BIOGRAPHICAL SKETCH

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NAME	POSITION TITLE
Owen P. McGuinness	
eRA COMMONS USER NAME mcguinop	Professor of Mol Physiol & Biophys

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
State Univ. of N. Y. , Stony Brook, N. Y.	B.Sc.	1978	Biology
LSU Sch. of Med. New Orleans, LA	Ph.D.	1983	Physiology

A. Personal statement: I am director of Vanderbilt Mouse Metabolic Phenotyping Center- Metabolic Pathophysiology Core, Associate Director of the Diabetes Research and Training Center and an expert in assessing metabolic flux and nutrient bioavailability in multiple model systems. I am an expert in mouse phenotyping (islet function, energy balance and metabolism) and in performing metabolic clamps in chronically catheterized conscious mice and large animals. My research focuses on the impact of inflammation, sepsis and endotoxemia on hepatic and muscle glucose and lipid metabolism and neuro-endocrine function in multiple species. I will provide services through the MMPC and guidance in assessing insulin action in this application.

B. Positions and Honors:

1978-83 Ph.D. Student, Dept. of Physiology, LSU Sch. of Med. New Orleans, LA
1983-86 Post Doctoral Fellow, Research Associate, Mol. Physiol. & Biophys. Dept, Vanderbilt Univ.
1986-89 Research Instructor, Molecular Physiology & Biophysics Dept, Vanderbilt Univ. Sch. of Med.
1989-96 Assistant Professor, Dept, of Molecular Physiology & Biophysics, Vanderbilt Univ. Sch. of Med.
1996-06 Associate Professor, Molecular Physiology & Biophysics Dept, Vanderbilt Univ. Sch. of Med.
2006-present Professor, Molecular Physiology & Biophysics Dept, Vanderbilt Univ. Sch. of Med.
2001-present Director, Metabolic Pathophysiology Core: Mouse Metabolic Phenotyping Center
2011-present Associate Director, Diabetes Research and Training Center
2012-present Director Hormone Assay and Analytical Services Core

Current Professional Positions:
Amer. Diabetes Assoc.; American Physiological Society; Amer. J. Physiol. Endocrin. & Metab. (Ed. Board)

Honors: 1983-84 Bell Award, American Heart Association; 1989-92 JDF, Career Development Award

C. Selected peer-reviewed publications (selected list of 109 publications)

1. Donmoyer,C.M. Lacy D.B., Zhang,Y., Chen, S.S., and McGuinness,O.P Impact of Chronic Fructose infusion on hepatic metabolism during TPN administration Am. J. Physiol 283:E1151-E1158, 2002.
2. Chueh, F, Malabanan, C. and McGuinness, O.P. Impact of portal glucose delivery on glucose metabolism in the conscious unrestrained mouse. Am. J Physiol. 291:E1206-11, 2006.
3. Wang, Y., Oeser, J.K., Yang, C., Sarkar, S., Hackl, S.I., Hasty, AH, McGuinness, O.P., Paradee, W., Hutton, J.C., Powell, D.R., O'brien, R.M. Deletion of the gene encoding the ubiquitously expressed glucose-6-phosphatase catalytic subunit-related protein (UGRP)/G6pase-beta knockout mice results in lowered plasma cholesterol and elevated glucagon. J. Biol. Chem. 281:39982-9, 2006. PMID:17023421
4. Wang, Y., Martin, C,C., Oeser, J.K., Sarkar, S, McGuinness, O.P., Hutton, J.C., O'Brien. R,M. Deletion of the gene encoding the islet-specific glucose-6-phosphatase catalytic subunit-related protein autoantigen results in a mild metabolic phenotype. Diabetologia 50:774-8, 2007. PMID:17265032
5. Pound, L.D., Sarkar,S., Benninger, R.K.P. Wang, Y., Suwanichkul, A., Shadoan, M.K. Printz, R.L. Oeser, J.K. Lee, C.E. Piston, D.W. McGuinness, O.P., Hutton, J.C., Powell, D.R., O'Brien, R.M. Deletion of the Mouse Slc30a8 Gene Encoding Zinc Transporter-8 Results in Impaired Insulin Secretion. Endocrinology 421:371-6, 2009 PMID: 19450229
6. McGuinness O.P. Ayala J.E., Laughlin M.R. and Wasserman, D.H. NIH Experiment in Centralized Mouse Phenotyping: The Vanderbilt Experience and Recommendations for Evaluating Glucose Homeostasis in

