CURRICULUM VITAE

Kirk Marshall McHugh, Ph.D.

PERSONAL:

Born:	June 17, 1960, Wheeling, West Virginia Married, two children - Kelsey Elizabeth, Margaret Kathleen
Citizenship:	U.S.A.
Language:	English
Health:	Excellent

	Office	Home
Address:	The Research Institute Nationwide Children's Hospital Department of Pediatrics Center for Molecular & Human Genetics Suite WA2014 700 Children's Drive Columbus, OH 43205	275 West Southington Avenue Worthington, OH 43085
Phone:	614-355-2817	614-430-9905
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COMMUNITY:

2011	Co-Chair, Riverlea Annexation Committee
2010-present	President, Council of the Village of Riverlea
2008-present	Councilman, Village of Riverlea, elected to council for a four-year term
2006-present	Mason, New England Lodge #4, Worthington, Ohio

CAREER DEVELOPMENT:

2008-present	Director, Shared Resources, The Research Institute, Nationwide Children's Hospital, Columbus, OH

2008-present	Adjunct Associate Professor, Department of Physiology & Cell Biology, The Ohio State University, Columbus, OH
2008-2010	Completed Nationwide Children's Hospital Medical Leadership Program.
2007-present	Director, Nephrology and Urology Research Affinity Group, Center for Cell and Developmental Biology, The Research Institute, Nationwide Children's Hospital, Columbus, OH
2006-present	Director, Basic Science Research, Division of Nephrology, Nationwide Children's Hospital, Columbus, OH
2006	Completed Columbus Children's Hospital Inc. Effective Leadership Series
2003-present	Adjunct Associate Professor, Division of Anatomy, The Ohio State University, Columbus, OH
2002-present	Associate Professor, Department of Pediatrics, Columbus Children's Research Institute and The Ohio State University, Columbus, OH
1994-2002	Associate Professor, Department of Pathology, Anatomy, and Cell Biology, Thomas Jefferson University, Philadelphia, PA
1989-1994	Assistant Professor, Department of Anatomy and Developmental Biology, Thomas Jefferson, University, Philadelphia, PA
1986-1989	Research Fellow, Basic Sciences Division, Children's Hospital Research Foundation, Cincinnati, Ohio.

EDUCATION:

1982-1986	Ph.D.	-	Anatomy and Cell Biology, University of Cincinnati College of Medicine, Cincinnati, Ohio
1978-1982	B.S.	-	Mount Union College, Department of Biology and Department of Chemistry, Summa cum Laude

PROFESSIONAL AFFILIATIONS:

American Association for the Advancement of Science
American Society for Cell Biology
American Association of Anatomists
Society Pediatric Research

American Society of Pediatric Nephrology
American Gastroenterology Association
Gastroenterology Research Group

HONORS:

2010	Outstanding Mentor, The Research Institute at Nationwide Children's Hospital
1997	publication of abstract in ASCB Press Book of Selected Biomedical Research Summaries, one of 15 selected from 2662 abstracts submitted
1992-1997	Research Career and Development Award, NIH
1987-1989	Trustee Fellowship - Children's Hospital, Cincinnati, Ohio
1987	1 of 5 Finalists in the National Anatomy Dissertation Award Contest
1984-1986	Ryan Fellowship
1982-1986	Graduate Student Assistantship
1981-1982	Chemistry Alumni Scholarship

COMMITTEES:

2011	Admissions Screener, The Ohio State University College of Medicine
2011	Faculty Preceptor, Pediatric Residency Journal Club
2011	Member, Finance and Sponsored Projects Collaboration Group
2010	Member, 2011 Pediatric Academic Society Workshop Review Committee
2010-present	OSUMC Research Core Committee, The Ohio State University College of Medicine
2010-present	Research Information Technology Advisory Council, The Research Institute, Nationwide Children's Hospital
2010-2011	Molecular and Human Genetics Search Committee, The Research Institute, Nationwide Children's Hospital

2009	Chair, Equipment Use Committee, The Research Institute, Nationwide Children's Hospital
2009-present	Member, Shared Resources Committee, The Ohio State University
2008-present	Chairman, Shared Resources Committee, The Research Institute, Nationwide Children's Hospital
2007-2009	Chairman, Search Committee for Director of Transgenic and ES Cell Core, The Research Institute, Nationwide Children's Hospital
2007-2008	Member, Search Committee for Director of Microarray Core Facility, The Research Institute, Nationwide Children's Hospital
2007	Interim Director, Microarray Core Facility, The Research Institute, Nationwide Children's Hospital
2005	Chairman, Small Animal Imaging and Behavior Committee, Columbus Children's Research Institute
2004	Member, Physician's Media Panel, Columbus Children's Research Institute
2003-2009	Radiation Safety Committee, Columbus Children's Research Institute
2003-2006	Research Retreat Committee, Columbus Children's Research Institute
2003-2006	Seminar Committee, Columbus Children's Research Institute
2003-present	Graduate Faculty Representative, The Ohio State University
2000-2004	Chairman, Thesis Committee – Nafeesa Hunt-Owens
2000-2002	Chairman, Commons Board, Thomas Jefferson University
2000-2002	Professionalism Task Force Committee, Thomas Jefferson University
1999-2001	Master's Thesis Committee Member – Jeffery Charlap
1998-2002	Thesis Committee Member – Michael O'Hara
1998-2002	Thesis Committee Member – Christoper Cifarelli
2001-2002	Chairman, Commons Board, Thomas Jefferson University
1998-2001	Commons Board, Thomas Jefferson University

