BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME	POSITION TITLE
Linda C. Samuelson	Professor of Molecular & Integrative Physiology
eRA COMMONS USER NAME (credential, e.g., agency login) samuelson	

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
Michigan State University	B.S.	1972	Biochemistry
University of Chicago	Ph.D.	1984	Microbiology
University of Michigan	Postdoc.	1984-1988	Molecular Genetics

A. Positions and Honors

Positions and Employment

1984-1988 Postdoctoral Fellow, University of Michigan, Department of Human Genetics, Ann Arbor, MI
1988-1991 Assistant Research Scientist, Univ. Michigan, Dept Human Genetics, Ann Arbor, MI
1991-1998 Assistant Professor, University of Michigan, Department of Physiology, Ann Arbor, MI
1994-present Embryonic Stem Cell Director, University of Michigan Transgenic Animal Model Core
1998-2003 Associate Professor, University of Michigan, Department of Physiology, Ann Arbor, MI
2003-present Professor, University of Michigan, Department of Molecular and Integrative Physiology

Honors and Awards

1999 Career Development Award, University of Michigan, Ann Arbor, MI
1999-2006 Editorial Board, Physiological Genomics
2006-present Associate Editor, Physiological Genomics
2008-present Editorial Board, Gastroenterology
2009-present Editorial Board, Am J Physiology-Gastrointestinal and Liver Physiology
2008-2009 Regular Member, Gastrointestinal Cell and Molecular Biology (GCMB) Study Section
2009-2012 Regular Member, Clinical Integrative Molecular Gastroenterology (CIMG) Study Section

Memberships and Offices in Professional Societies

American Gastroenterological Association
PhD, MD/PhD, DVM Committee, 2002-2004
Research Awards Committee, 2004-2006; 2009-present
Counselor, Hormones and Receptors Section, 2005-2008; Nominating Committee, 2009
AGA Institute Research Awards Panel 2009-2012

American Physiological Society
Gastrointestinal and Liver Section Steering Committee; 2000–2009
Gastrointestinal and Liver Section Awards Coordinator; 2006-2009
Committee on Committees; 2003-2007; Vice Chair 2009; Chair 2010-11
Councilor; 2008-2011

B. Selected peer-reviewed publications (From 68 peer-reviewed and 12 invited chapters/reviews.)

1. Friis-Hansen, L., F. Sundler, Y. Li, P.J. Gillespie, T.L. Saunders, J.K. Greenson, C. Owyang, J. Rehfeld and L.C. Samuelson. Impaired Gastric Acid Secretion in Gastrin-Deficient Mice. *Am. J. Physiol.* 274:G561-G568 (1998)

