

LINDA C. SAMUELSON, PH.D.
CURRICULUM VITAE
June 2019

PERSONAL DATA

Title: John A. Williams Collegiate Professor of Gastrointestinal Physiology

Work Address: Department of Molecular & Integrative Physiology
University of Michigan Medical School
2041 Biomedical Science Research Building
109 Zina Pitcher Place
Ann Arbor, MI 48109-2200
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EDUCATION

1972-1976 B.S. Biochemistry, Lyman Briggs College, Michigan State University
1977-1984 Ph.D. Microbiology, University of Chicago; Laboratory of Rosann Farber, Ph.D.

POSTDOCTORAL TRAINING

1984-1988 Postdoctoral Research Fellow, Department of Human Genetics,
University of Michigan, Ann Arbor; Laboratory of Miriam Meisler, Ph.D.

ACADEMIC APPOINTMENTS

1988-1991 Assistant Research Scientist, Department of Human Genetics, University
of Michigan, Ann Arbor, MI
1991-1998 Assistant Professor, Department of Physiology, University of Michigan,
Ann Arbor, MI
1998-2003 Associate Professor with tenure, Department of Physiology, University of
Michigan, Ann Arbor, MI
2003-present Professor, Department of Molecular & Integrative Physiology, University
of Michigan, Ann Arbor, MI
2010-present Professor, Department of Internal Medicine, Division of Gastroenterology
& Hepatology, University of Michigan, Ann Arbor, MI
2011-present John A. Williams Collegiate Professor of Gastrointestinal Physiology,
University of Michigan, Ann Arbor, MI

ACADEMIC ADMINISTRATIVE APPOINTMENTS

1994-present Embryonic Stem Cell Director, Transgenic Animal Model Core,
University of Michigan Biomedical Core Facilities, Ann Arbor, MI
2000-2003 Graduate Program Chair, Department of Molecular & Integrative
Physiology, University of Michigan, Ann Arbor, MI
2010-2018 Associate Director, Center for Organogenesis,
University of Michigan, Ann Arbor, MI
2012-2018 Predoctoral Training Program Director, Training in Basic and
Translational Digestive Sciences NIH T32 Training Grant
2013-present Associate Director, Training in Organogenesis, NIH T32 Training Grant
2018-present Co-PI and Co-Director, Training in Basic and Translational Digestive
Sciences NIH T32 Training Grant

2018-present Interim Director, Center for Organogenesis, University of Michigan, Ann Arbor, MI

EDITORIAL POSITIONS

Editor-in-Chief

APSselect (2018-present)

Cellular and Molecular Gastroenterology and Hepatology (2017-2019)

Co-editor for special issue: *Organoids and Engineered Organ Systems*

Associate Editor:

APSselect (2014-2017)

Annual Review of Physiology – Gastrointestinal Physiology Editor (2011-present)

Gastroenterology (2011-2016)

Physiological Genomics (2006-2010)

Editorial Board:

Cellular and Molecular Gastroenterology and Hepatology (2014-present)

Gastroenterology (2008-2011)

American Journal of Physiology: Gastrointestinal & Liver Physiology (2000-2003; 2009-present)

Physiological Genomics (1999-2006)

SCIENTIFIC REVIEW ACTIVITIES

Grant Review Committee Regular Member:

NIH, NIDDK DDN SEP Fellowship Review Panel (2018-present)

NIH, Clinical, Integrative & Molecular Gastroenterology (CIMG) Study Section (2009-2012)

NIH, Gastrointestinal Cell and Molecular Biology (GCMB) Study Section (2008-09)

Ad Hoc Review Panel Member:

NIH, NIDDK Intestinal Stem Cell Consortium Review (2019)

NIH, NIDDK BSC, Intramural Research Program Review (2018)

NIH, NIDDK Ad Hoc Study Sections (1992, 2012, 2013, 2014, 2016, 2017)

Agence Nationale de la Recherche (ANR), France (2013, 2016)

Nebraska Biotechnology Core Research Facilities External Reviewer (2001)

Pilot Grant, The University of Michigan Gastrointestinal Peptide Center (1998)

NIH, NHLBI Program Project (1999)

The Wellcome Trust, Great Britain, UK (1999)

Pilot Grant, The University of Michigan Office of the Vice President for Research (1992-93)

Pilot Grant, The University of Michigan Diabetes Research and Training Center (1991-93)

American Diabetes Association, Michigan Affiliate (1990)

GRANT SUPPORT

Current:

R01 DK118023 (Samuelson)	09/17/18-06/30/22	3.6 cal months
NIH/NIDDK	\$274,628 (annual directs)	
<i>Mechanisms of Intestinal Stem Cell Injury and Repair</i>		
Role: Principal Investigator		

Clinical Research Award (Stoffel)	07/01/19-06/30/20	no calendar months
American College of Gastroenterology	\$50,000 (annual directs)	
<i>Dysregulation of Notch Signaling Pathway in Young Onset Colorectal Cancer</i>		
Role: Co-Investigator		

Pilot Project Grant (Samuelson)	04/01/19-03/31/20	no calendar months
Michigan Institute for Clinical and Heath Research	\$5,000 (annual directs)	
<i>Functional Characterization of Somatic NOTCH1 Mutations in Young Onset Colorectal Cancer</i>		
Role: Principal Investigator		
P30 DK034933 (Owyang)	08/1/17-05/31/22	0.6 cal months
NIH/NIDDK	\$972,429 (annual directs)	
<i>University of Michigan Center for Gastrointestinal Research</i>		
Role: Co-director of the Molecular Biology Core		
T32 DK094775 (Co-PIs: Owyang, Samuelson)	07/01/17 – 06/30/22	0.6 cal months
NIH/NIDDK	\$173,181 (annual directs)	
<i>Training in Basic and Translational Digestive Sciences</i>		
Role: Co-Principal Investigator		
T32 HS007505 (PI: Wellik)	8/1/17-4/30/22	0.6 cal months
NIH/NICHD	\$319,113 (annual directs)	
<i>Training Program in Organogenesis</i>		
Role: Associate Director		
<u>Recent Past:</u>		
P01 DK062041 (Merchant)	8/1/13-7/31/18	2.4 cal months
NIH/NIDDK	\$264,918	
<i>Cellular Decisions of Differentiation in the GI Tract</i>		
Role: Project Leader Research Project 3		
<i>Notch Regulation of Gastric Epithelial Cell Homeostasis and Tumorigenesis</i>		
R01 DK096972 (Samuelson)	9/18/13-8/31/18 (no cost extension)	2.4 cal months
NIH/NIDDK	\$217,500 (annual directs)	
<i>Notch Pathway Regulation of Intestinal Epithelial Cell Homeostasis</i>		
Role: Principal Investigator		