1996-2002	Committee for Continuing Evaluation of the Code of Professional Conduct, Thomas Jefferson University
1994-2002	Chairman, Curriculum and Student Affairs Committee, Developmental Biology and Teratology Graduate Program
1994-1998	Chairman, Thesis Committee - Christopher Phiel
1992-1994	Seminar Committee, Department of Anatomy and Developmental Biology, Thomas Jefferson University
1992-1994	Anatomy and Developmental Biology Graduate Committee, Thomas Jefferson University
1992-1997	Thesis Committee Member - Meryl Feder
1992-1995	Thesis Committee Member - Jonathan Schiffman
1991-1994	Chairman, Thesis Committee - Jacqueline Brittingham
1991-1992	Middle States Task Force on Students and Student Affairs, Thomas Jefferson University
1991-1992	Chairman, Committee on Student Affairs, Thomas Jefferson University
1990-1994	Curriculum Committee Developmental Biology/Teratology Graduate Program, Thomas Jefferson University
1990-1994	Developmental Biology/Teratology Training Grant Faculty Membership Committee, Thomas Jefferson University
1990-1993	Chairman, Thesis Committee - Rebecca Liddell
1990-1993	Thesis Committee Member - Ellen Purpus
1990-1992	Developmental Biology/Teratology Graduate Program Representative Thomas Jefferson University Graduate Council
1990-1992	Thesis Committee Member - Nancy Paradies
1990-1992	Thesis Committee Member - Amy Gehris
1990-1991	Ad Hoc Committee on Review of Graduate Program in Immunology, Thomas Jefferson University
1990-1991	Chairman, Ad Hoc Committee on Student Affairs, Thomas Jefferson University

1990-1991	Committee on Student Affairs, Thomas Jefferson University
1989-1994	Graduate Committee for Developmental Biology/Teratology Graduate Program, Thomas Jefferson University
1985-1989	Graduate Member Board of Trustees, University of Cincinnati
1984-1986	Finance Committee, University of Cincinnati
1984-1986	Student Affairs Committee, University of Cincinnati
1984-1986	Academic Affairs Committee, University of Cincinnati
1984-1985	Committee on Human Research, University of Cincinnati
1984-1986	Graduate Budget Board, University of Cincinnati
1984-1985	Graduate Standards Committee, University of Cincinnati
1984-1985	Graduate Council, University of Cincinnati
1984-1986	Member Search Committee for Vice President and Provost for College of Medicine, University of Cincinnati
1984-1985	President, Graduate Student Association, University of Cincinnati
1983-1984	Vice President, Graduate Student Association, University of Cincinnati
1983-1984	President, Graduate Student Association, Department of Anatomy and Cell Biology, University of Cincinnati

TEACHING EXPERIENCE:

Human Gross Anatomy - Medical/Allied Health
Developmental Biology
Mammalian Embryology
Molecular and Cellular Biology
Histology
Neuroanatomy
University of Cincinnati Super-Saturday Program in Human Anatomy for Children

RESEARCH/PROFESSIONAL EXPERIENCE:

2010	Invited Speaker, The Megabladder Mouse as a Model of Bladder Development, University of Pittsburg, Pittsburg, PA
2010	Platform Presentation, A Novel Model of Obstructive Uropathy, 11th International Workshop on Developmental Nephrology Genetic Programming and the Kidney: Progenitors, Signaling and Morphogenesis in Health and Disease, New Paltz, NY
2010	Invited Speaker, The Megabladder Mouse: A Unique Model of Congenital Obstructive Nephropathy, University of Hawaii at Manoa, John A Burns School of Medicine, Honolulu, HI
2010	Invited Speaker, The Megabladder Mouse: A Unique Model of Congenital Obstructive Nephropathy, Children's Hospital of Pittsburgh of UMPC, Pittsburgh, PA
2010	Invited Speaker, The Megabladder Mouse: A Unique Model of Congenital Obstructive Nephropathy, Miami University, Oxford, OH
2008-present	Study Section Reviewer, NIH, NIDDK-KUH Fellowship Review Committee
2008	Course Coordinator, Anatomy 911.03: Embryological Origin of Human Birth Defects, Nationwide Children's Hospital and The Ohio State University, Columbus, OH
2007	Platform Presentation, Identification of a Unique Transgenic Mouse Line that Develops Megabladder, Obstructive Uropathy, and Renal Dysfunction, 10th International Workshop on Developmental Nephrology, Pecs, Hungary.
2007	Platform Presentation, Renal Pathogenesis in a Transgenic Model of In Utero Obstructive Nephropathy, Experimental Biology/American Association of Anatomists, Washington, DC.
2007	Platform Presentation, Identification of a Unique Transgenic Mouse Line that Develops Megabladder, Obstructive Nephropathy, and Renal Dysfunction, 2007 American Society of Pediatric Nephrology, Toronto, Canada.
2005	Platform Presentation, A Genetic Model of Urogenital Development and Obstruction in a Transgenic Mouse Line Designated Megabladder, American Society of Nephrology, Philadelphia, PA
2005	Platform Presentation, A Genetic Model of Urogenital Development and Obstruction in a Transgenic Mouse Line Designated Megabladder,

