Maxime M Mahe, Ph.D.

1. Personal information:

Maxime M Mahe
3432 Monteith Ave.
Cincinnati, OH 45208
Phone (513) 602-6899
Lab (513) 803-3273
E-mail: maxime.mahe@cchmc.org

Department of Pediatric Surgery
Cincinnati Children's Hospital Medical Center
3333 Burnet Ave. MLC2023
Cincinnati, OH 45229

2. Education

2008-2012 Doctor of Philosophy.
Graduate program in Cellular Physiology. Dr. Michel Neunlist advisor. INSERM U913
2006-2008 Master Degree in Physiology.
University of Nantes, France
2003-2006 Bachelor of Science.
University of Nantes, France

3. Positions and Honors

ACTIVITY/OCCUPATION	BEGINNING DATE (mm/yy)	ENDING DATE (mm/yy)	FIELD	INSTITUTION/COMPANY	SUPERVISOR/ EMPLOYER
Graduate student	10/2008	01/2012	Neuro-gastroenterology	University of Nantes, France	Michel Neunlist INSERM
Postdoctoral Fellow	02/2012	06/2015	Gastroenterology, ISCs	Children's Hospital, Cincinnati, OH, USA	Michael A Helmrath CCHMC
Instructor	06/2015	Present	Gastroenterology, ISCs, Neuro-gastroenterology	Children's Hospital, Cincinnati, OH, USA	Michael A Helmrath CCHMC

4. Other Experience and Professional Memberships

2009 - 2012 Member, European Society of Neurogastroenterology and Motility
2012 – Member, American Gastroenterology Association
2013- Member, American Association for the Advancement of Science
2015 - Member, American Neurogastroenterology and Motility Society

5. Honors

2008 Pre-doctoral Scholarship, Nantes Metropole
2009 Best Scientific Presentation Prize, University of Nantes
2010 UEGW Travel Grant, United European Gastroenterology
2014 Abstract of the Year, Gastroenterology Research Group / American Gastroenterology Association
2015 Digestive Health Center Pilot and Feasibility Award
2015 Sheikh Zayed Institute Award for Innovation in Pediatric Surgery, American Pediatric Surgery Association
2015 AGA - Athena Troxel Blackburn Research Scholar Award in Neuroenteric Disease.

6. Publications

Aihara E, **Mahe MM**, Schumacher MA, Matthis AL, Feng R, Ren W, Noah TK, Matsu-Ura T, Moore SR, Hong CI, Zavros Y, Herness S, Shroyer NF, Iwatsuki K, Jiang P, Helmrath MA, Montrose MH. Characterization of stem/progenitor cell cycle using murine circumvallate papilla taste bud organoid. Sci Rep. Nov 2015.

Finkbeiner SR, Hill DR, Altheim CH, Dedhia PH, Taylor MJ, Tsai YH, Chin AM, **Mahe MM**, Watson CL, Freeman JJ, Nattiv R, Thomson M, Klein OD, Shroyer NF, Helmrath MA, Teitelbaum DH, Dempsey PJ, Spence JR. Transcriptome-wide Analysis Reveals Hallmarks of Human Intestine Development and Maturation In Vitro and In Vivo. Stem Cell Reports. Jun 2015

Moore SR, Guedes MM, Costa TB, Vallance J, Maier EA, Betz KJ, Aihara E, **Mahe MM**, Lima AA, Oriá RB, Shroyer NF. Glutamine and alanyl-glutamine promote crypt expansion and mTOR signaling in murine enteroids. Am J Physiol Gastrointest Liver Physiol. Mar 2015

Mahe MM, Sundaram N, Watson CL, Shroyer NF, Helmrath MA. Establishment of human epithelial enteroids and colonoids from whole tissue and biopsy. JoVE. Mar 2015

Bertaux-Skeirik N, Feng R, Schumacher MA, Li J, **Mahe MM**, Engevik AC, Javier JE, Peek RM Jr, Ottemann K, Orian-Rousseau V, Boivin GP, Helmrath MA, Zavros Y. CD44 plays a functional role in Helicobacter pylori-induced epithelial cell proliferation. PLoS Pathog. Feb 2015

Watson CL, **Mahe MM***, Múnera J, Howell JC, Sundaram N, Poling HM, Schweitzer JI, Vallance JE, Mayhew CN, Sun Y, Grabowski G, Finkbeiner SR, Spence JR, Shroyer NF, Wells JM, Helmrath MA. An in vivo model of human small intestine using pluripotent stem cells. Nat Med. Oct 2014. (***Equal contributors**) (Cover-Art November 2014 Issue)

Mahe MM, Aihara E, Schumacher MA, Zavros Y, Montrose M, Helmrath MA, Sato T, Shroyer NF. Establishment of gastrointestinal epithelial organoids. Curr. Prot. Mouse Biol. Dec 2013.