HONORS AND AWARDS

2020	Horace W. Davenport Distinguished Lecturer, The American Physiological Society
2016	Lyman Briggs College Distinguished Alumni Award, Michigan State University
2015	Fellow of the American Physiological Society, inaugural class
2015	R. Robert & Sally D. Funderburg Research Award in Gastric Cancer, The American Gastroenterological Association Research Foundation
2014	Morton I. Grossman award for outstanding research in Gastroenterology, The American Gastroenterological Association
2013	Takeda Distinguished Scientist Award, American Physiological Society Gastrointestinal & Liver Section
2012	Excellence in Mentorship Award, Program in Biomedical Sciences, The University of Michigan, Ann Arbor, MI
2012	Shanghai Cancer Forum Award, Gastrointestinal Cancer Symposium, Chinese Society of Clinical Oncology, Shanghai China
2011	John A. Williams Collegiate Professorship in Gastrointestinal Physiology
1999	The University of Michigan Career Development Award

1994	International Symposium on Gastrointestinal Hormones Travel Award
1992	NIH Workshop on Pancreatic Ducts Travel Award
1985-1988	NIH National Research Service Award Postdoctoral Fellowship
1984-1985	Arthur Thurnau Postdoctoral Fellowship in Molecular Genetics, University of Michigan
1976	B.S. with high honors, Michigan State University
1977-1982	NIH T32 Predoctoral Fellowship, University of Chicago
1972-1976	Dean's List, Michigan State University.

MEMBERSHIPS AND OFFICES IN PROFESSIONAL SOCIETIES

American Physiological Society member since 1995

President Elect/President/Past President; 2019-2022

Finance Committee; 2017-2019

Publications Committee; 2013-2016

Councilor (Elected position from full APS Membership); 2008-2011

Gastrointestinal & Liver Physiology Section Awards Coordinator; 2006-2008

Committee on Committees; 2003-2010; Vice Chair 2008-2009; Chair 2010

Gastrointestinal & Liver Physiology Section Steering Committee; 2000–2008

American Gastroenterological Association

Cellular and Molecular Gastroenterology Section (Previously named Regulatory Peptides,
Cell Signaling and Molecular Biology Section):

Chair; 2017-2019

Vice Chair; 2015-2017

Nominating Committee; 2007-2009

Abstract Review; 2006-2009 (Chair 2008)

Councilor; 2005-present

Chair, EGD: Acid/Ion Secretion and Regulation Abstract Review Committee; 2003-2006

Basic Science Subcommittee; 2015-2019

Research Awards Committee; 2004-2006, 2009-2012

PhD, MD/PhD, DVM Committee; 2002-2004

American Association for the Advancement of Science (AAAS) member since 2012

International Society for Stem Cell Research (ISSCR) member since 2018

UNIVERSITY OF MICHIGAN TRAINING GRANT AND CENTER MEMBERSHIPS

NIH T32 Training Grant Mentor:

Training in Basic and Translational Digestive Sciences (Predoctoral and Postdoctoral)

Co-PI 2018-present

Predoctoral Program Director 2012-2017

Cellular and Molecular Approaches to Systems and Integrative Biology (Predoctoral)

Cellular and Molecular Biology Program (Predoctoral)

Training Program in Organogenesis (Predoctoral and Postdoctoral)

Associate Director 2013-present

Tissue Engineering and Regeneration (Predoctoral and Postdoctoral)

Research Center Member:

Center for Organogenesis (Associate Director 2010-2019; Interim Director 2019-present)

University of Michigan Center for Gastrointestinal Research (Executive Committee
2005-present; Director of Molecular Biology Core)
University of Michigan Comprehensive Cancer Center

TEACHING ACTIVITIES

Current:

- 2017-present M1 Medical School: *GI Sequence*: Gastric Physiology (1 hr)
2014-present Cell & Developmental Biology 582: *Stem Cells in Organogenesis and Regenerative Medicine*; Gastrointestinal Stem Cells (2 hr)
2005-present University Laboratory Animal Training Program, *Design and Application of Transgenic Mice* (2 hr)
2004-present Physiology 510: *Systems Physiology*; Gastrointestinal Physiology (8 hr)

Past:

- 1999-2014 Physiology 555: *Integrative Genomics*; Course designer and co-director. Lectured on transgenic mouse technology and integrative genomics of gastrointestinal function
2006, 2011 Cell and Developmental Biology 680: *Organogenesis of the Gut*; Cell Lineage Decisions in the Intestine (3 hr)
2009 Pulmonary Core Research Lecture Series: *Knockout & Transgenic Mice in Pulmonary Research* (1 hr)
2000 Cell & Developmental Biology 680: *Organogenesis of the Gut*; Development of the Enteric Nervous System (3 hr)
1998, 2001 Pharmacology 502: *Topics in Cellular and Molecular Pharmacology*; Using Transgenic and Knockout Mice for Pharmacology Research (2 hr)
1995, 1997 Anatomy and Cell Biology: *Principles of Development*; ES-Transgenic Mice (2 hr)
1992, 1994 Anatomy and Cell Biology 660: *Cellular and Molecular Aspects of Development*; Developmental Approaches to Mouse Embryonic Stem Cell Biology (3 hr)
1992-2000 Cellular and Molecular Biology 850: *Graduate Student Seminar* (1 hr/wk); Course Director 1998-99
1993-5, 00-03 Physiology 606: *Graduate Student Seminar* (1 hr/wk); Course Director 2000-2003
1993, 97, 99 Physiology 590: *Molecular and Cellular Endocrinology*. Neuroendocrine Regulation of Obesity: Mouse Models (1/4 of course)
1993-2003 Physiology 502: *Dental School General Physiology*. Gastrointestinal Physiology (6 hr)
1988, 93, 95 Human Genetics 541: *Gene Structure and Expression*, Molecular Genetic Techniques (1988; 5 hr); Transgenic Mice and Gene Targeting (1993 and 1995; 2hr)

