

CURRICULUM VITAE

DATE PREPARED: October 24, 2007

I: PERSONAL DATA

A. Name: Evan Dale Abel
B. Date of Birth:
C. Place of Birth:
D. Citizenship: U.S.A.

II. EDUCATION

1980 Wolmers Boys School (Premedical)
1985 MB. BS Faculty of Medical Sciences, University of the West Indies
1991 DPhil (Medicine) Clinical Medicine Faculty, University of Oxford

Postdoctoral Training:

Internship and Residencies:

1985-1986 Pre-registration House officer, U.W.I., Jamaica
1988-1989 Intern in Medicine, McGaw Medical Center,
Northwestern University Medical School (NUMS)
Chicago, IL
1989-1990 Junior Resident, Internal Medicine, McGaw Medical Center,
NUMS, Chicago, IL
1990-1991 Senior Resident, Internal Medicine, McGaw Medical Center,
NUMS, Chicago, IL
1991-1992 Chief Medical Resident, Internal Medicine, VA Lakeside
Medical Center, NUMS, Chicago, IL

Clinical and Research Fellowships:

1986-1988 Rhodes Scholar and Clinical Research Fellow to Professor John G. Ledingham, Nuffield
Department of Medicine, University of Oxford, England. Research funded by the British Heart
Foundation.
1992-1993 Clinical Fellow in Endocrinology, Harvard Medical School, Beth
Israel Hospital, Boston, MA
1993-1995 Research Fellow in Endocrinology, Harvard Medical School, Beth
Israel Hospital, Boston, MA

II. EDUCATION contd.

Licensure and Certification:

1980	University of Cambridge Advanced Level Examinations
1987	Membership of the Royal College of Physicians (Part 1)
1987	Medical Council of Jamaica
1987	Educational Commission for Foreign Medical Graduates
1987	General Medical Council of the United Kingdom
1990	State of Illinois Permanent License:
1991	American Board of Internal Medicine - Internal Medicine (Re-Certified 2001)
1992	Commonwealth of Massachusetts License,
1995.	American Board of Internal Medicine - Endocrinology and Metabolism (Re-Certified 2001)
2001	State of Utah License

III. PROFESSIONAL EXPERIENCE

Academic Appointments:

1991-1992	Instructor of Clinical Medicine, Department of Medicine, Northwestern University Medical School, Chicago, IL
1992-1993	Clinical Fellow in Medicine, Harvard Medical School, Beth Israel Hospital, Brigham and Women's Hospital, Joslin Diabetes Center, Boston MA
1993-1995	Research Fellow in Medicine, Harvard Medical School, Beth Israel Hospital, Boston, MA
1995-2000	Instructor in Medicine, Harvard Medical School
2000	Assistant Professor of Medicine, Harvard Medical School
2000-2004	Assistant Professor of Internal Medicine, University of Utah School of Medicine
2000	Investigator- Program in Human Molecular Biology and Genetics, University of Utah School of Medicine
2001	Visiting Professor Tropical Metabolism Research Institute, University of the West Indies
2001-2004	Adjunct Assistant Professor, Department of Biochemistry, University of Utah School of Medicine
2004	Associate Professor of Medicine and Biochemistry, University of Utah School of Medicine

Hospital Appointments:

1987-1988	Honorary Senior House Officer in General Medicine Central Oxford Hospitals, Oxford, England
1991-1992	Attending Physician, VA Lakeside Medical Center, Chicago, IL
1992-2000	Assistant in Medicine, McLean Hospital, Belmont, MA
1995-2000	Associate in Medicine, Beth Israel Deaconess Medical Center, Boston MA
1997-2000	Associate Physician (Affiliate Staff) Brigham and Women's Hospital, Boston, MA.
2000	Attending Physician University Utah Hospitals and Clinics and Salt Lake Veterans Hospital

III. PROFESSIONAL EXPERIENCE contd.

Hospital and Health Care Organization Service Responsibilities:

1991-1992 Attending Physician, Medical Service, VA Lakeside Medical Center (VALMC), Chicago
1991-1992 Attending Physician, General Medicine Clinic, VALMC Chicago
1995-2000 Attending Physician, Endocrinology and Diabetes, Internal Medicine, Beth Israel Deaconess Medical Center, Boston
1996-2000 Attending Endocrinologist, Harvard Vanguard Medical Associates
2001 Staff Physician University of Utah Hospitals and Clinics
2001 Attending Physician Salt Lake Veterans Hospital
2007 Chief Division of Endocrinology and Metabolism, University of Utah School of Medicine

Scientific Committees

1996-2000 Scientific Advisory Committee, General Clinical Research Center, Beth Israel Deaconess Medical Center
2001- Steering Committee Animal Models of Diabetes Complications Consortium (NIH)
2002-3 Grant Review Committee American Heart Association Western Consortium, DDK-B Study Section (NIH/NIDDK) –Ad Hoc
2002- Molecular and Cellular Endocrinology Study Section (NIH/NIDDK) – Ad Hoc
2003- Regular member DDK-B Study Section
2004- Reviewer – Swiss National Science Foundation, Health Research Board of Ireland.
2005- Member, Review Panel for Research Training Fellowships for Medical Students program of the Howard Hughes Medical Institute
2006- Member Steering Committee of the Animal Models of Diabetes Complications Consortium-Chair Cardiovascular Subcommittee.
2007- Scientific Advisory Committee, Sarnoff Foundation

Editorial Boards:

1999-2004 Journal of Biological Chemistry - Reviewer,
1999- Diabetes - Reviewer
2001- Endocrinology - Reviewer
2002- American Journal of Physiology –Reviewer
2002- Circulation - Reviewer
2002- Journal of Clinical Investigation – Reviewer
2004- Journal of Biological Chemistry - Editorial Board Member
2004- New England Journal of Medicine – Reviewer
2005- Proceedings of the National Academy of Sciences – Reviewer
2005- Diabetologia - Reviewer
2006- Nature Medicine - Reviewer

Research Awards:

Current: (Annual Direct Costs)

2003-2007 American Heart Association Established Investigator Award (**PI**) (\$100,000)
“ Glucose Transport, Fatty acid Utilization and the Diabetic Cardiomyopathy”
2003-2008 NHLBI RO1 HL73167 (**PI**) (\$250,000)
“Insulin Resistance and Cardiac Dysfunction in Obesity”
2004-2008 NHLBI/NIDDK RO1 HL/DK70070-01 (**PI**) (\$250,000)

“ Insulin Signaling and the Heart in Diabetes”

2004-2008 NHLBI RO1 HL 074259-01 (**Subcontract**) (\$19,792)

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Research Awards contd.:

2005-2007 NIDDK R21 DK073590-01 (PI) (\$150,000)
“Targeting Antioxidant Therapy to Cardiac Mitochondria”

2006-2011 NHLBI UO1 HL087947 Abel (PI) (\$250,000)
“Modeling Diabetic Cardiomyopathy and Microangiopathy
in the Mouse”

2006-2008 Juvenile Diabetes Research Foundation (**PI**) (\$200,000)
“Impact of Type 1 Diabetes on the Mitochondrial Proteome”

2006-2008 Juvenile Diabetes Research Foundation (**PI**) (200,000)
“A Novel Angiogenic Factor for Treating Microvascular
Complications of Type 1 Diabetes Mellitus”

Mentored Awards to Trainees

2006-2008 American Heart Association – Post Doctoral Training Fellowship Award to Sihem
Boudina

2006 American Heart Association Medical Student Research Fellowship to Nicole Wilde

2007-2009 American Heart Association Post-Doctoral Fellowship to Adam R. Wende

Prior: (Total Grant Award [Direct Costs])

2001-2006 NIDDK UO1HL70525 Co-(**PI**) (\$2.5 Million)
“ Mouse Models of Diabetic Cardiovascular Complications”

2002-2004 NIDDK RO1 DK62341 (**Subcontract**). (\$16,905)

2000-2003 American Diabetes Association **PI** (\$300,000)
“ Insulin Signaling and Glucose Metabolism in the Myocardium of Insulin-Resistant
Mice.”

2000-2003 NIDDK RO3 DK58073 PI (\$100,000)
“ Pathophysiological Consequences of Increased GLUT4 Expression in the
heart”

1997-2003 NIDDK KO8 02495 **PI** (\$536,650)
"In Vivo Analysis of Thyroid Hormone action"

1999-2000 Harvard Medical School’s Center of Excellence in Women’s Health Award. **Co-PI**
(\$45,000)
“ Gender Differences in the Outcome of Myocardial Ischemia in
Diabetics: The role of cardiac glucose utilization”

1998-2000 NHLBI R21 62886 **PI** (\$200,000)
"Analysis of the Role of GLUT4 in the Pathogenesis of Diabetic
Cardiomyopathy "

1998-1999 Thyroid Research Advisory Council **PI** (\$59,600)
"Development and Analysis of a Mouse Model of Resistance to
Thyroid Hormone"

1996-1998 Boston Obesity Nutrition Research Center, Pilot Project Grant **PI**
(\$25,000).

1997 (\$2,500) "Analysis of the Impact of Adipose Tissue Glucose Transport on Body weight, Nutrient Partitioning and Glucose Tolerance"
Endocrine Society Student Research Fellowship (Mentor) PI

"Transgenic Analysis of a Naturally Occurring Mutation of the Thyroid Hormone Receptor which Causes Selective Pituitary Resistance to Thyroid Hormone"

Research Awards contd.:

1996-1997	Eleanor and Miles Shore, 50th Anniversary Scholars in Medicine Fellowship - Harvard Medical School PI (\$25,000) "In vivo Analysis of Thyroid Hormone Action"
1995-1997	Research Supplement for Underrepresented Minority, NIDDK Co-PI (\$67,825) "Thyroid Hormone Action in the Pituitary"
1993-1996	Robert Wood Johnson Foundation, Minority Medical Faculty Development Award. PI (\$315,506) "Tissue Specific Ablation of GLUT4 using Cre-Recombinase LoxP Mediated Gene Targeting"

Prior Mentored Awards to Trainees:

2004-2006	Juvenile Diabetes Research Foundation – Post-Doctoral Fellowship to Sihem Boudina
2004-2007	American Diabetes Association – Physician Scientist Training Award to Brian T. O’Neill
2005-2006	American Heart Association –Post –Doctoral Fellowship to Vlad Zaha
2004	Endocrine Society Summer Student Fellowship to Eric Palfreyman
2006	Endocrine Society Summer Student Fellowship to Jordan Wright

IV. SCHOLASTIC HONORS

1980	Jamaica Scholarship
1980	University of the West Indies Open Scholarship
1981-1982	U.W.I. subject medals for: Anatomy, Physiology, Biochemistry, and Community-Health (First in class)
1982	Walter Harper Prize for Anatomy
1983	May and Baker Prize in Pharmacology
1983	Governor General's Award for Young Scientists (Jamaica Society of Scientists and Technologists)
1984	Wells Elliot Gold Medal for Virology
1985	U.W.I. Clinical Medal (First in Clinical Class)
1985	U.W.I. Silver Medal for Surgery
1985	Ludlow Murcott Moodie Prize for Clinical Medicine
1985	Alex Henderson Prize for Clinical Medicine
1985	E. V. Ellington Prize for Obstetrics and Gynecology
1985	May and Baker Prize in Social and Preventive Medicine
1985	Bachelor of Medicine, Bachelor of Surgery (MB.BS) Honors with Distinction
1986	Rhodes Scholarship (Jamaica)
1991	Webster Award for best overall performance by a Senior Medical Resident. Northwestern University McGaw Medical Center.
1991	Alpha Omega Alpha Honor Medical Society
1992	Robert Wood Johnson Foundation Minority Medical Faculty Development Award
1996	Eleanor and Miles Shore, 50th Anniversary Scholars in Medicine Fellowship - Harvard Medical School
1997	NIDDK KO8 02495
1997	Boston Obesity Nutrition Research Center, Pilot Study Investigator
1997	Endocrine Society Student Research Fellowship (Mentor)
1998	Thyroid Research Advisory Council Award
1998	NHLBI R21 62886
1998	American Diabetes Association Travel Award
1999	HMS Class of 2002, Excellence in Teaching Award
2000	American Diabetes Association Research Award