Fuller MK, Faulk DM, Sundaram N, **Mahe MM**, Stout KM, von Furstenberg RJ, Smith BJ, McNaughton KK, Shroyer NF, Helmrath MA, Henning SJ. Intestinal stem cells remain viable after prolonged tissue storage. Cell Tissue Res. Nov 2013.

Wang F, Scoville D, He XC, **Mahe MM**, Box A, Perry J, Smith NR, Lei Nanye N, Davies PS, Fuller MK, Haug JS, McClain M, Gracz AD, Ding S, Stelzner M, Dunn JC, Magness ST, Wong MH, Martin M, Helmrath M, Li L. Isolation and Characterization of Intestinal Stem Cells Based on Surface Marker Combinations and Colony-Formation Assay. Gastroenterology. May 2013.

Neunlist M, Van Landeghem L, **Mahe MM**, Derkinderen P, des Varannes SB, Rolli-Derkinderen M. The digestive neuronal-glial-epithelial unit: a new actor in gut health and disease. Nat Rev Gastroenterol Hepatol. Feb 2013.

Coron E, Auksorius E, Pieretti A, **Mahe MM**, Liu L, Steiger C, Bromberg Y, Bouma B, Tearney G, Neunlist M, Goldstein AM. Full-field optical coherence microscopy is a novel technique for imaging enteric ganglia in the gastrointestinal tract. Neurogastroenterol Motil. Dec 2012.

Abdo H, **Mahe MM**, Derkinderen P, Bach-Ngohou K, Neunlist M, Lardeux B. The omega-6 fatty acid derivative 15-deoxy-$\Delta^{12,14}$-prostaglandin J_2 is involved in neuroprotection by enteric glial cells against oxidative stress. J Physiol. Jun 2012.

Van Landeghem L, Chevalier J, **Mahe MM**, Wedel T, Urvil P, Derkinderen P, Neunlist M. Enteric glia promotes intestinal mucosal healing via activation of focal adhesion kinase and release of proEGF. Am J Physiol Gastrointest Liver Physiol. Feb 2011.

Flamant M, Aubert P, Rolli-Derkinderen M, Bourreille A, Neunlist MR, **Mahe MM**, Meurette G, Marteyn B, Savidge T, Galmiche JP, Sansonetti PJ, Neunlist M.Enteric glia protect against Shigella flexneri invasion in intestinal epithelial cells: a role for S-nitrosoglutathione. Gut. Dec 2010.

Mahe MM*, Bach-Ngohou K*, Aubert P, Abdo H, Boni S, Bourreille A, Denis MG, Lardeux B, Neunlist M, Masson D. Enteric glia modulate epithelial cell proliferation and differenciation through 15-deoxy-12,14-prostaglandin J2. J Physiol. Jul 2010. (*Equal contributors)

Paillusson S, Tasselli M, Lebouvier T, **Mahe MM**, Chevalier J, Biraud M, Cario-Toumaniantz C, Neunlist M, Derkinderen P. a-Synuclein expression is induced by depolarization and cyclic AMP in enteric neurons. J Neurochem. Nov 2010.

Van Landeghem L, **Mahe MM**, Teusan R, Léger J, Guisle I, Houlgatte R, Neunlist M. Regulation of intestinal epithelial cells transcriptome by enteric glial cells: impact on intestinal epithelial barrier functions. BMC Genomics. Nov 2009.