EXTRAMURAL INVITED PRESENTATIONS

- 12.3.19 University of Oregon, Institute of Molecular Biology. Seminar: *Gastrointestinal stem cells*.
10.6.19 Notch Meeting IX, Athens, Greece. Invited Speaker: *Notch Regulation of Intestinal Crypt Cell Plasticity*
4.29.19 University of California, Riverside, School of Medicine, Division of Biomedical Sciences. Seminar: *Notch pathway regulation of intestinal stem cell function*
2.27.19 Think Tank on the Origins of Gastrointestinal Cancers, National Cancer Institute, Session Chair, Invited Speaker: *Gastric cancer cell of origin: Dysregulated stem cell niche pathways and tumorigenesis*
9.13.18 Think Tank on Advancing Gastroesophageal Cancer Research. Invited Speaker: *Developmental pathways in gastric cancer*
7.25.18 Gordon Research Conference: Notch Signaling in Development, Regeneration &

- Disease. Invited Speaker: *Notch regulation of cellular plasticity in the intestinal stem cell niche*
- 4.12.18 University of Illinois Champaign-Urbana, Department of Molecular & Integrative Physiology Seminar: *Notch signaling is required for intestinal stem cell homeostasis and for repair after injury*
- 8.2.17 FASEB Summer Research Conference, Gastrointestinal Tract XVII: Current Biology of the GI Tract, Mucosa, Microbiota, and Beyond, Steamboat Springs, CO. Invited speaker: *Notch Pathway Regulation of Gastrointestinal Stem Cells*
- 5.7.17 Funderburg Symposium: 25 Years of Gastric Cancer Research, Digestive Diseases Week. Invited speaker: *Notch Pathway Induction of Gastric Tumorigenesis*
- 8.1.16 Gordon Research Conference: Notch Signaling in Development, Regeneration & Disease. Invited Speaker: *Notch Pathway Regulation of Gastrointestinal Stem Cells*
- 5.22.16 American Gastroenterological Association, Digestive Diseases Week, Symposium Speaker: *Notch Pathway Regulation of GI Stem Cells*
- 5.7.16 Commencement Address, Lyman Briggs College, Michigan State University
- 4.29.16 Nanyang Technological University/Lee Kong Chain School of Medicine Seminar, Singapore: *Notch Function in the Gastrointestinal Stem Cell Niche*
- 4.30.15 University of Pennsylvania, Division of Gastroenterology Career Development Roundtable: *A Career in Gastrointestinal Science: A Personal Perspective.*
- 4.29.15 University of Pennsylvania, Division of Gastroenterology Seminar: *Notch Regulation of Gastrointestinal Stem Cell Dynamics.*
- 2.11.15 Keystone CO, Keystone Symposia on Endoderm Lineages in Development and Disease, Short Talk; *Notch Pathway Regulation of Gastrointestinal Stem Cells*
- 12.27.14 Al Ain, United Arab Emirates, 9th International Scientific Conference for Medical Students in the GCC Countries, Keynote Address; *Notch Pathway Regulation of Gastrointestinal Stem Cells*
- 10.14.14 Vanderbilt University, Nashville, TN; *Notch Pathway Regulation of Gastrointestinal Stem Cells*
- 9.18.14 University of Rochester, Rochester, NY; *Notch Pathway Regulation of Gastrointestinal Stem Cells*
- 5.4.14 American Gastroenterological Association, Chicago, IL: Morton I. Grossman Award Lecture, *Gastrointestinal Stem Cells and Epithelial Cell Homeostasis*
- 3.25.14 GI and Pancreas Cancers SPORE Workshop, NCI, Shady Grove Campus, MD: *Notch Pathway Regulation of Gastric Stem Cells*
- 1.30.14 MD Anderson, New Frontiers in Gastrointestinal Cancers Seminar Series, Houston, TX: *Notch Pathway Regulation of Gastrointestinal Stem Cells*
- 12.19.13 Tokyo Medical and Dental University, Division of Gastroenterology and Hepatology, Tokyo, Japan: *Notch Pathway Regulation of Gastrointestinal Stem Cells*
- 12.18.13 JCA-AACR Special Joint Conference on Gastrointestinal Cancer, Tokyo, Japan: *Notch Pathway Regulation of Gastric Stem Cells*
- 8.28.12 Freston Symposium on Gastrointestinal Stem Cells, AGA Institute, Chicago, IL: *Notch Regulates of Gastrointestinal Stem Cell Number* (Meeting Co-organizer)
- 7.26.12 Shanghai Gastrointestinal Cancer Forum 2012, Shanghai, China: Plenary Keynote speaker: *Notch Regulation of Gastrointestinal Epithelial Cell Homeostasis*
- 4.10.12 Columbia University, Department of Genetics and Development, New York, NY: *Notch Pathway Regulation of Intestinal Stem Cell Function*
- 8.15.11 FASEB Summer Research Conference, Gastrointestinal Tract XIV: Stem Cells, Adaptation, Inflammation & Cancer, Steamboat Springs, CO: *Notch Signaling and Intestinal Epithelial Cell Differentiation* (Meeting Co-organizer)
- 5.26.11 University of North Carolina Chapel Hill, Center for Gastrointestinal Biology and