2000 NIDDK RO3 DK58073,
2001 Van Meter Award, American Thyroid Association
2001 Astra Zeneca David W. Haack Memorial Award in Cardiovascular Research
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Scholastic Honors contd.:

2002 William Odell Young Investigator Award – Dept. of Medicine University of Utah
2003 Established Investigator –American Heart Association, NHLBI RO1HL73167
2004 Heart and Stroke/Richard Lewar Centre of Excellence Distinguished Visiting Professor, University
of Toronto.
2004 Juvenile Diabetes Foundation Post-Doctoral Research Fellowship
(Mentor), Endocrine Society Student Research Fellowship (Mentor), American Diabetes
Association Physician Scientist Training Program (Mentor), NHLBI RO1HL70070
2004 Member - American Society for Clinical Investigation
2005 American Heart Association Post Doctoral Research Fellowship
(Mentor), NIDDK R21 DK073590
2006 American Heart Association Post Doctoral Research Fellowship
(Mentor), Endocrine Society Student Research Fellowship (Mentor)
Juvenile Diabetes Foundation Innovative Partnerships and Novel
Therapeutics Initiative Awards, NHLBI U01 HL087947
2007 Josie Johnson Memorial Endowed Professorship in Molecular
Biology

V. ADMINISTRATIVE EXPERIENCE

Major Administrative Positions:

- 1991-1992 Chief Medical Resident, Internal Medicine, VA Lakeside Medical Center, NUMS, Chicago, IL
- 1996-2000 Associate Director Endocrine Fellowship Training Program, Beth Israel-Deaconess Medical Center
- 2006-2007-2007- Director of Medical Student Research, University of Utah
- 2007- Board of Directors Society for Heart and Vascular Metabolism
- 2007- Chief –Division of Endocrinology Metabolism and Diabetes, University of Utah School of Medicine

Major Committee Assignments:

- 1982-1984 Medical Faculty Executive Committee, U.W.I. (Student Representative)
- 1982-1984 Curriculum Committee U.W.I. Participant in the 4th PAHO/WHO Conference on Medical Education, Kingston, Jamaica 1984
- 1987-1988 Chairman, Oxford University Caribbean Society
- 1991-1992 Medical Executive Committee (Resident's Section) NUMS, Chicago, IL
- 1996-2000 Scientific Advisory Committee, General Clinical Research Center, Beth Israel Deaconess Medical Center
- 2008- Steering Committee Animal Models of Diabetes Complications Consortium (NIH)
- 2002- Grant Review Committee American Heart Association Western Consortium, DDK-B Study section (NIH/NIDDK)
- 2003- Regular Member, DDK B Study section (NIH/NIDDK)
- 2003-4 Endocrinology Study Section (NIH/NIDDK) – Ad Hoc
- 2004- Minority Affairs Committee of the Endocrine Society
- 2004- Search Committee for Chair Department of Physiology, University of Utah School of Medicine
- 2004- Co-Chair Planning Committee, Network of Minority Research Investigators (NIDDK), Workshop.
- 2004- University of Utah, Funding Incentive Seed Grant Program Committee
- 2004- Admissions Committee, Molecular Biology Graduate Program, University of Utah
- 2004- Joint Recruiting Committee, Molecular Biology and Biological Chemistry Graduate Programs, University of Utah
- 2004- Tenure Advisory Committee, Department of Internal Medicine, University of Utah School of Medicine
- 2005- Graduate Advisory Committee, Biological Chemistry Graduate Program, University of Utah
- 2005-2006 Chair Planning Committee, Network of Minority Investigators Workshop NIDDK
- 2005- Member Student Advising Committee –Biological Chemistry Graduate Program, University of Utah
- 2006- Research Affairs Committee – Endocrine Society

VI/VII. PROFESSIONAL/UNIVERSITY COMMUNITY ACTIVITIES

(1) Recruiting and interviewing MD PhD applicants and PhD applicants to the Molecular Biology and Biological Chemistry Graduate Programs. (2) Mentor for under-represented minority pre-medical students, through the LEAP and UROP Programs. (3) Mentor AHA Summer Student Research Program

VIII. MEMBERSHIP IN PROFESSIONAL SOCIETIES:

1986	Rhodes Scholar
1989-1992	Associate American College of Physicians
1992	Member American College of Physicians
1992-2000	Member American Federation for Clinical Research
1992-1996	Member American Medical Association
1992-	Member Association of American Rhodes Scholars
1993-	Member American Diabetes Association
1993-1996	Associate Member Endocrine Society
1994-	Member American Association for the Advancement of Science
1996-	Member Endocrine Society
1999-	Member American Heart Association - Council on Basic Cardiovascular Sciences
2004	American Society for Clinical Investigation
2004	Society for Heart and Vascular Metabolism
2005	International Society for Heart Research

IX. TEACHING RESPONSIBILITIES/ASSIGNMENTS

A. Courses taught in the past 5 years.

University of Utah School of Medicine

- 2001- Preceptor American Heart Association Western States Affiliate undergraduate summer research program.
- 2001- Teaching Attending General Medicine: 6 Residents, 3-4 Medical Students. Contact/Preparation time: 30 hours
- 2002- Teaching Attending Endocrinology consultation service. 1 Fellow/resident. Contact/ preparation time 30 hours.
- 2002- Teaching Attending General Endocrinology Clinic: 3 Fellows. Contact time 4-5 hours on alternate weeks.
- 2002 Preceptor Molecular Biology Program Journal Club. 10 students Contact/ preparation time 14 hours
- 2003 Course Director- Biological Chemistry Seminar Course “ Regulation of Mitochondrial Function” 6 students. Contact/ preparation time 20 hours
- 2003- Lecturer Biochemistry Year 1 Medical Students. 70 students Contact/ preparation time 20 hours
- 2003- Lecturer and Small Group Preceptor Endocrine Organ Systems Course. 20 students. Contact/ preparation time 40 hours
- 2004 Preceptor Molecular Biology Program Journal Club. 10 students Contact/ preparation time 14 hours
- 2005- Lecturer. Regulation of Metabolism Course – Biochemistry Elective offered to students in the Biological Chemistry and Molecular Biology Programs. 14 Students. Contact/preparation time 12 hours

Harvard Medical School

- 1997-2000 Integrated Human Physiology Course (Focused Group Exercise Leader). 15 First year HMS students. Contact time 3 hours, Preparation time 3 hours
- 1999- Integrated Human Physiology Course (Tutor) 7 First year HMS Students. Contact time 15 hours. Preparation time 10 hours

Department of Medicine: Beth Israel Deaconess Medical Center

- 1998-2000 Teaching Attending General Medicine: 6 Residents, 3-4 Medical Students. Contact/Preparation time: 30 hours
- 1997-2000 Faculty Preceptor, Medical Student Ambulatory block: 4-5 students per year. Contact/Preparation time (per student) 12 hours.

Division of Endocrinology : Beth Israel Deaconess Medical Center

- 1995-2000 Teaching Attending Endocrinology Consultation Service: 2 Fellows 1-2 residents 1-2 Medical Students. Contact/Preparation time: 30 hours.
- 1996-2000 Teaching Attending General Endocrinology Clinic : 1 Fellow , 4 residents per year. Contact time 5 hours per week.
- 1996-2000 Director Endocrine Grand Rounds Series. Attended by 25-40 persons including, medical students, residents, fellows, post docs and faculty. 1 hour per week. 10 hours/yr. in preparation and planning.

IX. TEACHING RESPONSIBILITIES/ASSIGNMENTS contd.

1999-2000 Preceptor, Harvard University Summer Honors Undergraduate Research Program.
Supervised college undergraduate's summer research project in my laboratory (10 weeks).

CME Courses

1995 " Thyroid Disease a Practical Approach". Lecturer.
2002 "Utah Winter Endocrine Conference". Lecturer
2003 "Mitochondrial Dysfunction in the Insulin Resistant Heart"
Invited Speaker –Utah Valley Endocrine Annual Winter Conference
2004 " What's New and Promising in Diabetes Research." Utah Diabetes
Center 2nd Annual Professional Symposium
2004- Director, Endocrinology Visiting Lecturer Series

Institutional Lectures and Seminars:

1997-1999 Longwood Area Endocrine Fellowship Lecture Series:
Lecture- "Thyroid Function Tests"
November 1998. Brigham and Women's Hospital , Thorne 13, Cardiovascular
Research Seminar. Title: Glucose transporters and the heart.
December 1998. Beth Israel Deaconess Medical Center, Cardiovascular `
Research Seminar. Title: Cardiomyopathy and glucose
transporter knockout mice.
April 2001 University of Utah School of Medicine, Internal Medicine
Grand Rounds. Title: Metabolic Basis for Diabetic Heart Disease
October 2001 University of Utah School of Medicine, Biochemistry Research Seminar. Title:
Substrate Metabolism and the Regulation of Cardiac Size
January 2002 University of Utah School of Medicine, Human Molecular Biology and Genetics
Research in Progress Series. Title: Modeling the Metabolic Pathogenesis of the
Diabetic Cardiomyopathy using Conditional Gene Targeting
September 2002 University of Utah Cardiology Research Seminar. Title:
Insulin Resistance and Cardiac Dysfunction in Diabetes and Obesity
October 2002 University of Utah Oncological Science Research In Progress Seminar. Title:
Coordinate Regulation of Cardiac Size and Metabolism by Insulin Signaling
November 2002 University of Utah Bioscience Undergraduate Research Program Seminar. Title:
Insulin Signaling in the Heart
February 2003 University of Utah Department of Biochemistry Research in Progress. Title:
Sorting out Insulin Signaling in the Heart Using Gene Targeted Mice
October 2004 University of Utah Department of Biochemistry Research in Progress. Title:
Insulin Signaling in the Heart, Novel Mechanisms and Consequences.
June 2007 Internal Medicine Grand Rounds. University of Utah School of Medicine
Obesity Diabetes and Cardiovascular Disease - The Mitochondrial Connection.