the Mouse. Am. J. Physiol. 297: E849 - E855, 2009 PMC2763792
7. Gao, Z., Yin, J, Zhang, J., He, Q., McGuinness, O.P. and Ye, J. Inactivation of NF-κB p50 leads to insulin sensitization in liver through post translational inhibition of P70S6K. J. Bio. Chem 284:18368-76, 2009 PMCID: PMC2709339
8. McGuinness O.P. Ayala J.E., Laughlin M.R. and Wasserman, D.H. NIH Experiment in Centralized Mouse Phenotyping: The Vanderbilt Experience and Recommendations for Evaluating Glucose Homeostasis in the Mouse. Am. J. Physiol. 297: E849 - E855, 2009 PMCID: PMC2763792
9. Ayala J.E, Samuel V.T, Morton G.J, Obici S, Croniger CM, Shulman GI, Wasserman DH, McGuinness OP; for the NIH Mouse Metabolic Phenotyping Center Consortium. Standard operating procedures for describing and performing metabolic tests of glucose homeostasis in mice. Disease Models & Mechanisms 3:525-34,2010 PMCID: PMC2938392
10. Shi, S., Hida, A., McGuinness, O.P., Wasserman, D, Shin Yamazaki, S. and Johnson, C.H. Circadian Clock Gene Bmal1 Is Not Essential After All; Functional Replacement with its Paralog, Bmal2. Current Biology 20(4):316-21,2010. PMCID:PMC2907674
11. Tweedell A, Mulligan KX, Martel JE, Chueh F-Y, Santomango T, and McGuinness, O.P. Metabolic response to endotoxin in vivo in the conscious mouse: role of interleukin-6. Metabolism 60: 92-98, 2011. PMCID: PMC2889039
12. Mulligan, K.X., Morris, R.T., Otero, Y.F., Wasserman, D.H., McGuinness, O.P. Disassociation of Muscle Insulin Signaling and Insulin-stimulated Glucose Uptake Following LPS-induced Inflammation. PLOS1 e30160, 2012. PMCID:PMC 3262801
13. Haldar S.M, Jeyaraj D, Anand P, Zhu H, Lu Y, Prosdocimo DA, Eapen B, Kawanami D, Okutsu M. Brotto L, Fujioka, Kerner J, Rosca MG, McGuinness, O.P**.**, Snow RJ, Russell AP, Gerber AN, Bai X, Yan Z, Nosek TM, Brotto M, Hoppel CL and Jain MK. Kruppel-like factor 15 regulates skeletal muscle lipid flux and exercise adaptation. Proceedings of the National Academy of Sciences 109: 6739-6744, 2012. PMCID:PMC3340075
14. Shi, S., Ansari, T., McGuinness, O.P., Wasserman, D.H. and Johnson, C.H. Circadian Disruption Leads to Insulin Resistance and Obesity. Current Biology 23:1-10, 2013. PMC3595381
15. Otero, Y.F., Lundblad, T.M., Ford, E.A., House, L.M., and McGuinness, O.P. Liver but not adipose tissue is responsive to the pattern of enteral feeding. Physiological Reports 2: e00250, 2014. PMCID:PMC3966249

D. Research Support (ongoing or completed last three years):

U24 DK059637 (Wasserman) 6/01/11-5/31/16
NIH/NIDDK
Vanderbilt Mouse Metabolic Physiology Center
This is a service center for investigators interested in assessing metabolic and cardiovascular phenotypes in mice.
Role: Metabolic Pathophysiology Core Director and Associate Director of Center

R01 DK043748 (McGuinness) 4/1/10-3/31/14
NIH/NIDDK
Nutrition, infection and hepatic carbohydrate metabolism
The major goal is to understand how infection alters hepatic glucose metabolism during nutrient delivery
Role: PI

R01 DK078188-010 (McGuinness) 6/1/09-05/31/15
NIH
Impact of inflammation on the Control of Muscle Glucose Uptake
Role:PI
The studies examine the impact of inflammation on muscle insulin action in mice

R25 GM0867710 (McGuinness) 4/01/09-03/31/13
NIH

A short course: an Organ Systems Approach to Target the Metabolic Syndrome
Role: P.I.
This is a 2 week lab course for assessing animal behavior, cardiovascular system and metabolism.

P60 DK020593-29 (Powers) 06/01/07-03/31/17
NIH
Diabetes Research and Training Center
The DRTC at Vanderbilt is one of a network of Core Centers to conduct research and training in diabetes mellitus and related endocrine and metabolic disorders.
Role: Associate Director and Hormone Assay and Analytical Services Core Director

5T32 DK007563-24 (O'Brien) 06/01/2008-05/31/2018
NIH/NIDDK
Multidisciplinary Training in Molecular Endocrinology
This is a training grant that funds 8 predoctoral and 4 postdoctoral trainees each year.
Role: Committee Member

R01 DK075046-01 (McGuinness) 07/15/07-04/30/010
NIH (Subcontract to Harvard)
PPAR Delta Functions in Liver
The goal is to provide scientific input into and implementation of studies performed in the MMPC to assess the impact of PPAR on lipid metabolism in mice.
Role: P.I. of Sub contract

R01 DK076027-01 (O'Brien) 09/01/06-08/31/09
NIH
The role of IGRP in the Pathogenesis of Type I Diabetes
Project will assess whether the absence of IGRP is sufficient to prevent or delay the onset of type 1 diabetes.
Role: Collaborator

U01 AI61223 (Wikswo) 02/01/05-01/31/10
NIH
Metabolic Discrimination of Unknown Bacterial Pathogens
Role: Collaborator

1R24 DK093421-01 (Cone) 07/01/2103-06/30/2018
NIH
Molecular and Cellular Basis for the Efficacy of Bariatric Surgery
Goal: Perform studies designed to assess glucoregulatory effects of bariatric surgery in mice.
Role: PI