- Disease, Chapel Hill, NC: *Notch Signaling Regulates Stem Cell Survival and Cell Fate in the Intestine*
- 11.19.09 University of Pennsylvania, Division of Gastroenterology, Philadelphia, PA: *Do the Math: Notch Pathway Regulation of Intestinal Epithelial Cell Fate*,.
- 2.11.09 University of Wisconsin, Department of Nutritional Sciences, Madison, WI: *Do the MATH: Notch Signaling and Lineage Determination in the Intestine*
- 1.16.09 Washington University in St. Louis, Department of Internal Medicine, Gastroenterology Division, St. Louis, MO: *Do the MATH: Notch Signaling and Lineage Determination in the Intestine*
- 11.12.08 Medical College of Georgia, Institute of Molecular Medicine and Genetics, Augusta GA: *Do the Math: Lineage Determination in the Intestine*
- 5.20.07 Digestive Diseases Week, Washington D.C., Research Symposium: *Neurogenin 3 Transgenic Mice Increase Enteroendocrine Cell Lineage*
- 2.21.07 Michigan State University, East Lansing, MI: *Acid Secretion and Cellular Homeostasis in the Stomach*
- 11.6.06 University of Western Ontario, London, Ontario, Canada: *Acid Secretion and Cellular Homeostasis in the Stomach*
- 4.5.06 Experimental Biology 2006, Physiological Genomics and the Gastrointestinal Tract, San Francisco, CA: *Acid Secretion and Gene Expression: Gastrin-Regulated Gene Profiling in the Stomach*
- 4.22.02 Experimental Biology 2002, Parietal Cell Club, New Orleans, LA: *Enhanced Function in Parietal Cells Isolated from Gastrin-Deficient Mice*
- 8.20.01 9th International Proton Transport Conference: Mechanisms and Consequences of Proton Transport, Leura, Australia: *Gastrin-Deficient Mice have Impaired Acid Secretion yet Normal Parietal Cell Calcium Responses to Agonist Stimulation*
- 2.14.01 Gordon Research Conference on Salivary Glands and Saliva, Ventura, CA: *Gastrointestinal Function in CCK and Gastrin Deficient Mice*
- 8.15.00 Gordon Research Conference on Neuronal Cholecystokinin, Oxford, England: *CCK Expression in Neurons and Endocrine Cells in the Developing Intestine*
- 5.4.00 University of Kansas, Kansas City, KS: *Analysis of Mouse Mutants with Impaired Gastrointestinal Function*
- 11.9.99 Conference on Gastrin, Tucson, AZ: *Analysis of Gastrointestinal Function in Mouse Mutants Deficient in Gastrin and CCK*
- 11.7.99 Conference on Gastrin, Tucson, AZ: *Workshop: How to Design Transgenic Models*
- 7.3.99 Frontiers in Pancreatic Physiology, Luneburg, Germany: *Pancreatic Function in CCK-Deficient Mice*
- 2.22.99 Gordon Research Conference on Salivary Gland Function, Ventura CA: *Evolutionary and Transgenic Approaches to Exocrine Gene Expression*
- 4.18.98 Experimental Biology 1998 Symposium on Transgenic Approaches to Gastrointestinal Function, San Francisco, CA: *Impaired Acid Secretion in Gastrin-Deficient Mice*
- 3.13.98 Banyu Research Institute, Tsukuba Japan: *Analysis of Mouse Mutants with Impaired Cholecystokinin and Gastrin Function*
- 1.27.98 Gordon Research Conference on Molecular Evolution, Ventura CA: *Evolution of the Human Amylase Promoter*
- 7.27.97 International Society of Psychoneuroendocrinology 28th Congress, San Francisco, CA: *Transgenic and Knockout Mouse Approaches for Neuroscience Research*
- 4.11.97 Ritkin Institute, Tskuba, Japan: *Analysis of Mouse Mutants with Impaired Cholecystokinin and Gastrin Function*
- 4.10.97 Kanebo Pharmaceutical Company, Osaka, Japan: *Analysis of Mouse Mutants with Impaired Cholecystokinin and Gastrin Function*

- 2.19.97 Keystone Symposium on Molecular Mechanisms of Evolution: Structure, Function, Expression, and Regulation of Genes and Proteins, Sante Fe, New Mexico: *Human Amylase Gene Family: Retroposon Insertions and Promoter Evolution*
- 4.22.96 American College of Lab Animal Medicine (ACLAM) Forum, Annapolis, Maryland: *Embryonic Stem Cell Derived Transgenic Mice*
- 7.21.95 Mayo Clinic, Department of Molecular Medicine, Rochester, Minnesota: *Mouse Molecular Genetic Approaches to Characterize the Function of Cholecystokinin*
- 11.4.94 University of Copenhagen, Department of Clinical Biochemistry, Copenhagen, Denmark: *Function of Cholecystokinin in the Mouse*
- 6.13.92 American Association for the Study of Liver Diseases, 1992 Spring Conference, Mackinac Island, Michigan: *Mouse Embryonic Stem Cells*
- 5.28.92 US/Latin American Workshop in Salivary Research, Washington, D.C.: *Transgenic Models of Salivary Research*
- 5.3.89 Department of Genetics and Population Biology, University of Texas Health Science Center at Houston: *Retroviral Insertion into a Pseudogene Upstream of Amylase During Primate Evolution*

COMMITTEE AND ADMINISTRATIVE SERVICE

State, National and International:

- 2018-present Foreign Collaborator, Consortium for Neogenetic Medicine, Tokyo Medical and Dental University, Tokyo, JAPAN
- 2016 Member, Committee of Inquiry, Nanyang Technological University, Singapore
- 2012 Co-Organizer, 2012 AGA Freston Research Conference: *Gastrointestinal Stem Cell Biology and Pathobiology*, Chicago, IL
- 2011 Co-Organizer, 2011 FASEB Summer Research Conference: *Gastrointestinal Tract XIV: Stem Cells, Adaptation, Inflammation & Cancer*, Steamboat Springs, CO
- 2007 Experimental Biology 2007, Washington DC; Co-organizer of American Physiological Society Hot Topic Symposium on *Growth Factors and Proliferation and Differentiation of the Gastric and Intestinal Mucosa*
- 1999-2006 State of Michigan Life Sciences Corridor Animal Models Consortium Operating Committee
- 1998 12th International Symposium Regulatory Peptides, Mackinac Island, MI; Local Advisory Committee
- 1998 Experimental Biology 1998, San Francisco, CA; Co-organizer of American Physiological Society Hot Topic Symposium on *Transgenic Approaches to Gastrointestinal Function*
- 1995 Ninth International Mouse Genome Conference, Ann Arbor, MI; Scientific Program Committee

University of Michigan:

- 1994-present Embryonic Stem Cell Director, Transgenic Animal Model Core, The University of Michigan Biomedical Core Facilities
- 2008-2011 Integrity Board, Rackham School of Graduate Studies
- 2007-2008 Embryonic Stem Cell Research Oversight (ESCRO) Committee, Office of the Vice President for Research
- 2005-2008 Executive Board Member, Rackham School of Graduate Studies

University of Michigan Medical School and Health System:

- 2016-17 Co-chair, Search Committee for Chair of Cell & Developmental Biology Department
- 2014-17 Medical School Executive Committee
- 2014-15 Organizing Committee for Center for Organogenesis 10th International Symposium on