IX. TEACHING RESPONSIBILITIES/ASSIGNMENTS contd.

January 2005	Nora Eccles Treadwell Distinguished Lecture Series –Cardiovascular Research and Training Institute, University of Utah School of Medicine. Title: Pleiotropic Effects of Insulin Signaling in the Heart.
November 2005	Children’s Health Improvement through Laboratory Diagnostics (CHILDx) – ARUP Laboratories. 5 th Annual Symposium – “ Childhood Obesity and Diabetes”. Title: Update on the Pathophysiology of the Metabolic Syndrome.
August 2006	Department of Pharmacology and Toxicology Seminar Series, University of Utah School of Medicine. Title: Insulin Signaling and Metabolic Regulation in the Heart

B. Research Trainees

Past

1998-1999	Mary-Ellen Boers MSc. Member of Thesis Committee: Biology Department: University of Massachusetts Boston. Ms Boers conducted her thesis research at the Beth Israel Deaconess as an extern under my supervision. Joined the Biotech industry as a team leader in the company Microbia.
1999	Pierre Michel (undergraduate) who joined my lab under the auspices of HMS SHURP Program. Currently a Ph.D. Student in the Dept. of Biological Chemistry, UCLA
1999-2000	Sandrine Betuing PhD - Paul Sabatier University, Toulouse France Current position: Assistant Professor, Laboratory of neurobiology, INSERM E 9913 - University of 'Evry Val d'Essone'
2000	David Myles (undergraduate) who joined my lab under the auspices of HMS SHURP Program. Currently an MD/ Ph.D. Student at Yale.
2001	Arash Mohajer (undergraduate) supported by the bioscience undergraduate research program of the University of Utah. Currently an MD student at the University of Utah.
2002	Alex Hernandez (undergraduate) Summer Minority Enrichment Program University of Utah. Accepted to University of Utah School of Medicine for 2003.
2000-2003	Christophe Graveleau PhD - University of Paris Current position: Research Associate University of Cork, Ireland
2001-2002	Leanne Swenson M.D. University of Utah School of Medicine Current position: Clinical Fellow –Endocrinology, University of Utah
2002	Gopa Chakrabarti PhD – University of Hamburg Current position: Second post-doc, University of Manitoba
2002	James Hoffman – Medical Student, University of Utah, Resident in Pediatrics, Ohio State University.
2003	Sergio Gonzales, Medical Student University of Utah
2003	Michele Richins, Medical Student University of Utah, Resident in Anesthesiology University of Utah
2003	Matthew Roberts, Undergraduate Weber State University, American Heart Association Summer Research Fellowship Grantee. Medical Student, University of Tennessee.
2003	Jenny Billy, Undergraduate Fort Lewis College, Colorado. University of Utah Research Opportunity Scholar
2004	Eric Palfreyman Medical Student University of Utah
2004	Nikhil Banerjee MD Ph.D. Student, University of Utah

2004 Josie Johnson, Ph.D. Student, Department of Biochemistry,
University of Utah (deceased)
2004 Don Davis Medical Student University of Utah

Research Trainees contd.

2003-5	Jun Luo, University of Utah LEAP Program, Currently, Medical Student University of Utah.
2004	Ryan Funk Undergraduate Brigham Young University, American Heart Association Summer Research Fellowship Grantee. Now a Medical Student at Washington University School of Medicine.
2001-2006	Pradip K. Mazumder, DVM. Ph.D., Indian Veterinary Research Institute, Izatnagar, India. Current Position –Head Drug Discovery Advinus Pharmaceuticals –India.
2002-2006	Vlad G. Zaha MD –University of Freiburg, Germany. Current Position – Internal Medicine Resident Indiana University
2004-2006	Justin Carlstrom, Ph.D., University of Utah. Current Position – Team Physiologist U.S.A. Olympics Ski Team
2005	Varissa Benally, Undergraduate, New Mexico. University of Utah Research Opportunity Scholar
2005	Henry Tran, Undergraduate, University of Utah. BIOURP Grant Recipient.
2005	Alex Nguyen, Undergraduate, Tufts University.
2006	Ryan Hungerford, Internal Medicine Resident, University of Utah

Current

2002-	Sihem Boudina Ph.D. University of Bordeaux, France- Post-Doc
2003-	Brian O’Neil MD, Ph.D., candidate University of Utah
2004-	Sandra Sena Ph.D. University of Bordeaux, France - Post-Doc
2004-	Imene Tabbi-Annani Ph.D., University of Paris -Post-Doc
2004-	Kimberly Fountain Medical Student University of Utah
2004-	Jordan Wright Undergraduate, University of Utah (AHA Summer Student grant recipient, 2005, BIOURP Grant Recipient University of Utah, 2005 Endocrine Society Summer Research Fellowship
2005-	Crystal Sloan, Ph.D. Student, Department of Biochemistry, University of Utah
2005-	Maryam Safaee, Undergraduate, University of Utah, American Heart Association Summer Research Fellowship Grantee
2005-	Heiko Bugger MD. University of Freiberg -Post-Doc
2006-	Curtis Ellis, Medical Student, University of Utah
2006-	Nicole Wilde, Medical Student, University of Utah, American Heart Association, Medical Student Research Award Grantee
2006-	Michael Warden, Undergraduate Utah Valley State College, American Heart Association, Summer Research Fellowship Grantee

IX. TEACHING RESPONSIBILITIES/ASSIGNMENTS contd.

Current Trainees Contd..

- 2006- Michelle Tsang, Undergraduate. University of Utah Research Opportunity Scholar
 2006- Olesya Ilkun, Ph.D. Student, Department of Biochemistry, University of Utah
 2006- Renata Pereira, Ph.D. Student, Department of Physiology, State University of Rio De Janeiro
 2006- Pilar Caro-Martin, Ph.D. Student, Department of Physiology, Universidad Complutense de Madrid
 2006- Adam R Wende Ph.D. Washington University – Post Doc
 2006- Daniel Torba, Undergraduate University of Utah
 2006- John Schell, Undergraduate University of Utah
 2006- Jaetaek Kim MD Ph.D., Chung An University, Seoul – Post Doc
 2006- Ellis B. Jensen Ph.D. East Carolina University - Post-Doc
 2007- Yi Zhu Ph.D. Student, Department of Biochemistry, University of Utah
 2007- Bharat Jaishy Ph.D. Student, Department of Biochemistry, University of Utah
 2007- Christian Riehle MD Student, University of Freiburg
 2007- Kate Nemetz –AHA summer undergraduate
 2007- Jonathan Frandsen – USURP Undergraduate Summer Student
 2007- Judy Vu, Medical Student, University of Utah
 2007- Tammy Nguyen, Medical Student, University of Utah

Thesis Committees

- 2003-2006 Christopher Sans – Ph.D. Student Department of Oncological Sciences, University of Utah
 2003- 2006 Jerome Coyne – Ph.D. Student Department of Biochemistry, University of Utah
 2003- Hani Jouihan – Ph.D. Student Department of Biochemistry, University of Utah
 2004-2005 Michael Overfield – Ph.D. Student Department of Oncological Sciences, University of Utah
 2003- Roderick Taylor – Ph.D. Student Department of Biochemistry, University of Utah
 2005- Yudi Soesanto – Ph.D. Student Department of Biochemistry, University of Utah
 2005- William Holland – Ph.D. Student Department of Biochemistry, University of Utah
 2003- Charles Langelier – MD, Ph.D. Student Department of Biochemistry, University of Utah
 2004- Karyn Sheaffer – Ph.D. Student Department of Oncological Sciences, University of Utah
 2005 - Teresa A. Hopkins – External Examiner, Ph.D. Thesis Committee, Department of Pharmacology, University of Alberta, Canada.
 2005- Yanqi Liu – Ph.D. Student Department of Biochemistry, University of Utah
 2005- Ashley Meagher – MD, Ph.D. Student Department of Biochemistry, University of Utah
 2005- Megan Bestwick – Ph.D., Student Department of Biochemistry, University of Utah

2006-

Caleb Cardon – Ph.D., Student Department of Biochemistry, University of Utah

IX. TEACHING RESPONSIBILITIES/ASSIGNMENTS contd.

Training Grants:

I serve as a faculty mentor on the following training grants:

- Developmental Biology Training Grant
- Genetics Training Grant
- Genetics of Complex Disorders Training Grant
- Biological Chemistry Training Grant
- Cardiovascular Diseases Training Grant

C. Courses developed

- 2003- Revised and wrote three new problem based modules for the First Year Medical Student Biochemistry Series
- 2003- Revised and rewrote the thyroid chapter in the Endocrinology Organ Systems Course
- 2004- Metabolism Interest Group –University of Utah
- 2004- Division of Endocrinology Guest Lecture Series

BIBLIOGRAPHY

Original articles:

1. Ng LL, Harker M, **Abel ED**. (1988) Mechanism of leukocyte sodium influx in essential hypertension. *Clinical Science*; 75:521-526.
2. Ng LL, Harker M, **Abel ED**. (1989) Leukocyte sodium content and sodium pump activity in overweight and lean hypertensives. *Clinical Endocrinology*; 30:191-200
3. **Abel ED**, Ledingham JGG. (1994) Impaired glucose tolerance in hypertension is associated with impaired insulin release independently of changes in insulin sensitivity. *Journal of Hypertension*; 12:1265-1273
4. Ito M, Grujic D, **Abel ED**, Vidal-Puig A, Susulic VS, Lawitts J, Harper M-E, Himms-Hagen J, Strosberg AD, Flier JS, Lowell BB. (1998) Mice expressing human but not murine β 3-adrenergic receptors under the control of human gene regulatory elements. *Diabetes*; 47:1464-1471
5. **Abel ED**, Kaulbach HC, Campos-Barros A, Ahima RS, Boers M-E, Hashimoto K, Forrest D, Wondisford FE. (1999) Novel insight from transgenic mice into thyroid hormone resistance and the regulation of thyrotropin. *Journal of Clinical Investigation*; 103:271-279.
6. **Abel ED**, Boers M-E, Pazos-Moura C, Moura E, Kaulbach H, Zakaria M, Radovick S, Liberman MC, Wondisford F. (1999) Divergent roles for thyroid hormone receptor β isoforms in the endocrine axis and auditory system. *Journal of Clinical Investigation*; 104:291-300.
7. **Abel ED**, Kaulbach HC, Tian R, Hopkins J, Duffy J, Doetschman T, Minnemann T, Boers M-E, Hadro E, Oberste-Berghaus C, Quist W, Lowell BB, Ingwall JS, Kahn BB. (1999) Cardiac hypertrophy with preserved contractile function after selective deletion of GLUT4 from the heart. *Journal of Clinical Investigation*; 104: 1703-1714
8. Pazos-Moura C, **Abel ED***, Boers M-E, Moura E, Hampton TG, Wang J, Morgan JP, Wondisford FE. (2000) Cardiac dysfunction caused by myocardium-specific expression of a mutant thyroid hormone receptor. (*Co-first Author). *Circulation Research*; 86:700-706
9. Zisman A, Peroni OD, **Abel ED**, Michael MD, Mauvais-Jarvis F, Lowell BB, Wojtaszewski JF, Hirshman MF, Virkamaki A, Goodyear LJ, Kahn CR, Kahn BB. (2000) Targeted disruption of the glucose transporter 4 selectively in muscle causes insulin resistance and glucose intolerance. *Nature Medicine*; 6:924-928
10. Pachucki J, Hopkins J, Peeters R, Tu H, Carvalho SD, Kaulbach H, **Abel ED**, Wondisford FE, Ingwall JS, Larsen PR. (2001) Type 2 iodothyronine deiodinase transgene expression in the mouse heart causes cardiac-specific thyrotoxicosis. *Endocrinology* 142: 13-20
11. **Abel ED**, Peroni O, Kim JK, Kim Y-B, Boss O, Hadro E, Minneman T, Shulman GI, Kahn BB. (2001) Adipose selective targeting of the GLUT4 Gene impairs insulin action in muscle and liver. *Nature*. 409: 729-733
12. Hashimoto K, Curty FH, Borges PP, Lee CH, **Abel ED**, Elmquist JK, Cohen RN, Wondisford FE. (2001) An unliganded thyroid hormone receptor causes severe neurological dysfunction. *Proc. of the Natl. Acad.Sci.* 98:3998-4003

13. **Abel ED**, Ahima RS, Boers M-E, Elmquist JK, Wondisford FE. (2001) Critical role for thyroid hormone receptor $\beta 2$ in the regulation of paraventricular thyrotropin-releasing hormone neurons. *Journal of Clinical Investigation* 107: 1017-1023

Original articles contd.....