	Experimental Biology – American Association of Anatomists, San Diego, CA
2004	Reviewer, National Institution of Health, National Institute of Diabetes and Digestive and Kidney Diseases, Special Emphasis Panel, NIH Program Project Review
2003-present	Member, Comprehensive Cancer Center, The Ohio State University
2003-present	Member, Integrated Biomedical Science Graduate Program, The Ohio State University
2003-present	Member, Molecular, Cellular, and Developmental Biology Graduate Program, The Ohio State University
2003-present	Teaching Faculty, Division of Anatomy and Medical Education, Department of Biomedical Informatics, The Ohio State University
2003-present	Member, Graduate Faculty The Ohio State University
2002-present	Associate Professor, Department of Pediatrics, The Research Institute at Nationwide Children's Hospital, Columbus, OH
1998	Invited speaker, American Motility Society Biennial Meeting, "Differentiation and Development of Gastrointestinal Smooth Muscle"
1998	Invited speaker, Cambridge Healthtech Institute, Molecular Diagnostics, "Determination of the Malignant Potential of Smooth Muscle Neoplasms"
1997	WRTI-FM (90.1, Philadelphia) live radio interview regarding development of diagnostic test
1997	Living Fit Magazine, interview and article regarding development of diagnostic test
1997	Seasons Magazine, interview and article regarding development of diagnostic test
1997	Daily News, New York, New York, article regarding development of diagnostic test
1997	Cancer Weekly Plus, article regarding development of diagnostic test
1997	Healthcare and Reproductive Newsletter, Manning, Seluage and Lee, interview and article regarding development of diagnostic test

1997	The Intelligencer, Wheeling West Virginia, newspaper interview and article regarding development of diagnostic test
1997	Hospital and Healthcare News, 9, South Jersey newsletter, interview and article regarding development of diagnostic test
1997	JeffNEWS, interview and article regarding development of diagnostic test
1997	Clinica News Letter, 766, London, England, interview and article regarding development of diagnostic test
1997	MED SOURCE, ABC/NBC/CBS medical report filmed and aired on diagnostic test
1997	WKDF-TV medical report filmed and aired on diagnostic test
1997	WXIX-TV (Cincinnati) medical report filmed and aired on diagnostic test
1997	WAGA-TV (Atlanta) medical report filmed and aired on diagnostic test
1997	WJBK-TV (Detroit) medical report filmed and aired on diagnostic test
1997	Goodmorning Philadelphia, (Philadelphia) medical report filmed and aired on diagnostic test
1997	WTXF-TV (Philadelphia) medical report filmed and aired on diagnostic test
1997	WPVI-TV (Philadelphia) medical report filmed and aired on diagnostic test
1995	American Paraplegia Society, platform presentation, Bladder Smooth Muscle Isoactin Gene in the Rat Model of Spinal Cord Injury
1994-2002	Associate Professor, Department of Pathology, Anatomy and Cell Biology, Thomas Jefferson University, Philadelphia, PA
1994-2002	Member, Training Grant Faculty, Department of Pathology, Anatomy and Cell Biology
1994-2002	Course Coordinator, Developmental Biology 615
1990-2002	Director, Molecular Genetics Core Facility, Department of Anatomy

1990-2002 Member, Graduate Faculty, Thomas Jefferson University

1990-1996 Course Coordinator, Developmental Biology 616/626

1990-1994 Member, Training Grant Faculty, Department of Anatomy and Cell Biology

1990-1992 Course Coordinator, Developmental Biology 615/661

1989-1994 Assistant Professor, Department of Anatomy and Developmental Biology, Thomas Jefferson, University, Philadelphia, PA

1986-1989 Research Fellow, Basic Sciences Division, Children's Hospital Research Foundation, Cincinnati, OH

TRAINEES:

High School Students

2006-2007 Kelsey McHugh, Summer Fellowship

2005 Katherine Tomaschewski, Summer Fellowship

1992 Erica Johnson, Minority Student Summer Fellowship

1993 Vaishali Parekh, Minority Student Summer Fellowship

1993 Jamar Robinson, Minority Student Summer Fellowship

Medical Students

2010 Suzanne Ploeger, Med 1 The Ohio State University, Role of Antimicrobial Peptides in the Urogenital Tract

2008 Andrew Paulus, Med 1 The Ohio State University, 3-Dimensional Reconstruction of Bladder Development

1999 Philip Minotti, Med 1 Thomas Jefferson University, Molecular Analysis of Uterine Leiomyosarcomas

1990 Mark Syms, Med 1 Thomas Jefferson University, Molecular Analysis of Uterine Smooth Muscle Tumors

Graduate Students

2009-2010 Eric Kenz, predoctoral, 3-D Reconstruction of the Developing Mouse Urogenital System

2000-2004 Nafessa Hunt-Owens, predoctoral, Nuclear and Mitochondrial Regulation of Cellular Differentiation: Roles of Serum Response factor and Tumor Suppressor p53, currently Director, California's State Summer School for Math & Science, University of California, Santa Cruz, CA

1993-1998 Christopher Phiel, predoctoral, Elucidation of the Mechanism and Pathways Promoting Intestinal Smooth Muscle Differentiation, currently Assistant Professor, Columbus Children's Research Institute, Columbus, Ohio

1991-1994 Jacqueline Brittingham, predoctoral, Molecular Analysis of Gastrointestinal Smooth Muscle Development In Vitro, currently Chair, Department of Biology, Simpson College, Indianola, IO

1990-1994 Rebecca Liddell Huppi, predoctoral, Molecular Analysis of Gastrointestinal Smooth Muscle, currently Program Specialist, Cancer Diagnosis Program, National Institute of Health, Bethesda, MD

Postdoctoral Fellow/Medical Fellows/Residents/Faculty

2010-present Brian Becknell, pediatric resident/fellow

2009-present Melissa Bailey (PI), mentor on her CTSA K12 Grant Award

2008-present Kristin Armstrong, current postdoctoral fellow

2007-2011 Susan E. Ingraham, current medical fellow, Pediatric Nephrology, mentor on her CTSA TL1 Grant Award and mentor on her NIH K award

2006-2010 David Hains, former medical resident/fellow, Division of Nephrology, currently an Assistant Professor, Center for Translational Research, The Research Institute, Nationwide Children’s Hospital

2006-2010 Andrew Schwaderer, currently an Assistant Professor, Division of Nephrology, Department of Pediatrics, Nationwide Children’s Hospital

2006-2007 Ihab Ismail, postdoctoral fellow, Identification of Gene Responsible for the Megabladder Phenotype in Mice, left to development teaching career

2005-2009 Monalee Saha, postdoctoral fellow, Molecular Regulation of Smooth Muscle Development in the Bladder, currently postdoctoral fellow in the laboratory of Dr. Cheryl Gariepy, Nationwide Children’s Hospital

2004 -2007 Sunita Singh, postdoctoral fellow/research assistant professor, Characterization of the Molecular Defects Associated with the Megabladder Mouse, moved on to graduate from the Clinical

Cytogenetics Fellowship Program, Department of Laboratory Medicine, Nationwide Children's Hospital, Columbus, OH

1994-1998 Wendy Tryzna, postdoctoral fellow, SMMR1: A Novel Basic Helix-Loop-Helix Smooth Muscle Transcription Factor, NIH NRSA, 1997-2000, currently Assistant Professor, Louisiana Tech University, Rustan, LA

PUBLICATIONS:

1. Drake, R.L., McHugh, K.M., Mucenski, C.G. 1984. Insulin and Fructose Regulate Malic Enzyme Activity by Different Processes. Biochemical et Biophysical Research Communication 121:730-734.

2. McHugh, K.M., Mucenski, C.G., Drake, R.L. 1986. An Insulin-mediated Differential Induction of Specific Hepatic mRNAs. In: ICSU Short Reports 4:52-53.

3. McHugh, K.M., Drake, R.L. 1987. Normal and Diabetic Malic Enzyme: A Biochemical Comparison. Molecular Cellular Endocrinology 55:71-75.

4. McHugh, K.M., Lessard, J.L. 1988. The Nucleotide Sequence of a Rat Vascular Smooth Muscle a-actin cDNA Nucleic Acids Res. Nucleic Acids Research 16:4167.

5. McHugh, K.M., Lessard, J.L. 1988. The Developmental Expression of the Rat Smooth Muscle Actins: Isolation and Characterization of a g-Enteric Actin cDNA. Molecular and Cellular Biology 8:5224-5231.

6. McHugh, K.M., Brown, C.W., Lessard, J.L. 1989. A Molecular Analysis of the Rat Stomach a-Vascular, g-Enteric, and g-Cytoplasmic Isoactins. Cellular and Molecular Biology of Muscle Development. UCLA Symposia on Molecular and Cellular Biology, New Series, Vol. 93. Editors, F. Stockdale and L. Kedes, Alan R. Liss, Inc., New York, NY.

7. McHugh, K.M., Drake, R.L. 1989. Insulin Mediated Regulation of Epididymal Fat Pad Malic Enzyme. Molecular and Cellular Endocrinology 62:227-233.