Stem Cells in Development and Disease
2013-18 Associate Director, Training in Organogenesis, NIH T32 Training Grant
2012-17 Predoctoral Training Program Director, Training in Basic and Translational Digestive Sciences, NIH T32 Training Grant
2007-13 Medical Scientist Training Program Operating Committee
2006-07 Search committee member for Chair, Molecular & Integrative Physiology Department
2005, 2008-10 Preliminary Exam Coordinator, Cellular and Molecular Biology Training Program
2004-05 Task Force on the Research Enterprise (Infrastructure Subcommittee); Advisory to the Medical School Associate Dean for Research
2003 Search committee member for Chair, Human Genetics Department
2001 Medical School Dean's Research Advisory Board
2001 Medical School Space Master Planning Committee
1999-2000 Search committee member for Chair, Cell & Developmental Biology Department and Director, Center for Organogenesis
1999-2003 Integrative Genomics Center Steering Committee
1998-2001 Biomedical Research Council; Vice Chair 1999-2000; Chair 2000-2001
1999-2003 Long Range Planning for the Health System, Education Committee
1998-2003 Program in Biomedical Sciences Admissions Committee
1997 Michigan Arthritis and Musculoskeletal Disease Center, Core Utilization Committee
1997 Comprehensive Cancer Center, Transgenic Core Committee
1998-99 Planning Committee for 3rd Organogenesis Symposium
1997-99 Search Committee for Director of the Center for Organogenesis
1995-96 Summer Biomedical Research Fellowship Selection Committee
1995-96 Medical Scientist Training Program, Operating Committee
1995-96 Cellular and Molecular Biology Training Program Genetics Preliminary Exam Committee
1995-96 Organogenesis Center, Steering Committee and Core Utilization Committee
1994-96 Coordinator of Intradepartmental Seminar Series on Embryonic Stem Cell Derived Transgenic Mice
1994 Task Force on Organogenesis, Advisory to the Dean to establish a new program
1989-91 Advisory Committee on Primary Research Appointments, Promotions and Titles (APRAPT)

Department of Physiology:

2012-present Alumni Relations Committee
2010-present Faculty Awards Committee
2015-18 Seminar Committee (Co-Chair)
1997-2000, 2004-2007; 2015-2018 Chair's Advisory Committee,
1992-96; 1998-03 (Chair 2000-03); 2008-10 Graduate Committee,
2000-03 Physiology Web Site Design Committee (Chair)
1998-99 Planning Committee for Center for Integrative Biology
1998-99 Integrative Biology Faculty Search Committee (Co-chair)
1997-99 Teaching Committee (Chair)
1996-97 Organizer of Physiology Departmental Seminar Series
1991-94; 2007-10 Space Committee
1992-94 Coordinator of Intra-Departmental Colloquium Series,

RESEARCH MENTORING

Junior Faculty:

Nataliya Razumilava, M.D. Clinical Lecturer (2018-present). Pinnacle Research Award, American

Association for the Study of Liver Diseases, *Hedgehog Signaling Facilitates Metaplastic Transformation of the Biliary Tract*.

Elise Hibdon, Ph.D. Research Investigator (2016-present). Debbie's Dream Foundation- AACR Career Development Award for Gastric Cancer Research, *Mechanisms of Wnt Activation in FAP Gastric Polyps and Gastric Cancer* (2016-2019); NIH NIDDK K01, *Wnt Pathway Regulation of Human Gastric Stem Cell Function* (2018-present).

Postdoctoral Fellows:

- Anand Venugopal, M.D., Ph.D. (2018-present). *Dysregulation of Notch Signaling Pathway in Young Onset Colorectal Cancer*.
- Nobukatsu Horita, M.D., Ph.D. (2015-2108). *Defining the Gastric Stem Cell Niche*. Currently a physician-scientist at Tokyo Medical and Dental University, Tokyo, JAPAN
- Elise Demitrack, Ph.D. (2010-2015). *Notch Regulation of Gastric Antral Stem Cells*. NIH F32 individual postdoctoral fellowship (2011-2014); MICHR Postdoctoral Translational Scholars Organogenesis Fellowship (2014-2016). Currently a Research Investigator in the Department of Molecular & Integrative Physiology, the University of Michigan.
- Zhiping Liu, Ph.D. (2009-2011). Subsequently a Postdoctoral Fellow at St. Jude Children's Research Hospital, Memphis TN.
- Jim Ren, Ph.D. (2007-2008). Subsequently a Postdoctoral Fellow in the Department of Pharmacology, University of Michigan, Ann Arbor.
- Renu Jain, Ph.D. (2001-2003) University of Michigan Gastrointestinal Peptide Center Pilot Project Award (2002-2003). Currently Deputy General Manager for Quality Control at Biological E. Limited, India.
- Masaharu Nakajima, M.D., Ph.D. (1996-1999). Currently a behavioral scientist with a research animal breeding company in Japan.
- Lennart Friis-Hansen, M.D., Ph.D. (1995-1996), P Carl Petersens Foundation Fellowship. Current position: Department Head, Hillerod Hospital, Dept. Clinical Biochemistry, Denmark.

Graduate Students:

- Kevin McGowan (2018-present). Organogenesis predoctoral fellowship (2018-present).
- Natacha Bohin (2014-2019). Cellular & Molecular Biology Program Fellowship (2014-2018); Rackham International Student Fellowship (2014-2015).
- Gail Butler Gifford (2011-2016). Ph.D. Molecular and Cellular Aspects of Systems and Integrative Biology Fellowship (2011-2013); Training in Basic and Translational Digestive Sciences Fellowship (2013-2014). Currently a Technology Transfer Manager at Fred Hutchinson Cancer Institute, Seattle, WA.
- Alexis Carulli (2010-2016). M.D., Ph.D. Medical Scientist Training Program (MD/PhD; 2008-2016). Organogenesis Fellowship (2011-2012). NIDDK F30 individual fellowship (2012-2014). Currently training in Internal Medicine and Gastroenterology, University of Pittsburg.
- Asma Al-Menhali (2006-2011). Ph.D. United Arab Emirates University Fellowship (2005-2011). Currently Assistant Professor of Biology, University of Arab Emirates.
- Kelli VanDussen (2005-2010). Ph.D. in Molecular and Integrative Physiology. Molecular and Cellular Aspects of Systems and Integrative Biology Fellowship (2005-2007). American Gastroenterological Foundation Graduate Fellowship (2007-2009). Rackham Fellowship (2009-2010). Currently Assistant Professor Gastroenterology, Hepatology & Nutrition, Cincinnati Children's Hospital Medical Center.
- Jennifer MacKellar (2007-2008). M.S. in Molecular and Integrative Physiology 2008: *Cholecystokinin Gene Regulation in Enteroendocrine Cell Lines*. Currently works for NSF organizing scientific grant reviews.