14. Tian R, **Abel ED**. (2001) The responses of GLUT4 deficient hearts to ischemia underscore the importance of glycolysis. *Circulation*; 103:2961-2966
15. Belke DD, Betuing S, Tuttle MJ, Graveleau C, Young ME, Pham M, Zhang D, Cooksey RC, McClain DA, Litwin SE, Taegtmeier H, Severson D, Kahn CR, **Abel ED**. (2002) Insulin signaling coordinately regulates cardiac size, metabolism, and contractile protein isoform expression. *Journal of Clinical Investigation*; 109: 629-639
16. Shiojima I, Yefremashvili M, Luo Z, Kureishi Y, Takahashi A, Tao J, Rosenzweig A, Kahn CR, **Abel ED**, Walsh K. (2002) Akt signaling mediates postnatal heart growth in response to insulin and nutritional status. *J Biol Chem*; 277: 37670-37677
17. Hu P, Zhang D, Swenson L, Chakrabarti G, **Abel ED**, Litwin SE. (2003) Minimally invasive aortic banding in mice: Effects of altered cardiomyocyte insulin signaling during pressure-overload. *American Journal of Physiology*. 285(3): H1261-1269
18. **Abel ED**, Moura EG, Ahima RS, Campos-Barros A, Pazos-Moura CC, Boers M_E, Kaulbach HC, Forrest D, Wondisford FE. (2003) Dominant inhibition of thyroid hormone action in the pituitary of TR- β null mice abolishes the regulation of thyrotropin by thyroid hormone. *Molecular Endocrinology*. 17: 1767-1776.
19. Shimoni Y, Chuang M, **Abel ED**, Severson DL. (2004) Gender dependent attenuation of cardiac potassium currents in type 2 diabetic db/db mice. *J. Physiol*. 2004; 555:345-354
20. Hayashi M, Kim S-W, Imanaka-Yoshida K, Yoshida T, **Abel ED**, Elicieri B, Yang Y, Ulevitch RJ, Lee J-D. (2004) Targeted deletion of BMK1/ERK5 in adult mice perturbs vascular integrity and leads to endothelial failure. *Journal of Clinical Investigation*. 113:1138-1148
21. Mazumder PK, O'Neill BT, Roberts MW, Buchanan J, Yun UJ, Cooksey RC, Boudina S, **Abel ED**. (2004) Impaired Cardiac Efficiency and Increased Fatty Acid Oxidation in Insulin Resistant *ob/ob* mouse hearts. 2004; *Diabetes*. 53: 2366-2374
22. **Abel ED**, Graveleau C, Betuing S, Pham M, Reay PA, Kandror V, Kupriyanova T, Xu Z, Kandror KV. (2004) Regulation of insulin-responsive aminopeptidase expression and targeting in the insulin responsive vesicle compartment of glucose transporter isoform 4-deficient cardiomyocytes. *Molecular Endocrinology*. 18:2491-2501
23. Stavinoha MA, RaySpellicy JW, Essop MF, Graveleau C, **Abel ED**, Hart-Sailors ML, Mersmann HJ, Bray MS, Young ME. (2004) Evidence for mitochondrial thioesterase 1 as a peroxisome proliferators-activated receptor regulated gene in cardiac and skeletal muscle. *American Journal of Physiology*. 287 (5): E888-895.
24. Punske BB, Rossi S, Erschler P, Rasmussen I, **Abel ED**. (2004) Optical mapping of propagation changes induced by elevated extracellular potassium ion concentration in genetically altered mouse hearts. *Journal of Electrocardiology*. 37: Suppl. 128-134.
25. Leone TC, Lehman JJ, Finck BN, Schaeffer PJ, Wende AR, Boudina S, Courtois M, Wozniak DF, Sambandam N, Bernal-Mizrachi C, Chen Z, Holloszy JO, Medeiros DM, Schmidt RE, Saffitz JE, **Abel ED**, Semenkovich CF, Kelly DP. PGC-1 α deficient mice exhibit multi-system energy

metabolic derangements: muscle dysfunction, abnormal weight control and hepatic steatosis. 2005. *PLoS Biology* 3(4)*e101*.

Original articles contd.....

26. Rui T, Feng Q, Lei M, Peng T, Zhang J, Xu M, **Abel ED**, Xenocostas A, Kvietyts PR. Erythropoietin prevents the acute myocardial inflammatory response induced by ischemia/reperfusion in vitro and in vivo: role of AP-1. 2005. *Cardiovascular Research*.65:719-727.
27. Durgan DJ, Hotze MA, Tomlin TM, Egbejimi O, Gravelelau G, **Abel ED**, Shaw CA, Bray MS, Hardin PE, Young ME. The intrinsic circadian clock within the cardiomyocyte. 2005. *American Journal of Physiology*. 289:H1530-1541.
28. Graveleau C, Zaha VG, Mohajer A, Banerjee RR, Dudley-Rucker N, Steppan CM, Rajala MW, Scherer PE, Ahima RS, Scherer PS, Lazar MA, **Abel ED**. Mouse and human resistin impair glucose transport in primary mouse cardiomyocytes and oligomerization is required for this biological action. 2005. *J. Biol Chem*. 280:31679-31685.
29. McQueen AP, Hu P, Zhang D, Swenson L, Zaha VG, Hoffman J, Yun UJ, Chakrabarti G, Wang Z, Albertine KH, **Abel ED***, Litwin SE*. (2005) Contractile dysfunction in hypertrophied hearts with deficient insulin receptor signaling: possible role of reduced capillary density. 2005. *J. Molecular and Cellular Cardiology*. 39:882-892 (* Corresponding authors)
30. Buchanan J, Mazumder PK, Hu P, Chakrabarti G, Roberts MW, Jeong UJ, Cooksey RC, Litwin SE, **Abel ED**. (2005) Reduced cardiac efficiency and altered substrate metabolism precedes the onset of hyperglycemia and contractile dysfunction in two mouse models of insulin resistance and obesity. 2005. *Endocrinology*. 146:5341-5349.
31. Boudina S, Sena S, O'Neill BT, Tathireddy P, Young ME, **Abel ED** (2005). Reduced mitochondrial oxidative capacity and increased mitochondrial uncoupling impairs myocardial energetics in obesity. 2005. *Circulation*. 112:2686-2695.
32. Augustus AS, Buchanan J, Park TS, Hirata K, Noh HL, Sun J, Homma S, D'armiento J, **Abel ED**, Goldberg IJ. Loss of lipoprotein lipase-derived fatty acids leads to increased cardiac glucose metabolism and heart dysfunction. 2006. *J Biol Chem*. 281:8716-8723.
33. Durgan DJ, Smith JK, Hotze MA, Egbejimi O, Cuthbert KD, Zaha VG, Dyck JR, **Abel ED**, Young ME. Distinct Transcriptional Regulation of Long-Chain Acyl-CoA Synthetase Isoforms and Cytosolic Thioesterase 1 in the Rodent Heart by Fatty Acids and Insulin. 2006. *Am J Physiol Heart Circ Physiol*. 290:H2480-2497.
34. Buerger A, Rozhitskaya O, Sherwood MC, Dorfman AL, Bisping E, **Abel ED**, Pu WT, Izumo S, Jay PY . Dilated Cardiomyopathy Resulting from High-Level Myocardial Expression of Cre-recombinase. *J. Cardiac Failure* (2006). 12:392-398.
35. Lelliot CJ, Medina-Gomez G, Petrovic N, Kis A, Feldmann HM, Bjursell M, Parker N, Curtis K, Campbell M, Hu P, Zhang D, Litwin SE, Zaha VG, Fountain KT, Boudina S, Jimenez-Linan M, Bloun M, Lopez M, Meirhaeghe A, Bohlooly M, Storlien L, Strömstedt M, Snaith M, Ore M, **Abel ED**, Cannon B, Vidal-Puig A. Ablation of PGC-1beta results in defective mitochondrial activity, thermogenesis, hepatic function and cardiac performance. (2006), *PLoS Biology*. 4(11): e369.
36. Sano M, Izumi Y, Helenius K, Asakura M, Rossi DJ, Xie M, Taffet G, Hu L, Pautler RG, Wilson CR, Boudina S, **Abel ED**, Taegtmeier H, Scaglia F, Graham BH, Kralli A, Shimizu N, Tanaka H,

Makela TP, Schneider MD. Menage-a-Trois 1 Is Critical for the Transcriptional Function of PPARgamma Coactivator 1. *Cell Metab.* 2007 5(2):129-42

Evan Dale Abel

Original Articles contd...

37. Boudina S, Sena S, Theobald H, Sheng X, Wright JJ, Hu XX, Aziz S, Johnson JI, Bugger H, Zaha VG, **Abel ED**. Mitochondrial energetics in the heart in obesity related diabetes: Direct evidence for increased uncoupled respiration and activation of uncoupling proteins. *2007.Diabetes*, 56(10):2457-66
38. Sena S, Rasmussen IR, Wende AR, McQueen AP, Theobald HA, Wilde N, Pereira RO, Litwin SE, Berger JP, **Abel ED** Cardiac Hypertrophy Caused by Peroxisome Proliferator Activated Receptor-Gamma Agonist Treatment Occurs Independently of Changes in Myocardial Insulin Signaling. *2007 Endocrinology (ePub In press)*.
39. Hao HX, Cardon CM, Swiatek W, Cooksey RC, Smith TL, Wilde J, Boudina S, **Abel ED**, McClain DA, Rutter J PAS kinase is required for normal cellular energy balance. *2007 Proc Natl Acad Sci U S A* 104(39):1546-1571
40. Benjamin IJ, Guo Y, Srinivasan S, Boudina S, Taylor R, Rajasekaran NS, Gottlieb RA, Wawrousek E, **Abel ED**, Bolli R CRYAB and HSPB2 deficiency alters cardiac metabolism and paradoxically confers protection against myocardial ischemia in aging mice. *2007 Am J Physiol Heart Circ Physiol (ePub In press)*.
41. O'Neill BT, Kim J, Wende AR, Theobald HA, Tuinei J, Buchanan J, Guo A, Zaha VG, Davis DK, Schell JC, Boudina S, Wayment B, Litwin SE, Shioi T, Izumo S, Birnbaum MJ, **Abel ED**. A conserved role for phosphatidylinositol 3-kinase but not Akt signaling in mitochondrial adaptations that accompany physiological cardiac hypertrophy. *2007: Cell Metabolism.*; 6(4):294-306

Reviews, Chapters, and Editorials:

1. **Abel ED**, Houseknecht KL, Kahn BB. Recent advances in understanding the molecular basis for insulin stimulated glucose transport. *Current Opinion in Endocrinology and Diabetes* 1995,2(4):313-324
2. **Abel ED**, Shepherd PR, Kahn BB. Glucose transporters and pathophysiologic states. In *Diabetes Mellitus a Fundamental and Clinical Text*. Edited by Leroith D, Olefsky JM and Taylor S. Philadelphia: JB Lipincott; 1996: 530-543
3. McCowen KC, **Abel ED**. The contribution of defects in insulin signaling in skeletal muscle to insulin resistance and Type 2 diabetes: cellular and molecular aspects. In *Advances in Structural Biology*. Malhotria S. Editor. JAI Press. Volume 6:2000:41-64
4. Shepherd PR, **Abel ED**, Kahn BB. Glucose transporters and pathophysiologic states. In *Diabetes Mellitus a Fundamental and Clinical Text (Second Edition)*. Edited by Leroith D, Olefsky JM and Taylor S. Philadelphia. JB Lipincott; 2000:627-641.
5. **Abel ED**. Glucose transporters and cardiac function. Insights from heart selective GLUT4 knockout mice. In, *Frontiers in animal diabetes research*. Volume 3. "Insulin signaling: From cultured cells to animal models." Eds. G. Grunberger and Y. Zick. 2002:397-408
6. **Abel ED**, Shepherd PR, Kahn BB. Glucose transporters and pathophysiologic states. In *Diabetes Mellitus a Fundamental and Clinical Text*. Edited by Leroith D, Olefsky JM and Taylor S. Philadelphia: JB Lipincott; 2003: 917-938.
7. Vidal-Puig AJ, **Abel ED**. Insulin resistance and cardiovascular disease-New insights from genetics. In *Handbook of Experimental Pharmacology –Volume 160: Cardiovascular Pharmacogenetics*.