2. Lacourse, K.A., L.J. Swanberg, P.J. Gillespie, J.F. Rehfeld, T.L. Saunders and L.C. Samuelson. Pancreatic Function in Cholecystokinin-Deficient Mice: Adaptation to Dietary Protein Does Not Require CCK. *Am. J. Physiol.* 276:G1302-G1309 (1999)
3. Lay, J.M., P.J. Gillespie, and L.C. Samuelson. Murine Prenatal Expression of Cholecystokinin in Neural Crest, Enteric Neurons and Enteroendocrine Cells. *Devel. Dynamics* 216:190-200 (1999)
4. Lay, J., C. Jenkins, L. Friis-Hansen and L.C. Samuelson. Molecular Structure and Developmental Expression of the Mouse CCK-B Receptor Gene. *Biochem. Biophys. Res. Comm.* 272:837-842 (2000)
5. Friis-Hansen, L., K.A. Lacourse, L.C. Samuelson, and J.J. Holst. Attenuated Processing of Proglucagon and Glucagon-Like Peptide-1 in Carboxypeptidase E-Deficient Mice. *J. Endocrinology* 169:595-602 (2001)
6. Sun, D., L.C. Samuelson, T. Yang, Y. Huang, A. Paliege, T. Saunders, J. Briggs, and J. Schnermann. Mediation of Tubuloglomerular Feedback by Adenosine: Evidence from Mice Lacking Adenosine 1 Receptors. *Proc. Natl. Acad. Sci. USA* 98: 9983-9988 (2001)
7. Franic, T.V., L.M. Judd, S.P. Barrett, D. Robinson, P.A. Gleeson, L.C. Samuelson, and I.R. van Driel. Regulation of Gastric Epithelial Cell Development Revealed in H+/K+ ATPase ш Subunit- and Gastrin-Deficient Mice. *Am. J. Phys.* 281:G1502-G1511 (2001)
8. Zavros, Y., A. Ferguson, L.C. Samuelson, and J.L. Merchant. Hypergastrinemia in Response to Gastric Inflammation Suppresses Somatostatin. *Am. J. Phys.* 282:G175-G183 (2002)
9. Zavros, Y., G. Rieder, A. Ferguson, L.C. Samuelson, and J.L. Merchant. Genetic or Chemical Hypochlorhydria is Associated with Inflammation that Modulates Parietal and G Cell Populations. *Gastroenterology* 122:119-133 (2002)
10. Hinkle, K.L., G.C. Bane, A. Jazayeri, and L.C. Samuelson. Enhanced Calcium Signaling and Acid Secretion in Parietal Cells Isolated from Gastrin-Deficient Mice. *Am. J. Physiol* 284:G145-G153 (2003)
11. Samuelson, L.C., and K.L. Hinkle. Insights into the Regulation of Gastric Acid Secretion Through Analysis of Genetically Engineered Mice. *Annu. Rev. Physiol.* 65:383-400 (2003)
12. Chen, D., C.-M. Zhao, R. Hakanson, L.C. Samuelson, J.F. Rehfeld, and L. Friis-Hansen. Altered Control of Gastric Acid Secretion in Gastrin-Cholecystokinin Double Mutant Mice. *Gastroenterology* 126:476-487 (2004).
13. Tashiro, M., L.C. Samuelson, R.A. Liddle, and J.A. Williams. Calcinerin Mediates Pancreatic Growth in Protease Inhibitor-Treated Mice. *Amer. J. Physiol. Gastrointest. Liver Physiol.* 286:G784-G790 (2004).
14. Kaur, S., D. Ziemer, O. Norkina, L. Samuelson, R.C. De Lisle. Acidic Duodenal pH Alters Gene Expression in the Cystic Fibrosis Mouse Pancreas. *Am J Physiol* 287:G480-90 (2004).
15. Franic, T.V., L.M. Judd, L.C. Samuelson, P.A. Gleeson, and I.R. van Driel. Growth Factors Associated with Gastric Mucosal Hypertrophy in Autoimmune Gastritis. *Am. J. Physiol.* 287:G910-G918 (2004)
16. Lay, J.M., G. Bane, C.S. Brunkan, J. Davis, L. Lopez-Diaz, and L.C. Samuelson. Enteroendocrine Cell-Expression of a Cholecystokinin Gene Construct in Transgenic Mice and Cultured Cells. *Amer. J. Physiol. Gastrointest. Liver Physiol* 288:G354-G361 (2005).
17. Zavros, Y., K. Eaton, W. Kang, S. Rathinavelu, V. Katukuri, J.Y. Kao, L.C. Samuelson, and J.L. Merchant. Chronic Gastritis in the Hypochlorhydric Gastrin-Deficient Mouse Progresses to Adenocarcinoma. *Oncogene* 24:2354-2366 (2005).
18. Kang, W., S. Rathinavelu, L.C. Samuelson, and J.L. Merchant. Expansion of the Gastric Mucous Neck Cell Compartment Correlates with Elevated Levels of Interferon Gamma and MUC6. *Laboratory Investigation* 85:702-715 (2005).
19. Jain, R.N., C.S. Brunkan, C.S. Chew, and L.C. Samueslon. Gene Expression Profiling of Gastrin Target Genes in Parietal Cells. *Physiol. Genomics* 24:124-132 (2006).
20. Lopez-Diaz, L., K.L. Hinkle, R.N. Jain, Y. Zavros, C.S. Brunkan, T. Keeley, K.A. Eaton, J.L. Merchant, C.S. Chew, and L.C. Samuelson. Parietal Cell Hyperstimulation and Autoimmune Gastritis in Cholera Toxin Transgenic Mice. *Amer. J. Physiol.- Gastrointesl Liver Physiology* 290:G970-G979 (2006).
21. Jain, R.N, and L.C. Samuelson. Differentiation of the gastric mucosa. II. Role of Gastrin in Gastric Epithelial Cell Proliferation and Maturation. *Amer. J. Physiol.* 291:G762-5 (2006).
22. Samuelson, L.C. Genetically Engineered Mouse Models of Gastric Physiology. In: *Physiology of the Gastrointestinal Tract, Fourth Edition*. Leonard R. Johnson (Ed.), Academic Press, pp. 1293-1312, 2006.
23. Jain, R.N. and L.C. Samuelson. Transcriptional Profiling of Gastrin-Regulated Genes in Mouse Stomach. *Physiol. Genomics* 29:1-12 (2007).