- Lymari Lopez-Diaz (2002-2007), Ph.D. in Cellular and Molecular Biology 2008. Cellular and Molecular Biology Fellowship (2002-2003); Rackham NIH Merit Fellowship (2001-2006). American Physiological Society Porter Fellowship (2005-2007). Currently Adjunct Faculty at Schoolcraft College in Livonia, MI.
- Karen Hinkle (1997-2002), Ph.D. in Physiology 2002. *Investigation of the Roles of Gastrin and Histamine in Regulating Gastric Acid Secretion Using Genetically Engineered Mouse Models*. Molecular and Cellular Aspects of Systems and Integrative Biology Fellowship (1996-1998); Organogenesis Fellowship (2000-2002). University of Michigan Teaching Award 2002. Currently Dana Professor of Biology, Associate Provost for Research and Chief Research Officer, Norwich University, Northfield, VT.
- Trever Portenga (1998-2000), M.P.H. 2000: *Phenotypic Characterization of Cholecystokinin and Gastrin-Releasing Peptide Receptor Deficient Mice*. Department of Hospital and Molecular Epidemiology; School of Public Health; Currently an epidemiologist for the State of Michigan.
- Jean Lay (1995-1999), Ph.D. in Cellular and Molecular Biology 1999: *Developmental Expression and Gene Regulation of Mouse Cholecystokinin*. Cell and Molecular Biology Fellowship (1994-1997); Organogenesis Fellowship (1997-1999); Currently a staff scientist with Comparative Toxicogenomics Database.
- Karen A. Lacourse (1995-1998), Ph.D. in Physiology 1998: *Mouse Models of Cholecystokinin Deficiency: Effects on the Exocrine Pancreas*. Molecular and Cellular Aspects of Systems and Integrative Biology Fellowship (1993-1997); Rackham Predoctoral Fellowship (1997-1998); Currently Head of Partner Relations and Training, Novartis Institutes for BioMedical Research, Cambridge, MA.

Post Baccalaureate Students:

- Nilsa La Cuza (2014-2015). Program in Biomedical Sciences PREP Fellowship (2014-2015). Currently a research fellow at the University of Wisconsin.

Undergraduate Honors Students:

- Yasmine Abushukur, 2018-2019; *Role of mTORC1 During Intestinal Epithelial Homeostasis*. MD training Oakland University.
- Gabriela Wong, 2015-2016; *Regulation Gastric Epithelial Cell Proliferation by mTor and Notch*. Currently in Pharmacy PhD program, University of Michigan.
- Andrew Tam, 2014-2015; *Notch Pathway Component Expression in Human Stomach*. Currently in Pharmacy PhD program, University of Michigan.
- Nicole Zayan, 2012-2013; *Notch Receptor Regulation of Intestinal Homeostasis*. Currently in Medical School, Ohio State University.
- Allison Hoch, 2008-2010: *Total Parenteral Nutrition and Gastric Atrophy*. (D.O. Michigan State University 2014)
- Daniel Kechele, 2005-2009: *Mechanisms of Altered Intestinal Differentiation in Mouse Models of Physiological Stressors*. American Physiological Society Undergraduate Summer Research Fellowship 2009. Currently a postdoctoral fellow University of Cincinnati.
- Gina Bane, B.S. with Honors 2002: *Age-Related Changes in Parietal Cells from Gastrin-Deficient Mice*. (M.D. University of Michigan 2008)
- Monica Sharma, B.S. with Honors 2000: *Localization of the PP and PYY genes on Mouse Chromosome 11*. (D.O. 2004)
- Mike Isakoff, B.S. with High Honors 1994: *Chromosomal Localization of the Mouse CCK-A and CCK-B Receptor Genes*. (M.D. NYU 1999)
- Ruth Phillips, B.S. with Highest Honors 1993: *Molecular Analysis of Primate Amylase Promoters Reveals Novel Gene Structures in Squirrel Monkey and Macaque*. University of

Linda C. Samuelson, Ph.D.

Michigan Biomedical Research Summer Fellowship 1993. (Ph.D. Molecular Cancer Biology & Pharmacology, Duke University 2002). Currently Visiting Assistant Professor North Carolina Central University.

Undergraduate Minority Summer Students:

Lymari Lopez-Diaz (1997 and 1998) (NIH Minority Supplement 1998 and 1999) (Ph.D. University of Michigan, 2008)

Sheila M. Soler (1996)

Xilma Ortiz-Gonzalez (1994) (MD/PhD The University of Minnesota)

Graduate Student Research Rotational Mentor:

Kevin McGowan 2017 Program in Biomedical Sciences

Lindy Jensen 2017 Program in Biomedical Sciences

Martha Echevarria-

Andino 2014 Program in Biomedical Sciences

Natacha Bohin 2014 Program in Biomedical Sciences

Gail Butler Gifford 2011 Program in Biomedical Sciences

Esha Mathew 2010 Program in Biomedical Sciences

Alexis Carulli 2010 Medical Scientist Training Program (M.D./Ph.D.)

Jennifer Mackellar 2007 Program in Biomedical Sciences

Asma Al Menhali 2005 Molecular and Integrative Physiology Department

Kelli VanDussen 2004 Program in Biomedical Sciences

Jennifer Davis 2003 Program in Biomedical Sciences

Lili Guo 2003 Program in Biomedical Sciences

Lymari Lopez-Diaz 2002 Program in Biomedical Sciences

Cindy Brunkan 2000 Program in Biomedical Sciences

Xuequn Chen 1999 Physiology Department.

Trever Portenga 1998 Hospital and Molecular Epidemiology, School of Public Health.

Siobhan Armstrong 1998 Physiology Department.

Karen Hinkle 1997 Physiology Dept; Systems and Integrative Biology Training Program.

Jean Lay 1994 Cellular and Molecular Biology Training Program.

Karen Lacourse 1994 Physiology Dept; Systems and Integrative Biology Training Program.

Sherry Scharp 1993 Biology Department.

Steve Smith 1993 Physiology Department.

Lisa Leon 1992 Physiology Department.

Heather Burrows 1992 MSTP, Cellular and Molecular Biology Training Program.

DISSERTATION COMMITTEES

Past:

Natacha Bohin, Ph.D. 2019, Cellular and Molecular Biology Training Program (Chair).

Arlee Mesler, Ph.D. 2018 Cellular and Molecular Biology Training Program, Dr. Sunny Wong.

Daniel Triner, M.D., Ph.D. (expected 2020) Molecular and Integrative Physiology Department, Dr. Yatrik Shah.

Stacy Schaefer, Ph.D. 2017 Neuroscience, Dr. Keith Duncan.

Alana Chin, Ph.D. 2017 Cell and Developmental Biology Department, Dr. Spence.