7. Abstracts:

Mahe MM, Abdo H, Masson D, Denis M, Neunlist M, Lardeux B, Bach-Ngohou K. Enteric glial cells: source of o-6 derivatives involved in the neuroprotection and in the control of intestinal barrier functions. Gut Supplement III, Vol 59, November 2010. UEGW 2010. International

Mahe MM, Bach-Ngohou K, Aubert P, Boni S, Denis M, Neunlist M, Masson D. Les cellules gliales entériques : une source de ligands naturels de PPARγ impliquée dans le contrôle de la prolifération des cellules épithéliales intestinales. French Hepatology and Digestive Oncology week, JFHOD 2010. National

Mahe MM, Bach-Ngohou K, Aubert P, Van Landeghem L, Lardeux B, Denis M, Neunlist M, Masson D. Régulation des fonctions de la barrière épithéliale intestinale par les cellules gliales entériques : implication de la 15-dPGJ2. Intestinal Epithelial Cells Club, CECED 2009. National

Mahe MM, Shroyer NF, Sundaram N, Watson CL, Wang F, Karns R, Li L, Helmrath MA. Small intestine stem cells contain and maintain their regional identity. Federation of American Societies for Experimental Biology Tract XV: Epithelia, Microbes, Inflammation and Cancer.

August 2013, Bethesda, MD, National

Mahe MM, Lo YH, Watson CL, Sundaram N, Karns R, Park JS, Shroyer NF, Helmrath MA. Intestinal region-specific pattern is borne and maintained within the intestinal stem cells. Poster. Digestive Health Center Annual Scientific Retreat. Cincinnati, Ohio, February 2014, Local

Mahe MM, Lo YH, Watson CL, Sundaram N, Karns R, Park JS, Shroyer NF, Helmrath MA. Intestinal region-specific pattern is borne and maintained within the intestinal stem cells. Oral presentation. Abstract of the Year Award. Digestive Disease Week. Cincinnati, Ohio, May 2014. Local

Mahe MM, Helmrath MA. Translating Intestinal Stem Cells Biology to Human Diseases. Oral presentation. Institute of Functional Genomics. Montpellier, France. June 2014, International

Mahe MM, Watson CL, Munera J, Sundaram N, Shroyer NF, Wells JM, Helmrath MA. Generation of a gut in a mouse. Intestinal Epithelial Cells Club, CECED 2015– Oral communication, Nantes, France, National

Mahe MM, Watson CL, Munera J, Sundaram N, Shroyer NF, Wells JM, Helmrath MA. Generation of functional intestine from patient derived pluripotent stem cells. APSA 46th Annual Meeting. May 2015 – Oral communication, Fort Lauderdale, Florida, National

Mahe MM, Workman M, Poling HM, Watson CW, Sundaram N, Schiesser J, Aubert P, Neunlist M, Helmrath MA, Wells JM. Functional neuro-muscular coupling in human small intestine derived from pluripotent stem cells. Poster. Digestive Health Center Annual Scientific Retreat. Cincinnati, Ohio, February 2016, Local

Poling HM, Watson CL, Brink MW, Wells JM, Helmrath MA and **Mahe MM**. Translational Studies in HIOs: Exposure to luminal content and lengthening. Digestive Health Center Annual Scientific Retreat. Cincinnati, Ohio, February 2016, Local

Mahe MM, Workman M, Poling HM, Watson CW, Sundaram N, Schiesser J, Aubert P, Neunlist M, Helmrath MA, Wells JM. Functional neuro-muscular coupling in human small intestine derived from pluripotent stem cells. Keystone Symposia - Stem Cells and Regeneration in the Digestive Organs (X6). March 2016 – Poster, Keystone, Colorado. International

Mahe MM, Workman M, Poling HM, Watson CW, Sundaram N, Schiesser J, Aubert P, Neunlist M, Helmrath MA, Wells JM. Functional enteric nervous system in human small intestine derived from pluripotent stem cells. DDW 2016. May 2016 – Plenary talk, San Diego, California. International

Mahe MM, Workman M, Poling HM, Watson CW, Sundaram N, Schiesser J, Aubert P, Neunlist M, Helmrath MA, Wells JM.. Generating a human gut with an enteric nervous system to understand neural influences on intestinal epithelium. DDRCC 2016. June 2016 – Mayo Clinic, Rochester, Minnesota. National

8. Books, Chapters, Reviews, and Invited Papers:

Mahe MM, Helmrath MA, and Shroyer NF. 109 Organogenesis of the Gastrointestinal Tract, Fetal and Neonatal Physiology 5th Ed. Polin et al, 2016.