Edited by Martin R. Wilkins. Heidelberg. Springer-Verlag. 2004: 243-279

8. **Abel ED.** (2004) Glucose transport in the heart. *Frontiers in Bioscience*. 9, 201-215
9. **Abel ED.** Insulin signaling in heart muscle: Lessons from genetically engineered mouse models. *Curr. Reports in Hypertension*. 2004: Volume 6: 416-423
10. **Abel ED.** Myocardial insulin resistance and cardiac complications of diabetes. *Curr. Drug Targets –Immune, Endocrine and Metabolic Disorders*. 2005: 5; 219-226
11. **Abel ED.** Metabolic perturbations in the diabetic heart: Mechanisms and molecular targets. 2005. *Drug Discovery Today: Disease Mechanisms*. 2005: 2; 115-122.
12. O'Neill BT, **Abel ED.** Akt1 in the cardiovascular system: friend or foe? *Journal of Clinical Investigation*. 2005:115; 2059-2064.
13. Boudina S, **Abel ED.** Mitochondrial uncoupling: A key contributor to reduced cardiac efficiency in diabetes. *Physiology*. 2007. 21; 250-258.
14. Hsueh WA, **Abel ED,** Breslow JL, Maeda N, Davis RC, Fisher EA, Dansky H, McClain DA, McIndoe R, Wassef MK, Rabadan-Diehl C, Goldberg IJ. Recipes for creating animal models of diabetic cardiovascular disease. *Circulation Research*. 2007:100; 1415-1427
15. Boudina S, **Abel ED.** Diabetic cardiomyopathy revisited. *Circulation*. 2007:115; 3213-3223.
16. **Abel ED.** Glucose for the aging heart? *Circulation*. 2007:116; 884-887
17. Bugger H, **Abel ED.** Molecular mechanisms of myocardial mitochondrial dysfunction in the metabolic syndrome. *Clinical Science*. 2007: *In Press*.
18. **Abel ED,** Litwin SE, Sweeney GD. Cardiac remodeling in obesity. *Physiological Reviews*. 2007: *In Press*
- 19.

Evan Dale Abel

Abstracts (Presented but not yet published as full papers):

1. Kaulbach HC, Pazos-Moura C, Moura E, Wondisford FE, **Abel ED**. Pituitary expression in transgenic mice of the Δ 337T mutant thyroid hormone receptor as TR β 2 impairs the in vivo regulation of thyrotropin. Proceedings of the 71st Annual Meeting of the American Thyroid Association Abstract # 203. P. 102.
2. Hampton T, Wang, J-F, DeAngelis J, **Abel ED**. Preserved basal contractility but impaired responses to isoproterenol in vivo in mice with cardiac selective GLUT4 ablation. *Circulation* 1999; 100 (Suppl I):I- 118
(Presented at the 72nd annual Scientific Conference of the American Heart Association , 1999):
3. Peroni O, Zisman A, Wojtaszewski J, Hirschman M, **Abel ED**, Goodyear LJ, Kahn BB. Exercise Capacity is Impaired in Mice with Muscle-Specific GLUT4 Knock Out but is Normal with Cardiac-Specific GLUT4 Knock Out. *Diabetes* 2000; 49, Suppl. 1 A12
(Presented at the 60th annual scientific session of the American Diabetes Association, 2000)
4. Graveleau C, Shiojima I, Mantzoros C, Walsh K, **Abel ED**. Downregulation of glucose transport and insulin-mediated phosphorylation of glycogen synthase kinase -3 are early defects in the cardiac muscle of insulin resistant mice. *Diabetes* 2001; 50, Suppl. 2 A271
5. Betuing S, Graveleau C, Shioi T, Izumo S, **Abel ED**. Cardiac selective overexpression of a constitutively active phosphoinositide 3-kinase in transgenic mice leads to insulin resistance in cardiac myocytes. *Diabetes* 2001; 50, Suppl. 2 A294
(4-5 presented at the 61st annual scientific session of the American Diabetes Association)
6. Graveleau C, Belke DD, **Abel ED**. Molecular mechanisms governing the phenotypes of cardiac insulin resistance.
(Presented at the 1st International Workshop on Insulin Resistance, February 2000)
7. Graveleau CG, Hampton TG, Belke DD, Kahn CR, **Abel ED**. Phenotypes of cardiac insulin resistance: Insights into the molecular pathogenesis from genetically engineered mice
(Presented at the VIIIth International Symposium on Insulin Receptors and Insulin Action)
(6-7 Presented at the American Heart Association scientific sessions 2001)
8. **Abel ED**. Contribution of impaired insulin signaling or reduced glucose utilization to the metabolic abnormalities in the diabetic heart.
(Presented at the 7th Annual Astra Zeneca Cardiovascular Young Investigators' Forum)
9. Belke DD, Litwin SE, Zhang D, Mazumder PK, Kahn CR, **Abel ED**. Contribution of impaired insulin signaling or reduced glucose utilization to the metabolic abnormalities of the diabetic heart. *Diabetes* 2002; 51, Suppl. 2 A326
10. Mazumder PK, Graveleau C, Belke DD, **Abel ED**. Glucose oxidation rates and contractile function are reduced in the hearts of insulin resistant mice prior to the onset of diabetes. *Diabetes* 2002; 51, Suppl. 2 A317
(8-10 Presented at the 62nd annual scientific session of the American Diabetes Association)
11. Tuttle MJ, Mazumder PK, Litwin SE, Belke DD, Winder WW, **Abel ED**. GLUT4 deficient hearts – a model of compensated cardiac hypertrophy with elevated fatty acid oxidation rates. *Circulation* 2002; 106 II-263

12. Mazumder PK, Gravelleau C, Tuttle MJ, Betuing S, Belke DD, Shioi T, Izumo S, **Abel ED**. Regulation of cardiac substrate metabolism by PI3 Kinase. *Circulation* 2002;106 II-157

Evan Dale Abel

Abstracts (Presented but not yet published as full papers):

(11-12 Presented at American Heart Association Scientific Sessions 2002)

13. Boudina S, O'Neil B, Belke DD, Rodnick KJ, **Abel ED**. Insulin Resistance leads to multiple mitochondrial defects in the mouse heart. *Diabetes* 2003; 52, Suppl. 1 A284
14. Mazumder PK, Gravelleau C, Boudina S, Belke DD, **Abel ED**. Metabolic characterization of the insulin resistant mouse heart. *Diabetes* 2003; 52, Suppl. 1 A300
15. Zaha V, Tuttle MJ, Izumo S, Patti ME, **Abel ED**. Hypertrophied GLUT4 deficient hearts exhibit a unique and distinct transcriptional profile. *Diabetes* 2003; 52, Suppl. 1 A283

(13-15 Presented at 63rd annual scientific session of the American Diabetes Association 2003)

16. Boudina S, O'Neil B, Belke DD, Rodnick KJ, **Abel ED**. Insulin Resistance leads to progressive mitochondrial dysfunction in the mouse heart.
17. Mazumder PK, Hu P, Chakrabarti G, Zhang D, Avelar E, Litwin SE, **Abel ED**. Insulin signaling is required for the metabolic and functional adaptation of the heart to pressure overload hypertrophy.
18. Hu P, Zhang D, Chakrabarti G, Zhang D, Avelar E, **Abel ED**, Litwin SE. Insulin resistance in the heart without systemic diabetes increases the mortality and contractile dysfunction after myocardial infarction.

(16-18 Presented at the American Heart Association Scientific Conference on the Molecular Mechanisms of Growth, Death, and Regeneration in the Myocardium: Basic Biology and Insights into Ischemic Heart Disease and Heart failure, Snowbird UT, 2003)

19. Mazumder PK, Tuttle MJ, Accili D, **Abel ED**. Insulin signaling regulates cardiac substrate metabolism via cross-talk between non-myocytes and cardiomyocytes. *Circulation* 2003; 108 IV-1411.
20. Boudina S, O'Neill B, Belke DD, Rodnick KJ, **Abel ED**. Insulin resistance leads to progressive mitochondrial dysfunction in the mouse heart. *Circulation* 2003; 108 IV-1404.
21. Mazumder PK, Hu P, Chakrabarti G, Zhang D, Avelar E, Litwin SE, **Abel ED**. Insulin signaling is required for the metabolic and functional adaptation of the heart to pressure overload hypertrophy. *Circulation* 2003; 108 IV-438
22. Hu P, Zhang D, Avelar E, **Abel ED**, Litwin SE. Insulin resistance in the heart increases the mortality and contractile dysfunction after myocardial infarction. *Circulation* 2003; 108 IV-894

(19-22 Presented at the American Heart Association Scientific Sessions 2003)

23. Zaha VG, Dunn DM, Weiss RB, **Abel ED**. Transcriptional profiling reveals mechanisms responsible for the impaired contractile response of GLUT4 deficient hearts to fasting. *Diabetes* 2004; 53, Suppl. 1 A5

24. Boudina S, O'Neill BT, **Abel ED**. Mitochondrial uncoupling and decreased oxidative capacity contributes to cardiac dysfunction in db/db mice. *Diabetes* 2004; 53, Suppl. 1 A335
25. O'Neill BT, Yun UJ, Graveleau C, Shioi T, Izumo S, Walsh K, Shiojima I, **Abel ED**. Short-term activation of Akt impairs insulin-stimulated glucose uptake in the heart. *Diabetes* 2004; 53, Suppl. 1 A333

Evan Dale Abel

Abstracts contd....

(23-25 presented at the 64th Scientific sessions of the American Diabetes Association 2004)

26. Punske BB, Rossi S, Pappas AL, Ershler PR, Rasmussen I, **Abel ED**. Diminished propagation of electrical conductance in insulin receptor deficient mouse hearts under normoxic and ischemic conditions. *Circulation* 2004; 110: III-164
27. O'Neill BT, Buchanan J, Izumo S, Walsh K, Shiojima I, **Abel ED**. Impact of short-term and long-term activation of Akt on myocardial glucose utilization. *Circulation* 2004; 110: III-278
28. Litwin SE, Wang W, Hu P, Mazumder PK, Buchanan J, Yang Y, Ross RS, Hsueh WA, **Abel ED**. Myocardial deficiency of PPAR γ leads to increased fibrosis in response to pressure overload hypertrophy. *Circulation* 2004; 110: III-320
29. Rasmussen I, McQueen AP, Zaha VG, Litwin SE, Berger JP, **Abel ED**. Cardiac hypertrophy induced by PPAR γ agonist treatment occurs independently of changes in myocardial insulin signaling. *Circulation* 2004; 110: III-321
30. Boudina S, Sena S, Wright J, O'Neill BT, Mazumder PK, **Abel ED**. Postnatal deletion of insulin receptors augments myocardial fatty acid utilization and enhances mitochondrial biogenesis. *Circulation* 2004; 110: III-324

(26-30 Presented at the American Heart Association Scientific Sessions 2004)

31. Boudina S, Sena S, Wright J, O'Neill BT, Mazumder PK, **Abel ED**. Postnatal Deletion of Myocardial Insulin Receptor Augments Myocardial Fatty Acid Utilization and Enhances Mitochondrial Biogenesis.

32. Boudina S, Cooksey RC, McClain DA, **Abel ED**. Mitochondrial Dysfunction Precedes Generalized Insulin resistance in Response to High-Fat Feeding.

(31-32 Presented at the IXth International Symposium on Insulin Receptors and Insulin Action, Nice, France 2004)

33. Boudina S, Sena S, O'Neill BT, **Abel ED**. Lack of Insulin Signaling in Cardiomyocytes Leads to Progressive ROS-mediated Defects in Mitochondrial Function.

(Presented Endocrinology Canada-International Symposium on the Science of Diabetes Complications: Implication for Novel Therapy. Toronto, Canada 2004.)