8. Brown, C.W., McHugh, K.M., Lessard, J.L. 1990. A cDNA Sequence Encoding Cytoskeletal Gamma-Actin from Rat. Nucleic Acids Research 18:5312.

9. McHugh, K.M., Crawford, K., Lessard, J.L. 1991. A Comprehensive Analysis of the Developmental and Tissue-Specific Expression of the Isoactin Multigene Family in the Rat. Developmental Biology 148:442-458.

10. Liddell, R.A., Mooers, S., Siegman, M.J., McHugh, K.M. 1993. Altered Isoactin Gene Expression in the Affected Bowel Segments of the Lethal Spotted Mouse. Gastroenterology 105:441-448.

11. Liddell, R.A., Syms, M., McHugh, K.M. 1993. Heterogeneous Isoactin Gene Expression in the Adult Rat Gastrointestinal Tract. Gastroenterology 105:347-356.

12. Liddell, R., Chakder, S., Rattan, S., McHugh, K.M. 1993. Differential Isoactin Gene Expression in the Sphincteric and Nonsphincteric Smooth Muscles of the Opossum. Proceedings of the Society for Experimental Biology and Medicine 205:321-326.

13. Liddell, R.A., Thibaudeau, G., Maddison, P., Goldstein, C., McHugh, K., Siracusa, L., Pavin, W. 1994 Molecular Genetic Mapping of the Lethal Spotting (*ls*) Mutation in the Mouse. Mouse Genome 92:688-690.

14. Pavin, W., Liddell, R., Wright, A., Thibaudeau, G., McHugh, K., Siracusa, L. 1995 A High Resolution Linkage Map of the Lethal Spotting Locus: A Mouse Model of Hirschsprung's Disease. Mammalian Genome 6:1-7.

15. McHugh, K.M 1995 Molecular Analysis of Smooth Muscle Development in the Mouse. Developmental Dynamics, 204:278-290.

16. McHugh, K.M. 1996 Molecular Analysis of Gastrointestinal Smooth Muscle Development: **Invited Review**. Journal Pediatric Gastroenterology and Nutrition, 23:379-394.

17. Trzyna, W., McHugh, M., McCue, P., McHugh, K.M. 1997 Molecular Determination of the Malignant Potential of Smooth Muscle Neoplasms. Cancer, 80:211-217.

18. Chakder, S., McHugh, K., Rattan, S. 1997 Inhibitory Neurotransmission in Lethal Spotted Mutant Mice: A Model for Hirschsprung's Disease. Gastroenterology, 112:1575-1585.

19. Rivas, D., Chancellor, M., Shupp-Byrne, D., Shenot, P., McHugh, K.M. 1997 A Molecular Marker for the Development of Interstitial Cystitis in a Rat Model: Isoactin Gene Expression. Journal of Urology, 157:1937-1940.

20. Brittingham, J., Liaw, D., Liddell, R., McHugh, M., McCue, P., and McHugh, K.M. 1997 Comparative Analysis of Smooth Muscle Isoactin Gene Expression in a Variety of Normal and Neoplastic Tissues. Pathobiology, 65:113-122.

21. Trzyna, W., Gabbeta, V., McHugh, K.M. 1997 Isolation and Characterization of a Novel Alcohol Dehydrogenase-like Isozyme by Differential Display of Distinct Smooth Muscle Cell Phenotypes. Journal Steroid Biochemistry Molecular Biology, 63:115-121.

22. Trzyna, W., McHugh, M., McCue, P., McHugh, K.M., 1997 Finally - A Clear Diagnostic Test that Shows if Uterine Smooth Muscle Tumors Are Benign or Malignant. 1997 ASCB Annual Meeting Selected Biomedical Abstracts, Editors, Wilson, K., Chisholm, R., Albertinin, D., Dasso, M. and Payne, G. 1997 ASCB Annual Meeting Selected Biomedical Abstracts, American Society for Cell Biology, 19.

23. Wong, J., Woodcock-Mitchell, J., Mitchell, J., Rippetoe, P., White, S., Absher, M., Baldor, L., Evans, J., McHugh, K., Low, R. 1998 Smooth Muscle Actin and Myosin Expression in Cultured Airway Smooth Muscle Cells. American Journal of Physiology, 274:786-792.

24. McCue, P., McHugh, M., McHugh, K.M. 1998 Diagnosing Uterine Smooth Muscle Tumors: A Review. **Invited Review**, LabMedica International, 15:12-16.

25. Brittingham J., Phiel, C., Trzyna, W., Gabbeta, V., McHugh, K.M. 1998 Identification of Distinct Molecular Phenotypes in Cultured Gastrointestinal Smooth Muscle Cells, Gastroenterology, 115:605-617.

26. Weston, W., LeClair, E., Trzyna, W., McHugh, K., Nugent, P., Lafferty, C., Ma, L., Tuan, R., Greene, R. 1999 Differential Display Identification of Plunc, a Novel Gene Expressed in Embryonic Palate, Nasal Epithelium, and Adult Lung. Journal of Biological Chemistry, 274:13698-13703.