Mark Bolinger, Ph.D. 2016 Molecular and Integrative Physiology Department, Dr. David Antonetti.

Esha Mathew, Ph.D. 2016 Cellular & Molecular Biology Training Program, Dr. Pasca de Magliano.

Gail Butler Gifford, Ph.D. 2015 Molecular and Integrative Physiology Department (Chair).

Alexis Carulli, M.D., Ph.D. Molecular and Integrative Physiology Department (Chair).

Sarah Kampert Lang, Ph.D. Cellular and Molecular Biology Training Program, Dr. Westfall.

Mathew Barnabei, Ph.D. Molecular and Integrative Physiology Department, Dr. Metzger.
Asma Al Menhali, Ph.D. Molecular and Integrative Physiology Department (Chair).
Aaron Udager, M.D., Ph.D. Cellular and Developmental Biology Department, Dr. Gumucio.
Kelli VanDussen, Ph.D. 2010 Molecular and Integrative Physiology Department (Chair).
Tamara Tucker, Ph.D. 2008 Cellular and Molecular Biology Training Program, Dr. Merchant.
Jennifer Mackellar, M.S. 2008 Molecular and Integrative Physiology Department (Chair).
Marsha Ousman, Ph.D. 2007 Cellular and Molecular Biology Training Program, Dr. Koenig.
Jennifer Davis, Ph.D. 2007 Molecular and Integrative Physiology, Dr. Metzger.
Lymari Lopez-Diaz, Ph.D. 2007 Cellular and Molecular Biology Training Program (Chair).
Kunyoo Shin, Ph.D. 2006 Department of Biological Chemistry, Dr. Margolis.
Eujun Seong, Ph.D. 2004 Neuroscience Training Program, Dr. Burmeister
Blair Madison, Ph.D. 2004 Cell and Molecular Biology Training Program, Dr. Gumucio.
Ian Joseph, Ph.D. 2003 Department of Microbiology and Immunology, Dr. Kirschner.
Christiana DelLorusso, Ph.D. 2002 Physiology Department, Dr. Chamberlain.
Scott Harper, Ph.D. 2002 Cellular and Molecular Biology Training Program, Dr. Chamberlain.
Karen Hinkle, Ph.D. 2002 Physiology Department (Chair)
Igor Nasonkin, Ph.D. 2002 Human Genetics Department, Dr. Camper.
Daqing Sun, Ph.D. 2001 Physiology Department, Drs. Briggs and Schnermann.
Elizabeth Rust, Ph.D. 1999 Physiology Department. (Co-Chair; Dr. Metzger, Chair)
Jennifer Bowen, Ph.D. 1999 Physiology Department, Dr. Keyes.
Jean Lay, Ph.D. 1999 Cellular and Molecular Biology Training Program. (Chair)
Mike Isenbraun, Ph.D. 1999 Cellular and Molecular Biology Training Program, Dr. Miller.
Kathy Pinson, Ph.D. 1998 Anatomy and Cell Biology Department, Dr. Gumucio.
Heather Burrows, Ph.D. 1998, MSTP, Cell. Mol. Biology Training Program, Dr. Camper.
Karen Lacourse, Ph.D. 1998 Physiology Department. (Chair)
Rebecca Tucker, Ph.D. 1997 Human Genetics Department, Dr. Burke.
Susan Kendall, Ph.D. 1995 Cellular and Molecular Biology Training Program, Dr. Camper.
Amy Kavka, Ph.D. 1995 Anatomy and Cell Biology Department, Dr. Barald.
Ron Katz, Ph.D. 1994 Cellular and Molecular Biology Training Program, Dr. Koenig.
Samantha Harris, Ph.D. 1994 Physiology Department, Dr. Dawson.

Current:

Hannah Bell, Cellular & Molecular Biology Training Program, Dr. Yatrik Shah
Veronica Beck, Neuroscience Training Program, Dr. Lori Isom
Kevin McGowan, Molecular & Integrative Physiology Department (Chair).
Lindy Jensen, Molecular & Integrative Physiology Department, Dr. Yokiko Yamashita.
Andrew Schwartz, Molecular & Integrative Physiology Department, Dr. Yatrik Shah.
Meggie Hoffman, Molecular & Integrative Physiology Department, Dr. Howard Crawford.

GRADUATE STUDENT PRELIMINARY EXAMINATION COMMITTEES

Cellular and Molecular Biology Training Program:

<u>Preliminary Examination Coordinator</u>	2005, 2008-10
<u>Preliminary Examination Committee Member</u>	
Rosie Henn	2019
Anna Gormley (Chair)	2016
Susana Chan	2014
Aurthur Brannon III	2013
Esha Mathew	2012
Keith Wolter	2006
Tamara Tucker	2003

Linda C. Samuelson, Ph.D.

Stephen Archer	2000
Karen O'Brien	1998
Matt Wolfgang	1996
Sophia Bryant	1992

Molecular and Integrative Physiology Department:

Preliminary Examination Committee Member

Lindy Jensen	2018
Andrew Schwartz	2015
Matt Taylor, Daniel Triner	2014
Bryan Holtz	2012
Sarah Risley (Chair)	2010
Luqia Hou (Chair)	2009
Deepti Nagarkar, Qiong Wang	2007
Nathan Palpant, Scott Robertson	2006
Jesus Salizar	2005
Paul DeRose, Christine Ivashchenko, Sona Kang, Eileen Vesely	2003
Yan Bi, Nicole Lockhart	2002
Kellie Breen, Christina Bennett	2001
Xuequn Chen, Marlene Calderon	2000
Siobhan Armstrong, Richard Beswick, Christina Consolino	1999
Christiana DelLorusso	1998
Daniel Michele	1997
Jennifer Bowen	1996
Liangyou Rui, Jill Gallon	1995
Rajabrata Sarkar, Gene Hsu	1994
Lisa Leon, Steve Smith, Beth McLaurine	1993

BIBLIOGRAPHY

RESEARCH PUBLICATIONS IN PEER REVIEWED JOURNALS:

1. Samuelson, L.C. and R. Farber. Cytological Localization of the Adenosine Kinase, Nucleoside Phosphorylase I and Esterase 10 Genes on Mouse Chromosome 14. *Somatic Cell and Mol. Genet.* 11:157-165 (1985)
2. Gumucio, D.L., K. Wiebauer, A. Dranginis, L.C. Samuelson, L.O. Treisman, R.M. Caldwell, T.K. Antonucci, and M.H. Meisler. Evolution of the Amylase Multigene Family: YBR/Ki Mice Express a Pancreatic Amylase Gene Which is Silent in Other Strains. *J. Biol. Chem.* 260:13483-13489 (1985)
3. Darlington, G.J., C.C. Tsai, L.C. Samuelson, D.L. Gumucio, and M.H. Meisler. Simultaneous Expression of Salivary and Pancreatic Amylase Genes in Cultured Mouse Hepatoma Cells. *Mol. Cell. Biol.* 6:969-975 (1986)
4. Elliott, R.W., L.C. Samuelson, M.S. Lambert, and M.H. Meisler. Assignment of the Pancreatic Ribonuclease Gene to Mouse Chromosome 14. *Cytogenet. Cell Genet.* 42:110-112 (1986)
5. Meisler, M.H., T.K. Antonucci, L.O. Treisman, D.L. Gumucio, and L.C. Samuelson. Interstrain Variation in Amylase Gene Copy Number Affects mRNA Abundance in Three Mouse Tissues. *Genetics* 113:712-722 (1986)
6. Gumucio, D.L., K. Wiebauer, R.M. Caldwell, L.C. Samuelson, and M.H. Meisler. Concerted Evolution of the Human Amylase Genes. *Mol. Cell. Biol.* 8:1197-1205 (1988)
7. Samuelson, L.C., P.R. Keller, G.J. Darlington, and M.H. Meisler. Glucocorticoid and Developmental Regulation of Amylase mRNAs in Mouse Liver Cells. *Mol. Cell. Biol.* 8:3957-3863 (1988)
8. Samuelson, L.C., K. Wiebauer, D.L. Gumucio, and M.H. Meisler. Expression of the Human Amylase Genes: Recent Origin of a Salivary Amylase Promoter from an Actin Pseudogene. *Nucl. Acids Res.* 16:8261-8276 (1988)
9. Jones, J.M., S.A. Keller, L.C. Samuelson, L. Osborn, M.P. Rosenberg, and M.H. Meisler. A Salivary Amylase Transgene is Efficiently Expressed in Liver but not in Parotid Gland of Transgenic Mice. *Nucl. Acids Res.* 17:6613-6623 (1989)
10. Groot, P.C., W.H. Mager, R.R. Frants, M.H. Meisler, and L.C. Samuelson. The Human Amylase-Encoding Genes *amy2* and *amy3* are Identical to *AMY2A* and *AMY2B*. *Gene* 85:567-568 (1989)
11. Samuelson, L.C., K. Wiebauer, C.M. Snow, and M.H. Meisler. Retroviral and Pseudogene Insertion Sites Reveal the Lineage of Human Salivary and Pancreatic Amylase Genes from a Single Gene During Primate Evolution. *Mol. Cell. Biol.* 10:2513-2520 (1990)
12. Yao, S.N., A. DeSilva, S. Kurachi, L.C. Samuelson, and K. Kurachi. Characterization of the Mouse Factor IX cDNA and Developmental Regulation of the Factor IX Gene Expression in Liver. *Thrombosis and Haemostasis* 65:52-58 (1991)
13. Wu, K.-J., L.C. Samuelson, G. Howard, M.H. Meisler, and G.J. Darlington. Trans-activation of

- Pancreatic Specific Gene Sequences in Somatic Cell Hybrids. *Mol. Cell. Biol.* 11:4423-4430 (1991)
14. Samuelson, L.C., K. Wiebauer, G. Howard, R. Schmidt, D. Koeplin, and M.H. Meisler. Isolation of the Murine Ribonuclease Gene *Rib-1* : Structure and Tissue Specific Expression in Pancreas and Parotid Gland. *Nucl. Acids Res.* 19:6935-6941 (1991)
 15. Ting, C.-N, M.P. Rosenberg, C.M. Snow, L.C. Samuelson, and M.H. Meisler. Parotid-Specific Expression of a Human Salivary Amylase Gene in Transgenic Mice. *Genes and Development* 6:1457-1465 (1992)
 16. Robins, D., and L.C. Samuelson. Retrotransposons and the Evolution of Mammalian Gene Expression. *Genetica* 86:191-202 (1992)
 17. Ting, C.-N., D. Kohrman, D.L. Burgess, A. Boyle, R.A. Altschuler, G. Gholizadeh, L.C. Samuelson, W. Jang, and M.H. Meisler. Insertional Mutation on Mouse Chromosome 18 with Vestibular and Crainiofacial Abnormalities. *Genetics* 136:247-254 (1994)
 18. Metzger, J.M., W.-I. Lin, and L.C. Samuelson. Transition in Cardiac Contractile Sensitivity to Calcium during the In Vitro Differentiation of Mouse Embryonic Stem Cells. *J. Cell Biol.* 126: 701-711 (1994)
 19. Samuelson, L.C., M. Isakoff, and K. Lacourse. Localization of the Murine Cholecystokinin A and B Receptor Genes. *Mammalian Genome* 6:242-246 (1995)
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 21. Camper, S.A., T.C. Saunders, S.E. Kendall, R.A. Keri, A.F. Seasholtz, D.F. Gordon, T.S. Birkmeier, C.E. Keegan, I.J. Karolyi, M.L. Roller, H.L. Burrows, and L.C. Samuelson. Implementing Transgenic and Embryonic Stem Cell Technology to Study Gene Expression. *Biology of Reproduction* 52: 246-257 (1995)
 22. Kendall, S.K., L.C. Samuelson, T.L. Saunders, R.I. Wood, and S.A. Camper. Targeted Disruption of the Pituitary Glycoprotein Hormone α -Subunit Produces Hypogonadal and Hypothyroid Mice. *Genes and Dev.* 9:2007-2019 (1995)
 23. Zheng, X., T.L. Saunders, S.A. Camper, L.C. Samuelson, and D. Ginsburg. Vitronectin is not Essential for Normal Mammalian Development and Fertility. *Proc. Natl. Acad. Sci. USA* 92:12426-12430 (1995)
 24. Metzger, J.M., W.-I. Lin, and L.C. Samuelson. Vital Staining of Cardiac Myocytes during Embryonic Stem Cell Cardiogenesis in Vitro. *Circ. Res.* 78:547-552 (1996)
 25. Westfall, M.V., L.C. Samuelson, and J.M. Metzger. Troponin I Isoform Expression is Developmentally Regulated in Embryonic Stem Cell-Derived Cardiac Myocytes. *Dev. Dynamics* 206:24-38 (1996)
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57. 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).
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65. 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).

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