34. Boudina S, Cooksey RC, Jones D, McClain DA, **Abel ED**. Insulin resistance, mitochondrial dysfunction and energy expenditure following high fat feeding. *Diabetes* 2005; 54, Suppl. 1 A381
35. Tabbi-Annani I, O'Neill BT, Rasmussen I, McQueen AP, Litwin SE, **Abel ED**. Myocardial overexpression of the K159R mutant IGF-1 receptor impairs myocardial insulin and IGF-1 signaling. *Diabetes* 2005; 54, Suppl. 1 A484
36. Tabbi-Annani I, Buchanan J, **Abel ED**. The effect of angiotensin

converting enzyme inhibition on insulin signaling and substrate metabolism in the ob/ob mouse heart. *Diabetes* 2005; 54, Suppl. 1 A330

37. O'Neill BT, Davis DK, Boudina S, Izumo S, **Abel ED**. PI-3 Kinase regulates myocardial mitochondrial fatty acid utilization by modulating the expression of PGC-1-beta. *Diabetes* 2005; 54, Suppl. 1 A357

Abstracts contd....

38. O'Neill BT, Birnbaum MJ, **Abel ED**. Isoform specific regulation of glucose transport in the heart by Akt. *Diabetes* 2005; 54, Suppl. 1 A316
39. Mazumder PK, **Abel ED**. Insulin stimulated glucose utilization is mediated via the nitric oxide/cyclic GMP pathway in the heart. *Diabetes* 2005; 54, Suppl. 1 A330
- (35-39 Presented at the 65th Annual Meeting and Scientific Session of the American Diabetes Association, San Diego, CA, 2005)
40. O'Neill BT, Davis DK, Boudina S, Mazumder PK, **Abel ED**. PI-3 Kinase regulates myocardial mitochondrial fatty acid utilization via modulation of PGC-1-beta expression. *J. Mol. and Cell. Cardiol.* 2005: 38:999
41. Mazumder PK, **Abel ED**. The nitric oxide/cyclic GMP pathway mediates insulin-stimulated glucose utilization in the heart. *J. Mol. and Cell. Cardiol.* 2005: 38:999
- (40-41 Presented at the International Society for Heart Research European Section Meeting, Tromso, Norway, 2005)
42. Mazumder PK, Rasmussen I, Kahn CR, Accili D, **Abel ED**. Paracrine regulation of cardiac metabolism by endothelial insulin signaling – Potential role of the nitric oxide/cyclic GMP pathway.
43. O'Neill BT, Davis DK, Boudina S, Mazumder PK, Izumo S, **Abel ED**. PI-3 Kinase regulates myocardial mitochondrial fatty acid utilization via modulation of PGC-1-beta expression.
44. Mazumder PK, **Abel ED**. The nitric oxide/cyclic GMP pathway mediates insulin-stimulated glucose utilization in the heart.
- (42-44 Presented at the Society for Heart and Vascular Metabolism annual meeting, Oxford UK, 2005)
45. McQueen A, Zhang D, Hu P, Zaha V, Hoffman J, Wang Z, Albertine K, Abel ED, Litwin SE. Insulin receptor signaling in cardiomyocytes protects against myocardial injury during cardiac hypertrophy by regulating capillary density. *Circulation* 2005; 112: II-276
46. Tabbi-Anneni I, Hu P, McQueen AP, Rasmussen I, O'Neill BT, Litwin SE, Abel ED. Myocardial overexpression of a dominant negative IGF1 receptor induces partial cardiac insulin resistance and leads to impaired adaptation to pressure overload hypertrophy. *Circulation* 2005; 112: II-280
47. Buchanan J, O'Neill BT, Sloan C, Shiojima I, Walsh K, Abel ED. Impact of acute activation of Akt in the adult heart on mitochondrial metabolism and myocardial substrate utilization. *Circulation* 2005; 112: II-157
48. Lehman JJ, Boudina S, Young DM, Leone TC, Abel ED, Kelly DP. The transcriptional coactivator PGC1- α is essential for maximal and efficient cardiac mitochondrial fatty acid oxidation and ATP synthesis. *Circulation* 2005; 112: II-157

Abstracts contd....

49. Mazumder PK, Buchanan J, Rasmussen I, Kahn CR, Accili D, Abel ED. Paracrine regulation of cardiac metabolism by endothelial insulin signaling-potential role of the nitric oxide/cGMP pathway. *Circulation* 2005; 112: II-59
 50. O'Neill BT, Davis DK, Boudina S, Mazumder PK, Izumo S, Abel ED. PI-3 Kinase regulates myocardial fatty acid utilization via modulation of PGC-1 expression. *Circulation* 2005; 112: II-35
 51. O'Neill BT, Buchanan J, Mazumder PK, Birnbaum MJ, Abel ED. Insulin-mediated stimulation of myocardial glucose transport and glycolysis is mediated by Akt2 but the regulation of oxidative metabolism by insulin is mediated by Akt1. *Circulation* 2005; 112: II-180
- (45-51 Presented at the American Heart Association Scientific Sessions 2005)
52. Symons DJ, McMillin S, Lloyd J, Miller N, Snedeger B, Accili D **Abel ED**. Differential Effects of Selective Versus Total Loss of Vascular Insulin Signaling on Blood Pressure Regulation. *Diabetes* 2006; 55, Suppl. 1 A303
 53. O'Neill BT, Buchanan J, Zaha VG, Theobald H, Izumo S, **Abel ED**. Chronic Akt Activation in the Heart Induces Insulin Resistance Mitochondrial Dysfunction. *Diabetes* 2006; 55, Suppl. 1 A301
 54. Wright J, Buchanan J, McKnight RA, Lane RH, **Abel ED**. Intrauterine Growth Retardation Delays Myocardial Metabolic Maturation in the Rat Heart. *Diabetes* 2006; 55, Suppl. 1 A342
 55. Tabbi-Anneni I, Hu P, Zaha VG, O'Neill BT, Litwin SE, **Abel ED**. Partial Cardiac Insulin and IGF1 Resistance Impairs Cardiac Adaptation to Pressure Overload. *Diabetes* 2006; 55, Suppl. 1 A303
 56. Sena S, Mazumder PK, Hu P, Litwin SE, **Abel ED**. Insulin Signaling Regulates Cardiac GLUT1 Expression in Response to Pressure Overload Hypertrophy via Sp Factors. *Diabetes* 2006; 55, Suppl. 1 A302
 57. Boudina S, Zaha VG, Mazumder PK, O'Neill BT, Theobald H, **Abel ED**. Mitochondrial Adaptations to Chronic Myocardial GLUT4 Deficiency. *Diabetes* 2006; 55, Suppl. 1 A290
 58. Bugger H, Buchanan J, McQueen AP, Litwin SE, Schaffer JE, **Abel ED**. Increased Myocardial Fatty Acid Delivery Precipitates Mitochondrial Dysfunction. *Diabetes* 2006; 55, Suppl. 1 A290
- (52-58 Presented at the 66th Annual Meeting and Scientific Session of the American Diabetes Association, Washington, DC , 2006)
59. O'Neill BT, Izumo S, **Abel ED**. PI3-Kinase Regulates Myocardial Mitochondrial Mass and Oxidative Capacity via Akt-Independent Signaling Pathways. *Circulation* 2006; 112: II-245
 60. Bugger H, Schaffer JE, **Abel ED**. Insulin Resistance and Increased Fatty Acid Delivery Independently Impair Mitochondrial Function in the Heart. *Circulation* 2006; 112: II-210
 61. Wright J, Buchanan J, Boudina S, **Abel ED**. Differential Effects of High-Fat Feeding on the Ability of Insulin to Modulate Glucose versus FA Utilization in the Heart. *Circulation* 2006; 112: II-209
 62. Zaha VG, Buchanan J, Lelliot CJ, Hu P, McQueen AP, Medina-Gomez G, Kiss A, Litwin SE, Vidal-Puig A, **Abel ED**. Impact of PGC-1 beta Deletion on Contractile, Metabolic and Transcriptional Responses of the Heart to Pressure Overload Hypertrophy. *Circulation* 2006; 112: II-134
 63. Mazumder PK, Sloan C, Rasmussen I, **Abel ED**. Vascular Endothelial KO of Insulin Receptors Confirm a Critical Role of Endothelial Signaling in Regulating Myocardial Glucose Utilization. *Circulation* 2006; 112: II-135
 64. Boudina S, Sena S, O'Neill BT, Aziz S, **Abel ED**. Mitochondrial Uncoupling in db/db Mouse Hearts is Mediated by the Adenine Nucleotide Translocator (ANT). *Circulation* 2006; 112: II-244

65. Zaha VG, Hungerford PR, Li Y, Nuthakungwan O, Safaee M, Jalili T, **Abel ED**. Hypertrophy in GLUT4 Deficient Hearts Results from Increased Sensitivity to mTOR Signaling. *Circulation* 2006; 112: II-54

(59-65 Presented at the American Heart Association Scientific Sessions 2006)

Evan Dale Abel

Abstracts contd....

66. Fountain KT, Boudina S, Soto J, Sena S, Theobald H, Accili D, **Abel ED**. Impact of Insulin Receptor Deletion on Skeletal Muscle Mitochondrial Function. 2007; 56, Suppl. 1A62
67. Fountain KT, Boudina S, Soto J, Sena S, Theobald H, Accili D, **Abel ED**. Differential Effects of Postnatal versus Germline Deletion of Insulin Receptors on Cardiac Mitochondrial Function. 2007; 56, Suppl. 1A339
68. Wende AR, Wayment B, Litwin SE, **Abel ED**. GLUT4 is Required for Akt Activation and the Maintenance of Cardiac Function in Response to Exercise Training. 2007; 56, Suppl. 1A15
69. Tabbi-Anneni I, Theobald H, Hu P, Litwin SE, **Abel ED**. The Role of PI3 Kinase Signaling in Obesity Related Cardiac Hypertrophy. 2007; 56, Suppl. 1A456

(66-67 presented at the 67th Scientific Sessions of the American Diabetes Association)

70. Boudina S, Tuinei J, Thebald H, Sena S, **Abel ED**. Uncoupling Protein 3 Does not regulate Myocardial Fatty Acid Oxidation Rates but Regulates ROS Production and Cardiac Efficiency.
71. Tabbi-Anneni I, Buchanan J, Cooksey RC, **Abel ED**. Captopril Restores Insulin Sensitivity in ob/ob Mouse Hearts.
72. Wilde N, Tuinei J, **Abel ED**. Treatment of db/db Mice with the Catalytic Antioxidant MnTBAP Restores Mitochondrial Energetics and Normalizes Fatty Acid Oxidation.
73. Sloan CL, Tuinei J, **Abel ED**. Myocardial Fatty Acid Oxidation Rates Remain Elevated in ob/ob Mice Despite Reversal of Obesity and Diabetes by Caloric Restriction.
74. Kim JT, Wende AR, Sloan CL, Wayment BE, Litwin Se, LeRoith D, **Abel ED**. Mice with Cardiomyocyte-Restricted IGF-1 Receptor Deletion Exhibit Diminished Cardiomyocyte Size and Resistance to Exercise-Induced Cardiac Hypertrophy.

