

## Curriculum Vitae

### Marcia H. Monaco, Ph.D.

Department of Food Science & Human Nutrition  
University of Illinois

#### CURRENT POSITION

**Senior Research Specialist**, Department of Food Science & Human Nutrition, University of Illinois

#### EDUCATION

<u>Degree</u>	<u>Year</u>	<u>Institution</u>	<u>Field</u>
Ph.D.	1995	University of Illinois (UC)	Nutritional Sciences
<i>Dissertation: Effects of malnutrition on insulin-like growth factors (IGF) and IGF binding proteins during pregnancy and lactation.</i>			
M.S.	1988	University of Rhode Island	Food Science & Nutrition
B.S.	1984	PUC-Campinas, Brasil	Dietetics

#### PROFESSIONAL EXPERIENCE

**Research Scientist**, Department of Food Science and Human Nutrition, University of Illinois, 8/00-present.

**Teaching Associate**, Department of Food Science and Human Nutrition, University of Illinois, 8/97-5/00, FSHN 131 – Introductory Food Laboratory

**Postdoctoral Fellow** in the laboratory of Dr. Matthew Wheeler, Department of Animal Science, University of Illinois, 9/96-8/00.

**Postdoctoral Fellow** in the laboratory of Dr. Sharon Donovan, Department of Food Science and Human Nutrition, University of Illinois, 11/94 - 8/96.

**Graduate Teaching Assistant**, Division of Foods & Nutrition, University of Illinois, 1990-1994, FSHN 131 – Introductory Food Laboratory.

**Nutritional Assistant Coordinator and Consultant** in USAID Leishmaniasis Project, Facultad de Ciencias Medicas, Universidad Central del Ecuador, Quito, Ecuador, 1990.

**Head Dietitian** of the Hospital Municipal de Paulinia, São Paulo, Brasil, October 1985-December 1985.

**Head Dietitian** of the School Lunch Program and the Municipal Hospital, in the City of Paulinia, São Paulo, Brasil, 1984-1985.

### **TEACHING & ORAL PRESENTATION**

April 2009	Seminar on Application of pathways analysis at Northwestern University, Chicago, IL.
March 2003	Guest Lecturer – AnSci 308 – Lactation Behavior
October 2001	Guest Speaker - Joint Symposium on Animal Biotechnology
March 2000	INRA- UI UC, Jouy-en-Josas, France Guest Speaker -Benefits of vegetarianism- Student Dietetic Association
August 1997-May 2000	Teaching Associate – FSHN 131 – Introductory Food Laboratory
July 1997	Guest Lecturer - FSHN 120 - Contemporary Nutrition
March 1995	Guest Speaker on Eating Disorders, McKinley Health Center
August 1990-May 1994	Graduate Teaching Assistant – FSHN 131 – Introductory Food Laboratory
July 1992	Guest Lecturer - FSHN 120 - Contemporary Nutrition
April 1989	Guest Lecturer - FSHN 120 - Contemporary Nutrition
March 1989	Guest Lecturer on Vegetarianism, McKinley Health Center

### **PROFESSIONAL & HONORARY SOCIETIES**

American Society for Nutritional Sciences

International Society for Research on Human Milk and Human Lactation

## HONORS & AWARDS

PROFESSIONAL STAFF AWARD FOR EXCELLENCE - Sustained Excellence in Research, College of Agricultural, Consumer and Environmental Sciences, 2011

Young Investigator Travel Award, International Society for Research on Human Milk and Lactation, Tenth International Conference on Lactation, Tucson, AZ, 2000

Student Travel Award, Division of Nutritional Sciences, University of Illinois, 1992

Conference Travel Support Grant, Graduate College, University of Illinois, 1992

Young Investigator Travel Award, International Society for Research on Human Milk and Lactation, Sixth International Conference on Lactation, Stockholm, Sweden, 1992.

Ruth Wardall Fellowship, Division of Foods & Nutrition, University of Illinois-UC, 1990-1991.

Master and Doctoral Fellowship, Coordenação de Aperfeiçoamento de Pessoal de Nivel Superior (MEC/CAPES), Brasil, 1986-90 .