27. Blennerhassett, M.G., Bovell, F., Lourenssen, S., McHugh, K.M. 1999 Characterics of Inflammation-Induced Hypertrophy of the Rat Intestinal Smooth Muscle Cell. Digestive Disease & Sciences 44:1265-1272.

28. Van Bockstaele, E., Peoples, J., Menko, S., McHugh, K., Drolet, G. 2000 Decreases in Endogenous Opiod Peptides in the Rat Medullo-Coerulear Pathway Following Chronic Morphine Treatment, Journal of Neuroscience, 20:8659-8666.

29. Phiel, C., Gabbeta, V., Parsons, L., Rothblat, D., Harvey, R., McHugh, K.M. 2001 Differential Binding of an SRF/NK-2/MEF2 Transcription Factor Complex in Normal Versus Neoplastic Smooth Muscle Tissues, Journal Biological Chemistry, 276, 34637-34650.

30. Gabbeta, V., Trzyna, W., Phiel, C., McHugh, K.M. 2003 Vesical Associated Protein A is Differentially Expressed During Intestinal Smooth Muscle Cell Differentiation, Developmental Dynamics, 228:11-20.

31. Barnard, J., McHugh, K.M. 2006 Growth Factors in the Gastrointestinal Tract. Physiology of the Gastrointestinal Tract, Fourth Edition, edited by Leonard R. Johnson, Academic Press. 183-246.

32. Schwaderer, A., Bates, C., McHugh, K., McBride, K. 2006 Renal Anomalies in Family Members of Infants with Bilateral Renal Agenesis/Adysplasia, Pediatric Nephrology, 22:52-56.

33. Singh, S., Robinson, M., Nahi, F., Coley, B., Robinson, M., Bates, C., Kornacker, K., McHugh, K.M. 2007 Identification of a Unique Transgenic Mouse Line that Develops Megabladder, Obstructive Uropathy, and Renal Dysfunction, Journal American Society of Nephrology, 18:461-471.

34. Auer, H., Newsom, D., Nowak, N., McHugh, K., Singh, S., Yu, C-Y., Yang, Y., Wenger, G., Gastier-Foster, J., Kornacher, K. 2007 Gene-Resolution Analysis of DNA Copy Number Variation using Oligonucleotide Expression Microarrays. BMC Genomics, 8(111):1-13.

35. Singh, S., Robinson, M., Ismail, I., Saha, M., Auer, H., Kornacker, K., Robinson, M., Bates, C., McHugh, K.M. 2008 Transcriptional Profiling of the Megabladder Mouse - A Unique Model of Bladder Dysmorphogenesis. Developmental Dynamics, 237:170-186.

36. Hains, D., Sims-Lucas, S., Kish, K., Saha, M., McHugh, K.M., Bates, C.M. 2008 Role of Fibroblastic Growth Factor 2 in Kidney Mesenchyme. Pediatric Research, 64:592-8.

37. Saha, M., Ingraham, S.E., Carpenter, A., Robinson, M., McHugh, K.E., Singh, S., Robinson, M.L. and McHugh, K.M. 2008 Identification of Distinct Myocardin Splice Variants in the Bladder, Journal of Urology, 182:766-775.

38. Sims-Lucas, S., Argyropoulos, C., Kish, K., McHugh, K., Bertram, J.F., Quigley, R., Bates, C.M. 3-Dimensional Technique Reveals New Ureteric and Mesenchymal Defects in Fgfr2 Mutant Kidneys. Journal of the American Society of Nephrology, 20: 2525-33, 2009.

39. Hains D.S., Sims-Lucas S., Carpenter A., Saha M., Murawsik I., Kish K., Gupta I., McHugh K., Bates C.M. High Incidence of Vesicoureteral Reflux in Mice with Deletion of Fibroblast Growth Factor Receptor 2 in Kidney Mesenchyme. 2009 Journal of Urology, 148:2077-2084.

40. Ingraham, S.E., Saha, M., Carpenter, A., Robinson, M., Ismail, I., Singh, S., Hains, D., Robinson, M.L., Hirselj, D., Koff, S.A., Bates, C.M., McHugh, K.M. 2010 Pathogenesis of Renal Injury in the Megabladder Mouse: A Genetic Model of Congenital Obstructive Nephropathy, Pediatric Research, 60:500-507.

41. Spencer, J.D., Schwaderer, A., McHugh, K.M., Hains, D.S. 2010 Pediatric Urinary Tract Infections: An Analysis of Hospitalizations, Charges and Costs in the USA, Pediatric Nephrology, 25:2469-2475.

42. Ingraham, S.E., McHugh, K.M. 2011 Current Perspectives in Congenital Obstructive Nephropathy, **Invited Review**, Pediatric Nephrology, 26:1453-1461.