(70-74 accepted for presentation at the American Heart Association Scientific Sessions 2007)

Evan Dale Abel

Regional, national or international contributions

1. Tissue specific ablation of GLUT4 using *loxP* Cre-recombinase gene targeting. **Symposium Presentation.** Robert Wood Johnson Foundation, Minority Medical Faculty Development Program, Annual Meeting, October 1994 (Princeton NJ).
2. Isoform specific expression of mutant thyroid hormone receptors in the pituitaries of transgenic mice. **Symposium Presentation.** 5th Annual meeting of the Boston Area Receptor Society. June 1997.
3. Transgenic mice with pituitary resistance to thyroid hormone. **Symposium Presentation.** Third International Workshop on Resistance to Thyroid Hormone. Aspen, Colorado. October 1997.
4. Thyroid hormone action in the pituitary: Novel insights from transgenic and knockout mice. **Invited Lecture.** Endocrinology Research Seminar, University of Chicago. May 1998.
5. Targeted disruption of the TR β 2 locus in mice. **Symposium Presentation.** 6th Annual meeting of the Boston Area Receptor Society. June 1998.
6. Transgenic models of thyroid hormone resistance. **Symposium Presentation.** 80th annual meeting of the Endocrine Society, S27-3, p 36. New Orleans, LA. June 1998.
7. Thyroid Hormone: Old hormone New Insights. **Plenary presentation.** Scientific Session 50th Anniversary Symposium University of the West Indies, Kingston Jamaica. July 1998.
8. Functional consequences of glucose transporter deficiency in the heart. **Plenary Presentation.** Robert Wood Johnson Foundation, Minority Medical Faculty Development Program, 15th Anniversary Meeting, Princeton NJ October 1998.
9. GLUT4 and Diabetes: Novel insights from tissue specific knockout mice. **Symposium Presentation.** International Motor City Diabetes Symposium, Detroit, Michigan. October 1998.
10. Glucose transporters and the heart. **Invited Lecture.** Endocrinology and Metabolism Research Seminar, Northwestern University School of Medicine. October 1998.
11. Regulation of the hypothalamic-pituitary-thyroid axis: Novel insight from transgenic and gene-knockout mice. **Invited Lecture.** Boston University, Department of Biology: Physiology, Endocrinology and Neuroscience seminar. November 1998.
12. Glucose transporters and their role in cardiac function. **Invited Lecture.** Research Seminar, Division of Endocrinology and Molecular Medicine, University of Kentucky School of Medicine (Lexington). March 1999.
13. Elucidation from transgenic mice of the role of glucose transporters in the heart. **Invited Lecture.** Lecture program of the Carlos Chagas Filho Biophysics Institute at the Federal University of Rio de Janeiro, Rio de Janeiro Brasil. August 1999.
14. Elucidation from transgenic mice of the role of glucose transporters in the heart. **Invited Lecture.** Post Graduate Seminar in biology. Centro Biomedico, Instituto de Biologia Roberto Alcantara Gomes, Universidade do Estado do Rio de Janeiro. Rio de Janeiro Brasil. August 1999.

Regional, national or international contributions contd..

15. Glucose transporters and the heart: Recent insight from transgenic and knockout mice. **Plenary presentation.** 14th Annual Meeting of the Federation of Experimental Biological Societies of Brasil (FeSBE), Caxambu, Brasil, August, 1999.
16. Phenotypes of cardiac insulin resistance. **Invited Lecture.** Cardiology Research Seminar, University of Texas-Houston, November, 2000.
17. Phenotypes of cardiac insulin resistance. **Invited Lecture.** University of Pennsylvania, Diabetes and Endocrinology Research Seminar. April 2001.
18. Divergent phenotypes of cardiac insulin resistance: insights from cardiac selective knockout mice. **Symposium Presentation.** Satellite Symposium of the XVII World Congress of the International Society for Heart Research: "Regulation of Energy Metabolism in the Heart and Vasculature". Banff, Alberta Canada. July 2001
19. Contribution of impaired insulin signaling or reduced glucose utilization to the metabolic abnormalities in the diabetic heart. **Invited Lecture.** Seventh Annual AstraZeneca Cardiovascular Young Investigators' Forum. Jackson Hole WY. October 2001
20. Van Meter Award Lecture. " Role of Thyroid Hormone Receptor Isoforms in the Regulation of the Hypothalamic Pituitary Thyroid Axis." **Plenary Lecture.** American Thyroid Association 73rd Annual Meeting, Washington D.C. November 2001.
21. Modeling the pathogenesis of metabolic changes in the diabetic heart using conditional gene targeting. **Invited Lecture.** Department of Cell Biology research Seminar, Brigham Young University, January 2002.
22. Genetic analysis of the contribution of insulin signaling and glucose transporters to the regulation of cardiac size and metabolism. **Invited Lecture.** Genetics of Cardiovascular and Metabolic Disease Workshop. University of Lausanne, Switzerland, February 2002.
23. Metabolic and Functional Consequences of Insulin Resistance in the Heart. **Plenary Lecture.** 2nd International Workshop on Insulin Resistance. San Diego, CA. February 2002.
24. Dissecting metabolic regulation in the heart using conditional gene targeting. **Symposium Presentation.** 35th annual meeting of the Society for the Study of Reproduction-Minisympodium on "Conditional Gene Disruption in the Mouse: Concepts and Applications". Baltimore, MD. July 2002.
25. Impaired insulin signaling and reduced glucose utilization in the pathogenesis of cardiac dysfunction in diabetes. **Invited Lecture.** 8th Annual AstraZeneca Cardiovascular Young Investigators' Forum. San Francisco, CA. October 2002.
26. Insulin Resistance in the Heart. **Invited Lecture.** Research Seminar, Joslin Diabetes Center, Boston MA. October 2002.
27. Metabolic Mechanisms for Cardiac Dysfunction in Diabetes and Obesity. **Invited Lecture.** Endocrine Grand Rounds, Beth Israel Deaconess Medical Center, Boston MA. November 2002.
28. The role of cardiac insulin resistance in the pathogenesis of heart disease in obesity and diabetes. **Invited Lecture.** Endocrine Grand Rounds, University of California San Diego, San Diego CA. December 2002.
29. Insulin Resistance in the Heart. **Invited Lecture.** Cardiology Research Seminar, University of Texas-Houston, Houston TX. March 2003
30. Cardiac Insulin Resistance Plays a Key Role in the Pathogenesis of Cardiac Dysfunction in Diabetes and Obesity. **Invited Lecture** Physiology and Pharmacology research Seminar, West Virginia University, Morgantown WV. March 2003.
31. Insulin Resistance in Cardiac Muscle and Heart Disease in Diabetes and Obesity. **Invited Lecture.** Morehouse School of Medicine Minority Biomedical Research Support Program Interdisciplinary Seminar Series. Atlanta, GA. May 2003.
32. Impaired Cardiac Insulin Signaling Leads to Early Cardiac Failure in Response to Pressure Overload Hypertrophy. **Invited Presentation.** First Annual Meeting: Society for Heart and Vascular Metabolism. Freiburg, Germany. June 2003

33. Insulin Resistance Leads to Multiple Mitochondrial Defects in the Mouse Heart. **Invited Presentation.** First Annual Meeting: Society for Heart and Vascular Metabolism. Freiburg, Germany. June 2003
34. Ordering and Interpreting Thyroid Function Tests. **Meet the Professor Session.** 85th Annual Meeting of the Endocrine Society, Philadelphia PA. June 2003

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Regional, national or international contributions contd..

35. Transcriptional and Metabolic Profiling of GLUT4 Deficient Hearts. **Invited Lecture.** Research Seminar, University of Oxford, University Laboratory of Physiology, Oxford, U.K. July 2003.
36. Transcriptional and Metabolic Profiles of GLUT4 Deficient Hearts. **Invited Lecture.** 2003 FASEB Summer Research Conference – Glucose Transporter Biology, Snowmass CO. August 2003.
37. Insulin Signaling and Mitochondrial Dysfunction in Diabetic Cardiomyopathy. **Invited Lecture.** 7th Annual Scientific Meeting of the Heart Failure Society of America, Las Vegas NV. September 2003.
38. Impaired Myocardial Insulin Signaling and Cardiac Dysfunction in Diabetes. **Invited Lecture.** Cardiovascular Breakfast Club, Department of Pathology, University of Washington, Seattle WA. November 2003.
39. Insulin Resistance in the Heart. **Invited Lecture.** Cardiovascular Research Seminar, Washington University School of Medicine in St. Louis, MO. November 2003.
40. Regulation Mitochondrial Integrity and Metabolic Plasticity in the Heart by Insulin Signaling. **Invited Lecture.** Research Seminar, Department of Biology, York University, Toronto Canada. November 2003.
41. Regulation of cardiac substrate utilization and mitochondrial function by insulin and PI-3 Kinase. **Invited Lecture.** Research Seminar, Department of Physiology, University of Toronto, Toronto, Canada. November 2003.
42. Glucose Transport and Mitochondrial Maladaptation in Diabetic Cardiomyopathy. **Invited Lecture.** Department of Physiology, Case Western Reserve University, Cleveland, OH. January 2004.
43. Insulin Resistance and Mitochondrial Dysfunction in the Heart. **Invited Lecture.** American Federation for Clinical Research, Western Regional Meeting, Carmel, CA. January 2004.
44. Myocardial Insulin Resistance and Cardiac Dysfunction in Obesity and Diabetes. **Invited Lecture.** Heart and Stroke/Richard Lewar Centre of Excellence Distinguished Visiting Professor, University of Toronto, Toronto Canada. February 2004.
45. Mechanism by Which Insulin Resistance Leads to Mitochondrial Dysfunction in Cardiac Muscle. **Invited Lecture.** Keystone Symposium on Diabetes Mellitus: Molecular Signaling, Genes and Therapeutics. Banff Canada. March 2004.
46. Myocardial Insulin Resistance and Mitochondrial Dysfunction in obesity and Diabetes. **Invited Lecture.** Association of Multicultural Students and the Diabetes Research and Training Center, University of Michigan, Ann Arbor MI, April 2004.
47. The Diabetic Heart – Starvation in the Face of Plenty. **Invited Lecture.** Cardiovascular Research Institute Seminar Series, Morehouse School of Medicine, Atlanta GA, May 2004.
48. Cardiac Insulin Resistance In Obesity. **Symposium Lecture.** Symposium on Insulin Signaling, ENDO 2004, 86th Annual Meeting of the Endocrine Society. New Orleans, LA, June 2004.
49. Myocardial Insulin Resistance Impairs Mitochondrial Function and the Metabolic Adaptation of the Heart to Pressure Overload Hypertrophy. **Symposium Lecture.** Symposium on Metabolism in Hypertrophic Remodelling of the Stressed Myocardium. XVIII World Congress of the International Society for Heart Research (ISHR). Brisbane, Australia, August 2004.
50. Insulin Signaling Modulates Mitochondrial Integrity and the Adaptation of the Heart to Ischemia and Hypertrophy in vivo. **Symposium Lecture.** ISHR Satellite 2004 South Africa – Cellular Injury in Ischemia. Symposium on Energy Metabolism in Cellular Injury and Ischemia. Kruger Park, South Africa, August 2004.

51. Altered Myocardial Insulin Signaling and Cardiac Dysfunction in Diabetes and Obesity. **Invited Lecture.** Department of Physiology, University of Pretoria, Pretoria, South Africa, August 2004.
52. Myocardial Insulin Resistance, Mechanisms and Consequences. **Invited Lecture.** Hatter Institute for Cardiology Research, University of Cape Town Faculty of Health Sciences, Cape Town, South Africa, August 2004.
53. Insulin Signaling, Fatty Acid Utilization and Mitochondrial Biogenesis. **Symposium Lecture.** Second Annual Meeting: Society for Heart and Vascular Metabolism. Montebello, Quebec Canada. September 2004.

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Regional, national or international contributions contd..

