
4. McLaren CE, Barton JC, Eckfeldt JH, **McLaren GD**, Acton RT, Adams PC, Henkin LF, Gordeuk VR, Vulpe CD, Harris EL, Harrison BW, Reiss JA, Snively BM. Heritability of serum iron measures in the Hemochromatosis and Iron Overload Screening (HEIRS) family study. Am J Hematol, 2010; 85: 101-5. PMID: 20095037.
5. McLaren CE, Garner CP, Constantine CC, McLachlan S, Vulpe CD, Snively BM, Gordeuk VR, Nickerson DA, Cook JD, Leiendecker-Foster C, Beckman KB, Eckfeldt JH, Barcellos LF, Murray JA, Adams PC, Acton RT, Killeen AA, **McLaren GD**: Genome-wide association study identifies genetic loci associated with iron deficiency. PLoS ONE 2011; 6:e17390. PMID: 21483845.

Additional recent publications of importance to the field (in chronological order)

1. **McLaren GD**, Nathanson MH, Jacobs A, Trevett D, Thomson W: Regulation of intestinal iron absorption and mucosal iron kinetics in hereditary hemochromatosis. J Lab Clin Med, 1991; 117: 390-401. PMID: 2019794.
2. Anderson GJ, Murphy TL, Evans BA, Halliday JW, **McLaren GD**: Mapping the gene for sex-linked anemia: an inherited defect of intestinal iron absorption in the mouse. Genomics, 1998; 48: 34-39. PMID: 9503013.

3. McLaren CE, Li K-T, Gordeuk VR, Hasselblad V, **McLaren GD**: Relationship between transferrin saturation and iron stores in the African-American and U.S. Caucasian populations: analysis of data from the Third N**a**tional Health and Nutrition Examination Survey. Blood, 2001; 98: 2345-2351. PMID: 11588029.
4. Fr**a**zer DM, Inglis HR, Wilkins SJ, Millard KN, Turner TM, **McLaren GD**, McKie AT, Vulpe CD, Anderson GJ: Delayed hepcidin response explains the lag period in iron absorption following a stimulus to increase erythropoiesis. Gut, 2004; 53: 1509-1515. PMID: 15361505. **PMCID: PMC1774251.**
5. Wilkins SJ, Frazer DM, Millard KN, **McLaren GD**, Anderson GJ: Iron metabolism in the hemoglobin deficit mouse: correlation of diferric transferrin with hepcidin expression. Blood, 2006; 107: 1659-1664. PMID: 16239432. **PMCID: PMC1895407.**
6. Acton RT, Snively BM, Barton JC, McLaren CE, Adams PC, Rich SS, Eckfeldt JH, Press RD, Sholinsky P, Leiendecker-Foster C., **McLaren GD**, Speechley MR, Harris EL, Dawkins FW, Gordeuk VR: A genome-wide linkage scan for iron phenotype quantitative trait loci: the HEIRS family study. Clin Genet, 2007; 71: 518-529. PMID: 17539901.
7. Rivers CA, Barton JC, Gordeuk VR, Acton RT, Speechley MR, Snively BM, Leiendecker-Foster C, Press RD, Adams PC, **McLaren GD**, Dawkins FW, McLaren, CE, Reboussin, DM: Association of ferroportin Q248H polymorphism with elevated levels of serum ferritin in African Americans in the Hemochromatosis and Iron Overload Screening (HEIRS) Study. Blood Cells Mol Dis, 2007; 38: 247-252. PMID: 17276706.
8. Steiner M, Leiendecker-Foster C, **McLaren, GD**, Snively BM, McLaren CE, Adams PC, Eckfeldt JH: *HFE* gene splice site mutation IVS5+1 G/A in North American Vietnamese with and without phenotypic evidence of iron overload**.** Transl Res, 2007; 149: 92-95. PMID: 17240320.
9. Wang X, Leiendecker-Foster C, Acton RT, Barton JC, McLaren CE, **McLaren GD**, Gordeuk VR, Eckfeldt JH: Heme carrier protein 1 (HCP1) genetic variants in the Hemochromatosis and Iron Overload Screening (HEIRS) Study participants. Blood Cells Mol Dis, 2009; 42: 150-4. PMID: 19176287. **PMCID:PMC2710880**.
10. Mainous AG 3rd, Diaz VA, Everett CJ, Knoll ME, Hulihan MM, Grant AM, McLaren CE, **McLaren GD**: IRon Overload screeNing tool (IRON): Development of a tool to guide screening in primary care. Am J Hematol , 2011 May 17. Doi: 10.1002/ajh.22082. [Epu ahead of print]. PMID: 2180355.

D. Research Support

<u>Ongoing Research Support</u>

R01 HL083328 McLaren, CE (PI)
8/14/06 – 7/31/12
Iron Status: A Pathway Analysis in Multiple Ethnicities
The goal of this study is to determine single nucleotide polymorphisms (SNPs) and haplotypes in key genes involved in systemic iron metabolism pathways, to identify potential cases of iron deficiency and controls, and to study the association between the presence of iron deficiency and haplotypes in the selected candidate genes.
Role in Project: Co-Investigator

NHMRC (Australia) Anderson (PI) 1/1/10 – 12/31/12
Haemolytic Anaemia and the Control of Body Iron Homeostasis
This project is designed to increase understanding of mechanisms controlling the flux of iron between body compartments, which may lead to improved therapy of disordered iron homeostasis in conditions such as the thalassaemias and sideroblastic anaemia. We will use genetically-altered mouse models to define the relationships between hepcidin levels and iron recycling through the RE system *in vivo* and to determine whether intestinal iron absorption and RE cell iron release can be regulated independently.
Role in Project: Associate Investigator

<u>Completed Research Support</u>
Department of Veterans Affairs McLaren, GD (PI) 10/1/00 – 9/30/07
Prevalence of Iron Overload and Frequency of the Hemochromatosis Gene
The goals of this project are (1) to perform multi-site screening for iron overload at a Veterans Affairs Medical Center and determine the frequency of the gene for hemochromatosis among veterans, (2) to examine the relationship between genotype and phenotypic expression in veterans with hemochromatosis, and (3) to develop guidelines for the use of transferrin saturation and related tests in primary care-based screening to detect individuals at risk for iron overload.
Role in Project: Principal Investigator

NIH/NIDDK Janghorbani (PI) 9/15/00-9/14/03
A Strategy to Prevent Iron Overload in Hemochromatosis
This Small Business Innovation Research (SBIR) project is a pilot study of inhibitors of intestinal iron absorption as an effective strategy for prevention of excessive absorption in persons with hereditary hemochromatosis who are at risk for development of iron overload.
Role in Project: Co-Principal Investigator

N02-HC-05190 McLaren, CE (PI) 1/31/00 – 1/31/07
UCI Field Center: Screening for Iron Overload and Hereditary Hemochromatosis
In this project, we will serve as a Field Center to screen 20,000 primary care patients for iron overload and hereditary hemochromatosis at the ambulatory care clinics of the University of California, Irvine. The primary goal of the Field Center is to contribute to the epidemiologic study of iron overload and hereditary hemochromatosis, in a multi-center, multiethnic, primary care-based sample.
Role in Project: Co-Principal Investigator