Professional Training Fellowship, Institute of Food Technology, Campinas, 1982-1983.

## LANGUAGES

English, Portuguese, Spanish

## PUBLICATIONS

*(Manuscripts in reverse chronological order)*

**Monaco MH**, Kashtanov DO, Wang M, Walker DC, Rai D, Jouni ZE, Miller MJ, Donovan SM. 2011 Additional of polydextrose and galactooligosaccharide to formula does not affect bacterial translocation in the neonatal piglet. *Journal of pediatric Gastroenterology nutrition* 52:210-16.

Chapkin RS, Zhao C, Ivanov I, Davidson LA, Goldsby JS, Lupton JR, Mathai RA, **Monaco MH**, Rai D, Russell M, Donovan SM, Dougherty ER. 2010 Non-invasive stool-based detection of infant gastrointestinal development using gene expression profiles from exfoliated epithelial cells. *American Journal Physiology, Gastrointestinal and Liver Physiology* 298:G528-9.

Bernstein RM, Leigh SR, Donovan SM, **Monaco MH**. 2008 Hormonal correlates of ontogeny in baboons (*Papio hamadryas anubis*) and mangabeys (*Cercocebus atys*). *American Journal Physical Anthropology*. 136(2):156-68.

Bernstein RM, Leigh SR, Donovan SM, **Monaco MH**. 2007 Hormones and body size evolution in papionin primates. *American Journal Physical Anthropology* 132(2):247-60.

- Monaco MH**, Gronlund DE, Hurley WL, Wheeler MB, Donovan SM. 2005 Mammary specific transgenic over-expression of insulin-like growth factor-I (IGF-I) increases pig milk IGF-I and IGF binding proteins, with no effect on milk composition or yield. *Transgenic Research* 14(5):761-73.
- Hartke JL, **Monaco MH**, Wheeler, MB, Donovan SM. 2005 effect of a short-term fast on intestinal disaccharidase activity and villus morphology of piglets suckling insulin-like growth factor-I transgenic sows. *Journal of Animal Sciences* 83:2404-13.
- Donovan SM, Hartke JL, **Monaco MH**, Wheeler MB. 2004 Insulin-like growth factor-I and piglet intestinal development. *Journal of Dairy Sciences* 87:(E. Supplem.):E47-E54.
- Boileau TW, Clinton SK, Zaripheh S, **Monaco MH**, Donovan SM, Erdman Jr, JW. 2001 Testosterone and food restriction modulate hepatic lycopene isomer concentrations in male F344 rats. *J Nutrition*;131(6):1746-52
- Donovan SM, **Monaco MH**, Bleck GT, Cook JB, Noble M, Hurley WL, Wheeler MB. 2000 Transgenic over-expression of bovine a-lactalbumin and human IGF-I in porcine mammary gland: effects on lactation and piglet growth and development. *Journal of Dairy Science* 83(Suppl. 1): 9.
- Averette LA, Odle J, **Monaco MH**, Donovan SM. 1999 Dietary fat during pregnancy and lactation increses milk fat and insulin-like growth factor I concentration and increases neonatal growth rates in swine. *J. Nutrition* 129: 2123-2129.
- Park YK, **Monaco MH**, Donovan SM. 1999 Enteral insulin-like growth factor-I augments intestinal disaccharidase activity in piglets on total parenteral nutrition. *Journal of Pediatric Gastroenterology and Nutrition* 29:198-206.
- Keen CL, Ensunsa JL, Watson MH, Baly DL, Donovan SM, **Monaco M**, Clegg MS. 1999 Nutritional aspects of manganese from experimental studies. *NeuroToxicology*; 20:213-223.
- Clegg MS, Donovan SM, **Monaco MH**, Baly DL, Ensunca JL, Keen CL. 1998 The influence of manganese deficiency on serum IGF-I and IGF binding proteins in the male rat. *Proceedings of the Society for Experimental Biology and Medicine (PSEBM)* 219:41-47
- Park YK, **Monaco MH**, Donovan SM. 1998 Total parenteral nutrition (TPN) via umbilical catheterization: Development of a piglet model to investigate therapies to improve gastrointestinal structure and enzyme activity during TPN. *Biology of the Neonate* 73:295-305.
- Monaco MH** and Donovan SM. 1997 Insulin-like growth factor-I infusion increases in vivo skeletal muscle and mammary  $\alpha$ -amino[1-<sup>14</sup>C]isobutyric acid accumulation in food restricted lactating rats. *Nutrition Research* 17:1143-1154.