54. Mitochondrial Dysfunction and Insulin Resistance in the Myocardium in Obesity and Diabetes. **Invited Lecture.** Scientific Research Seminar, Amylin Pharmaceuticals, Inc. San Diego, CA. September 2004.
55. Insulin Resistance and Mitochondrial Dysfunction in Cardiac and Skeletal Muscle. **Invited Lecture.** University of Western Ontario, City Wide Endocrinology Grand Rounds. London, Ontario Canada. November 2004.
56. Multiple mechanisms by which insulin resistance impairs the myocardial adaptation to ischemia and hypertrophy. **Invited Lecture.** Robarts Research Institute, University of Western Ontario, London, Ontario Canada. November 2004.
57. Mitochondrial Dysfunction and Diabetic Cardiomyopathy. **Symposium Lecture.** Endocrinology Canada-International Symposium on the Science of Diabetes Complications: Implication for Novel Therapy. Toronto, Canada. November 2004.
58. Insulin Resistance and Mitochondrial Dysfunction in the Heart. **Invited Lecture.** Endocrinology Grand Rounds, University of Virginia, Charlottesville, VA. February, 2005.
59. New Insights into the Regulation of Mitochondrial Function and Myocardial Substrate Metabolism by Insulin. **Invited Lecture.** Cardiology Research Seminar, University of Texas-Houston, March, 2005.
60. Metabolic Mechanisms for Cardiac Dysfunction in Diabetes. **Invited Symposium Lecture.** 6th Symposium on the Molecular and Physiological Aspects of Type II Diabetes and Obesity, Nobel Forum, Karolinska Institute, Stockholm Sweden, April 2005.
61. Insulin Resistance and Mitochondrial Dysfunction in Cardiac and Skeletal Muscle. **Invited Lecture.** McGill University Health Center- Combined Endocrine Rounds. Montreal Canada, May, 2005.
62. Insulin Signaling – a Key Regulator of Cardiac Mitochondrial Phenotypes and the Metabolic Adaptations to Ischemia and Hypertrophy. **Invited Lecture.** Montreal Heart Institute – Cardiology Research Rounds. Montreal, Canada, May 2005.
63. Insulin Resistance and Mitochondrial Dysfunction in Cardiac and Skeletal Muscle. **Invited Lecture.** University of Montreal- Endocrinology Rounds. Montreal Canada, May 2005.
64. Insulin Signaling in the Heart – Multiple Layers of Metabolic Regulation. **Invited Lecture.** Columbia University School of Medicine. Research Seminar, Division of Preventive Medicine and Nutrition. New York, NY, May 2005.
65. Insulin Signaling: A Key Regulator of Cardiac Mitochondrial Phenotypes and the Metabolic Adaptations to Ischemia and Hypertrophy. **Invited Lecture.** Yale University School of Medicine, Cardiology Grand Rounds. New Haven, CT. May 2005.
66. Mechanisms Responsible for Diabetic Cardiomyopathy. **Invited Lecture.** CIHR/HSFC New Frontiers program – Cardiovascular Complications of Diabetes. Toronto Canada, May 2005.
67. PI3-Kinase Regulates Myocardial Mitochondrial Fatty Acid Utilization via Modulation of PGC-1beta Expression. **Invited Presentation.** International Society for Heart Research – 25th European Section Annual Meeting. Tromso, Norway June 2005

68. Paracrine Regulation of Cardiac Metabolism by Endothelial Insulin Signaling – Potential Role of the Nitric Oxide/Cyclic GMP Pathway. **Invited Presentation.** Third Annual Meeting: Society for Heart and Vascular Metabolism. Oxford, U.K. June 2005.
69. Type 2 Diabetes 20 years later. **Invited Lecture.** University of the West Indies Class of 1985 Scientific Symposium. Montego Bay Jamaica, July 2005.
70. Signaling pathways that mediate or modulate insulin-stimulated glucose utilization in the heart. **Invited Lecture.** 2005 FASEB Summer Research Conference – Glucose Transporter Biology, Snowmass CO. August 2005.

Regional, national or international contributions contd..

71. Mechanisms of acute and chronic regulation of myocardial substrate utilization by insulin. **Invited Lecture.** University of Alberta, Cardiovascular Research Group, Department of Pharmacology Research Seminar. Edmonton, Alberta, August 2005.
72. Diabetes and the heart: a conspiracy of mitochondrial dysfunction, oxidative stress and insulin resistance. **Invited Lecture.** Sanofi Aventis, 2005 RML Preceptorship, Phoenix Arizona, November 2005.
73. Regulation of Myocardial Mitochondrial Oxidative Capacity by PI3 Kinase and Akt. **Invited Lecture.** Keystone Symposium on Diabetes Mellitus and the Control of Cellular Energy Metabolism. Vancouver Canada. January 2006.
74. Regulation of myocardial mitochondrial metabolism by insulin and PI3kinase signaling. **Invited Lecture.** James Hogg iCAPTURE Center for Pulmonary and Cardiovascular Research. St. Paul's Hospital, University of British Columbia. Vancouver, Canada. January 2006.
75. Heart Disease in Diabetes - A Conspiracy of Insulin Resistance, Mitochondrial Dysfunction and Oxidative Stress. **Invited Lecture.** Severance Hospital Diabetes Center 10th Anniversary International Symposium on Diabetes Mellitus. Yonsei University, Seoul, South Korea, May 2006.
76. Using Knockout Mice to Unravel the Regulation of Vascular Function and Cardiac Metabolism by Insulin. **Invited Lecture.** Research Conference Department of Cardiology, Severance Hospital, Yonsei University School of Medicine, Seoul, South Korea, May 2006
77. The role of Mitochondria in the Pathogenesis of Obesity and Diabetes. **Invited Lecture.** Endocrinology Grand Rounds. Chung-Ang University Hospital, Seoul South Korea, May 2006.
78. Nitric Oxide – Integrating Myocardial Insulin Signaling and Metabolism. **Invited Symposium Lecture.** 28th Annual International Society for Heart Research, North American Section Meeting, Toronto Canada, June 2006.
79. Regulation of Mitochondrial Function by Insulin and PI3Kinase. **Symposium Lecture.** Fourth Annual Meeting: Society for Heart and Vascular Metabolism. Semiahmoo, Washington. September 2006.
80. Cardiac Dysfunction in Obesity and Diabetes, the Mitochondrial Connection. **Invited Lecture.** Eli Lilly and Co. Indianapolis, Indiana September, 2006
81. Cardiac Dysfunction in Insulin Resistance and the Metabolic Syndrome – The Role of Mitochondria. **Invited Symposium Lecture.** 32nd Autumn Congress of the Korean Diabetes Association. Geongju, Korea, November 2006.
82. Insulin/Akt Signaling in Cardiac Hypertrophy and Failure. **Invited Symposium Lecture.** American Heart Association 2006 Scientific Sessions –Sunday Morning Program, Symposium on Energetics in Heart Failure, Pathology and Therapies. Chicago, IL, November 2006.
83. Oxidative Stress and Mitochondrial Uncoupling in the Pathogenesis of Obesity and its Cardiovascular Complications. **Invited Lecture.** Hatter Institute for Cardiology Research, University of Cape Town Faculty of Health Sciences, Cape Town, South Africa, December 2006.
- 84.** Why the Heart Needs Insulin. **Invited Lecture. Cardiovascular Club** Western Association for Medical Research Carmel, CA, February 2007
85. Integration of myocardial Growth and Metabolism by PI3 Kinase. **Invited Lecture.** State of the Art Lecture – Western Association for Medical Research, Carmel, CA February 2007.
86. Obesity, Diabetes and Cardiovascular Disease. The Mitochondrial Connection. **Invited Lecture.** Internal Medicine Grand Rounds. Feinberg School of Medicine, Northwestern University. Chicago, IL. February 2007.
87. Myocardial Mitochondrial Dysfunction in the Metabolic Syndrome – Molecular Mechanisms. **Symposium Lecture.** Keystone Meeting on Metabolic Syndrome and Cardiovascular Risk, Steamboat Springs CO. March 2007.
88. Growth Factors and Insulin in the Regulation of Cardiac Growth and Metabolism. **Invited Lecture.** Department of Pharmacology Seminar Series. Case Western Reserve University, Cleveland, OH, April 2007.

89. Insulin and Growth Factor Regulation of Cardiac Mitochondria. **Symposium Lecture.** American Society for Biochemistry and Molecular Biology, Annual Scientific Meeting at Experimental Biology '07. Washington, DC, May 2007.
90. Integral Role of Vascular Insulin Signaling in the Regulation of Myocardial Glucose Utilization by Insulin. **Invited Lecture.** Xth International Symposium on Insulin Receptors and Insulin Action, Stockholm Sweden, May 2007.
91. Mitochondria at the Cross Roads of Obesity, Diabetes and Cardiovascular Disease. **Invited Lecture. Pat Usher Memorial Lecture** – Endocrinology Grand Rounds, Division of Endocrinology Metabolism and Diabetes, Beth Israel Deaconess Medical Center, Harvard Medical School, May 2007
92. Obesity, Insulin Resistance and the Heart. **Invited Lecture.** Cardiology Grand Rounds, Yonsei University School of Medicine, Seoul South Korea, May 2007
93. Integral Role of Vascular Insulin Signaling in the Regulation of Myocardial Glucose Utilization by Insulin. **Invited Lecture.** Korean Diabetes Association, Vascular Biology Study Group, Seoul South Korea, May 2007
94. Myocardial Mitochondrial Dysfunction in the Metabolic Syndrome-Molecular Mechanisms **Symposium Lecture.** Korean Hypertension Society 2007 Spring Meeting. Seoul Korea, May 2007
95. Why the heart needs insulin. **Invited Lecture.** Department of Internal Medicine Seminar. Chung-Ang University Medical Center, Seoul South Korea, May 2007
96. Why the heart needs insulin. **Invited Lecture.** . Department of Internal Medicine Seminar, University of Alabama, Birmingham. June 2007
97. Myocardial Fatty Acid Oxidation Rates Remain Elevated in ob/ob Mice Despite Reversal of Obesity and Diabetes By Caloric Restriction. **Invited Presentation.** Fifth annual meeting of the Society for Heart and Vascular Metabolism, Maastricht, Netherlands, June 2007.
98. Regulation of Mitochondrial Metabolism by PI3 Kinase. **Symposium Lecture.** 2007 FASEB Summer Research Conference – Glucose Transporter Biology, Snowmass CO. August 2007.
99. Mitochondrial Dysfunction in the Heart in Insulin Resistance. **Plenary Presentation.** 22nd Annual Meeting of the Federation of Experimental Biological Societies of Brasil (FeSBE), Águas de Lindoia, Brasil, August, 2007.
100. Mitochondrial Uncoupling in the Heart in Obesity and Diabetes. **Symposium Lecture.** 2007, European Society of Cardiology Annual Congress, Vienna Austria, September 2007

Accepted Invitations.

Invited Lecture - The Centre for Critical Illness Research Lawson Health Research Institute, Victoria Research Labs. University of Western Ontario, October 2007.

Symposium Lecture – American Heart Association Scientific Sessions, November 2007

Invited Lecture – Cardiology Grand Rounds University of Colorado Denver, December 2007

Invited Lecture - Endocrinology Grand Rounds University of Colorado, Denver, December 2007

Invited Lecture – Endocrinology Research Seminar, University of Colorado, Denver, December 2007

Invited Lecture – Cardiology Research Seminar, University of Texas, Houston, January, 2008

Invited Lecture - Department of Pharmacology Research Seminar, University of Cincinnati, OH, April 2008

Invited Lecture - Endocrinology Grand Rounds , University of Pittsburgh School of Medicine, April 2008

Invited Lecture – Diabetes Center Research Conference, Albert Einstein College of Medicine, May , 2008

Plenary Lecture - 3rd annual Scientific Sessions of the Pulmonary Hypertension Association Annual International Conference (Houston), June 2008

Invited Lecture – 6th Annual Meeting of the Society for Heart and Vascular Metabolism, Boston June 2008

Invited Lecture – AHA BCVS Research Conference, July 2008

Boron Visiting Professorship – UCLA, November, 2008