43. Spencer, J.D., Schwaderer, A., DiRosario, J., McHugh, K.M., McGillivary, G., Carpenter, A., Baker, P., Harder, J., Hains, D. 2011. Ribonuclease 7: A Potent Antimicrobial Peptide Within the Human Kidney and Urinary Tract. Kidney International, 80:174-180.

44. Becknell B., Pais P, Onimoe G., Rangarajan H., Schwaderer A.L., McHugh K.M., Ranalli M.A., Hains D.S. 2011 Hepatoblastoma and Prune belly syndrome: A Potential Association. Pediatric Nephrology, 26:1269-1273.

45. Spencer, J.D., Schwaderer, A., McHugh, K., Vanderbrink, B., Becknell, B., Hains, D.S. 2011. The Demographics and Costs of Inpatient Vesicoureteral Reflux Management in the USA. Pediatric Nephrology, 26:1995-2001.

46. Becknell, B., Hains, D., Schwaderer, A., Vanderbrink, B., Spencer, J.D., McHugh, K.M. 2011 Impact of Urinary Tract Infection on Inpatient Healthcare Utilization for Congenital Obstructive Nephropathy. Pediatric Nephrology, accepted.

47. Carpenter, A., Becknell, B., Hirselj, D. McHugh, K.M. 2011 Urinary Diversion via Cutaneous Vesicostomy in the Megabladder Mouse. Kidney Development: Methods in Microbiology, Humana Press, accepted.

48. Carpenter, A., Becknell, B. and McHugh, K.M. 2011 Renal Ultrasound in the Mouse, Kidney Development: Methods in Microbiology, Humana Press, accepted.

49. Carpenter, A., Paulus, A., Robinson, M., Bates C.M., Robinson, M.L., Hains, D., McHugh, K.M. 2011 3-Dimensional Analysis of Murine Urogenital Development and Dysmorphogenesis. Developmental Dynamics, accepted.

50. DeSouza, K., Carpenter, A., McHugh, K.M. 2011 Molecular Analysis of the Sonic Hedgehog Signaling Pathway During Bladder Smooth Muscle Development in Normal and Megabladder Mice. In preparation.

ABSTRACTS:

1. Drake, R.L. Mucenski, C.G., McHugh, K.M. 1984 Effects of Various Insulin Dosages on Hepatic Lipogenesis. Anatomic Record, 208:48A.

2. Drake, R.L., McHugh, K.M. Mucenski, C.G. 1984 Insulin and Malic Enzyme: Tissue Specific Regulation. Federation Proceedings, 43.

3. McHugh, K.M., Davis, B.B., Drake, R.L. 1986 Insulin Mediated Transcriptional and Post-Transcriptional Regulation of Epididymal Fat Pad Malic Enzyme. Journal Cell Biology, 103:37A.

4. Drake, R.L., Mucenski, C.G., McHugh, K.M. 1986 Insulin and Malic Enzyme: A Model to Study Hormonal Regulation of Liver Metabolism. Anatomic Record, 214:33A.

5. McHugh, K.M., Lessard, J.L. 1987 Isolation of a Unique Actin Specific cDNA Clone from Rat Stomach. Journal Cell Biology, 105, part 2, 26a.

6. McHugh, K.M., Crawford, K. and Lessard, J.L. 1988 Isolation and Characterization of Smooth Muscle and g-Actin cDNAs in the Rat. UCLA Symposium on Molecular and Cell Biology of Development, Journal Cellular Biochemistry, Supplement 12C:373.

7. Brown, C.W., McHugh, K.M., Lessard, J.L. 1988 Alternative 3'-Untranslated Regions in Two Rat Cytoplasmic g-Actin cDNA Clones. Journal Cellular Biochemistry, Supplement 12C:348.

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9. Brown, C.W., McHugh, K.M., and Lessard, J.L. 1988 Two mRNAs Differing in their 3' Untranslated Regions Encode Cytoplasmic g-Actin. Journal Cell Biology, 107:252a.

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Congenital Obstructive Nephropathy. 11th International Workshop on Developmental Nephrology, Genetic Programming and the Kidney: Progenitors, Signaling and Morphogenesis in Health and Disease, New Paltz, NY.

58. Spencer, J.D., Schwaderer, A., McHugh, K.M., Hains, D. 2010 Rnase 7: A Novel Antimicrobial Peptide in the Human Kidney and Urinary Tract. American Society of Nephrology.