24. Lopez-Diaz, L., R. Jain, T.M. Keeley, K.L. VanDussen, C.S, Brunkan, D.L. Gumucio, and L.C. Samuelson. Intestinal Neurogenin 3 Directs Differentiation of a Bipotential Secretory Progenitor to Endocrine Cell Rather than Goblet Cell Fate. *Dev. Biol.* 309:298-305 (2007).
25. Zavros, Y., M. Waghray, A. Tessier, L. Bai, A. Todisco, D.L. Gumucio, L.C. Samuelson, A. Dlugosz, and J.M. Merchant. Reduced Pepsin A Processing of Sonic Hedgehog in Parietal Cells Precedes Gastric Atrophy and Transformation. *J. Biol. Chem*. 282:33265-74 (2007).
26. Qiao, X.T., J.W Ziel, W. McKimpson, B.B. Madison, A. Todisco, J.L. Merchant, L.C. Samuelson, and D.L. Gumucio. Prospective Identification of a Multi-Lineage Progenitor in Stomach Epithelium. *Gastroenterology* 133:1989-98 (2007).
27. Lo, C-M, L.C. Samuelson, J.B. Chambers, A. King, J. Heiman, R.J. Jandacek, R.R. Sakai, S.C. Benoit, H.E. Raybould, S.C. Woods, and P. Tso. Characterization of mice lacking the gene for cholecystokinin. *Am J Physiol Regul Integr Comp Physiol* 294:803-10 (2008).
28. Jain, R.N., A.A. Al-Menhali, T.M. Keeley, J. Ren, M. El-Zatari, X. Chen, J.M. Merchant, T.S. Ross, C.S. Chew, L.C. Samuelson. Hip1r is expressed in gastric parietal cells and is required for tubulovesicle formation and cell survival in mice *J. Clinical Investigation* 118:2459-70 (2008).

C. Research Support

Current: Samuelson Research Laboratory

National Institutes of Health 2RO1 DK56882 2/1/07-1/31/12
Regulation of Gastric Epithelial Cells in the Mouse – The aims of the project are: 1) Test the hypothesis that high intracellular cAMP leads to hyperstimulation and parietal cell death in Ctox7 transgenic mice; 2) Test the hypothesis that autoimmune gastritis in Ctox7 is predominantly a Th1 response dependent on IFN-gamma; 3) Test the hypothesis that development of AIG in Ctyox7 is strain-and environmental pathogen dependent.
Principal Investigator Linda Samuelson
Role: P.I.

National Institutes of Health R01 DK078927 4/01/08-3/31/13
Mechanisms of Gastric Mucosal Transformation in Hip1r-Deficient Mice – The aims of the project are: 1) Elucidate the role of gastrin for hyperplasia and cellular transformation of the corpus and antrum in Hip1r-deficient mice; 2) Characterize gastritis in Hip1r-deficient mice; 3) Dissect increased hedgehog signaling in Hip1r-deficient mice.
Principal Investigator Linda Samuelson
Role: P.I.

Administrative Supplement: 5/1/09-8/31/10
Recovery Act Funds for Administrative Supplements Providing Summer Research Experiences for Students and Science Educators:.

Current: Transgenic Core

National Institutes of Health P30 AG13283-10 7/1/05-6/30/10
Cellular and Molecular Biology of Aging - Transgenic core support for Center investigators.
Principal Investigator John Faulkner
Role: Director of Embryonic Stem Cell Core (Transgenic Core)

National Institutes of Health P30 DK034933-21 12/1/05-11/30/10
Gastrointestinal Hormone Research Center - Transgenic core support for Center investigators.
Principal Investigator Chung Owyang
Role: Co-Director of Molecular Biology Core (Transgenic Core)

National Cancer Institute P30 CA46592 6/1/06-5/31/11
University of Michigan Cancer Center Support Grant- Transgenic core support for Center investigators.
Principal Investigator Max Wicha
Role: Director of Embryonic Stem Cell Core (Transgenic Core)

National Institutes of Health P30 AR48310 8/1/06-7/31/11
University of Michigan Rheumatic Diseases Center – Transgenic core support for Center Investigators
Principal Investigator David Fox
Role: Director of Embryonic Stem Cell Core (Transgenic Core)

Recent Past: Samuelson Research Laboratory
National Institutes of Health PO1 DK62041 8/1/02-7/31/07
Endocrine Cell Lineage Decisions in the Intestine – The aims of this project are: 1) Define regions of the mouse CCK gene that direct expression in enteroendocrine cells; 2) Test the hypothesis that NeuroD1/ BETA2 induces endocrine-cell development and CCK gene expression; 3) Test the hypothesis that CCK- and secretin-cells share a similar developmental lineage.
Principal Investigator Juanita Merchant
Role: P.I. Subproject 2: *Endocrine Cell Lineage Decisions in the Intestine*

University of Michigan Biomedical Research Council New Initiative for Basic Science 8/1/06-7/31/07

Mechanisms of Gastric Mucosal Transformation in Hip1r-Deficient Mice – *The aims of this project are: 1) Characterize gastritis in Hip1r-deficient mice; 2) Dissect the role of gastric acid and gastrin for the development of hyperplasia and cellular transformation; 3) Examine the mechanism of cellular transformation of the gastric mucosa of Hip1r-deficient mice to an intestinal phenotype.*
Principal Investigator Linda Samuelson
Role: P.I.

Recent Past: Transgenic Core

Michigan Life Sciences Corridor Award 9/1/01-8/31/06
Michigan Animal Model Consortium- This funding builds infrastructure for production of genetically modified animal models and broad access to this technology for state of Michigan investigators.
Principal Investigator George VandeWoude (Van Andel Institute)
Role: Co-Investigator and P.I. of the University of Michigan Node