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EXTERNAL RESEARCH GRANTS AND FELLOWSHIPS RECEIVED:

NIH R01 DK085242 Congenital Obstructive Nephropathy - Biomarker & Therapeutic Development ($300,000; 12/01/09 - 11/31/14); McHugh PI

NIH R01 DK081128 A Genetic Model of Vesicoureteral Reflux and Reflux Nephropathy ($250,000; 04/01/09 - 03/31/); McHugh Co-I

NIH RC4 DK090937 Genetic Variations and Development of Vesicoureteral Reflux and Sequelae ($400,000; 12/01/10 - 11/31/13); McHugh Co-I

NIH K08 DK092340 The Role of microRNA in Congenital Obstructive Nephropathy ($692,000; 7/1/11 - 6/31/16); Susan Ingraham PI/McHugh Mentor

NIH F32 DK089733 Molecular Analysis of Bladder Smooth Muscle Development ($102,628; 9/1/11-8/31/13); Kristin DeSouza PI/McHugh Mentor

ASN Student Scholar Grant The Role of RNase 7 in the Development of Urinary Tract Sterility ($6500; 6/13/11-8/22/11); Suzanne Ploeger Trainee/McHugh Mentor

NIH TL1 Mentored Research Training Program Award, Center for Clinical and Translational Science Award, Masters of Public Health, (supported by the National Center for Research Resources, National Institutes of Health), Center for Clinical and Translational Sciences, The Ohio State University, Urinary MicroRNA Expression in Congenital Obstructive Nephropathy, ($60,000; 9/1/10 - 8/31/11); Susan Ingraham PI/McHugh Mentor

NIH K12 Mentored Research Training Program Award, Center for Clinical and Translational Science Award, (supported by the National Center for Research Resources, National Institutes of Health), Center for Clinical and Translational Sciences, The Ohio State University, Myopia and Ciliary Muscle Development, ($75,000; 9/1/09 – 8/31/11); Melissa Bailey PI/McHugh Mentor

NIH R01 DK00907 A Genetic Model of Urogenital Development and Obstruction, ($1,250,000; 4/1/05 - 3/30/10); McHugh PI

NIH R01 DK055791 Co-Regulatory Model of Smooth Muscle Myogenesis, ($1,247,450; 6/1/03 - 5/31/08); McHugh PI

Nemours Research Grant, Molecular Analysis of Neurogenic Lower Tract Dysfunction, ($112,715; 1/1/01 - 12/31/04); McHugh Co-I

NIH R01 DK055791 Co-Regulatory Model of Smooth Muscle Myogenesis, ($741,880; 4/1/99 - 3/30/03); McHugh PI

NIEHS Training Grant, Cellular and Molecular Determinants of Birth Defects ($1,157,665; 7/1/98 - 6/31/04); McHugh, participating faculty member

NIH NRSA, Dr. Wendy Trzyna, SMMR1: A Novel Basic-Helix-Loop-Helix Smooth Muscle Transcription Factor, (2/1/98 - 1/31/01); Wendy Tryzna PI/McHugh Mentor

Dean's Overage Research Program - Thomas Jefferson University, Rapamycin, A Potential Inhibitor of Smooth Muscle Dedifferentiation ($7,000; 3/1/97 - 2/28/98); McHugh PI

NIH K04 HD00996 Research Career and Development Award, The Molecular Basis of Smooth Muscle Differentiation ($376,534; 7/1/92 - 6/30/97); McHugh PI

Dean's Overage Research Program - Thomas Jefferson University, Molecular Analysis of Gastrointestinal Smooth Muscle Development ($7,000; 3/1/94 - 2/28/95); McHugh PI

NIH DE05550, R01, Signal Transduction During Craniofacial Embryogenesis ($406,601; 2/1/91 - 1/31/95); McHugh Co-I

NIH HD27252, R29 First Award, Developmental Signaling of Smooth Muscle Differentiation ($569,649; 8/1/90 - 7/31/95); McHugh PI

Dean's Overage Research Program - Thomas Jefferson University, Characterization of Enteric Smooth Muscle Actin Expression During Atherogenesis ($8,000; 3/1/90 - 2/28/91); McHugh PI

BRSG Pilot Study Program - Thomas Jefferson University, Characterization of Actin Gene Expression in Congenital Megacolon ($8,600; 4/12/90 - 3/31/91); McHugh PI

American Heart Association - Ohio Affiliate, Molecular Genetics of the Smooth Muscle Actins ($15,000; 1988 - 1989); McHugh PI

American Heart Association - Ohio Affiliate, Molecular Genetics of Human Smooth Muscle Actins ($12,000; 1987 - 1988); McHugh PI

Trustee Postdoctoral Fellowship, Children's Hospital Research Foundation, ($22,000; 1986)

EXTERNAL RESEARCH GRANTS AND FELLOWSHIPS CURRENTLY SUBMITTED:

NIH T32DK091215 Pediatric Nephrology and Urology Research Training Program (04/01/11 - 03/31/16); McHugh Co-PI

NIH R01AI091619 Antimicrobial Peptides and Innate Defense of the Urinary Tract (12/01/2010 - 11/31/2013); McHugh Co-I

NIH R01DK091289 DNA Copy Number Variations in Vesicoureteral Reflux and its Sequelae (04/01/11 - 03/31/16); McHugh Co-I

PATENTS:

Domestic Patent 5710003, issued 1/20/98, Diagnostic Test to Determine the Malignant Potential of Smooth Muscle Tumors

International Patent PCU/US97/00976, 1998, Diagnostic Test to Determine the Malignant Potential of Smooth Muscle Tumors