**Monaco MH** and Donovan SM. 1997 Alteration in the growth hormone-insulin-like growth factor axis in food restricted lactating rats. *Journal of Endocrinology* 152: 303-316.

Donovan SM, Houle VM, **Monaco MH**, Schroeder EA, Park Y, Odle J. 1996 The neonatal piglet as a model to insulin-like growth factor-mediated intestinal growth and function. In Schook LB, Tumbleson M (eds), *Advances in Swine in Biomedical Research*, vol.2. Plenum Publishing Corp., New York, NY, Chapter 64, p. 733-743.

**Monaco MH** and Donovan SM. 1996 Moderate food restriction abolishes the pregnancy-associated rise in serum growth hormone and decreases serum insulin-like growth factor-I (IGF-I) concentrations without altering IGF-I mRNA expression in rats. *Journal of Nutrition* 126: 544-553.

Weigel MM, Armijos RX, **Monaco MH**, Izurieta R, Racines JR. 1992 Nutritional and health status of rural women colonists in subtropical lowlands of northwest Ecuador. *Ecology of Food and Nutrition* 29:25.

## ABSTRACTS

Jin Lu, Jill M. Shunk, Sarah S. Comstock, **Marcia H. Monaco**, Sharon M. Donovan. Detection of rotavirus specific immunoglobulins in the serum of neonatal piglets with or without colostrum feeding. *The FASEB Journal* 2011.

Donovan SM, Davidson LA, Zhao C, Ivanov I, Goldsby JS, Lupton JR, Mathai RA, **Monaco MH**, Rai D, Russell M, Dougherty ER, Chapkin RS. Non-invasive stool-based detection of newborn infant gastrointestinal development using gene expression profiles derived from exfoliated epithelial cells. *The FASEB Journal* 2010; 24: in press

Cope SC, Hester SN, Comstock SS, **Monaco MH**, Donovan SM. Dietary yeast  $\beta$ -glucan does not improve the response to influenza vaccination in neonatal piglets. *The FASEB Journal* 2010; 24: in press.

Hester SN, Cope SC, Comstock SS, **Monaco MH**, Donovan SM. Effect of dietary yeast  $\beta$ -glucan on immune development in neonatal piglets. *The FASEB Journal* 2010; 24: in press.

Wang M, Radlowski EC, **Monaco MH**, Chen L, Miller MJ, Fahey GC, Gaskins HR, Donovan SM. Mode of delivery and early nutrition modulate microbial colonization and fermentation products in the neonatal piglet. *The FASEB Journal* 2009; 23: LB497.

**Monaco MH**, Kashtanov DO, Rai D, Walker DC, Jouni ZE, Miller MJ, Donovan SM. The addition of polydextrose and galactooligosaccharide to formula does not affect

barrier function or bacterial translocation in neonatal piglets. *The FASEB Journal* 2009; 23: LB479.

Radlowski EC, Wang M, **Monaco MH**, Nehrling E, Tappenden KA, Donovan SM. Mode of delivery and early nutrition differentially impact intestinal development of the neonatal piglet. *The FASEB Journal* 2009; 23: LB486.

Chen L, Wang M, **Monaco MH**, Donovan SM, Miller MJ. Impacts of piglet age and route of delivery on ileal *Lactobacillus* diversity *The FASEB Journal* 2009; 23: 903.1

Wang M, Radlowski EC, **Monaco MH**, Fahey GC, Gaskins HR, Donovan SM. Intestinal microbiota of sow-reared piglets is unaffected by route of delivery. *The FASEB Journal* 2009; 23: 903.2.

**Monaco MH**, Drnevich JM, Ramanujam KS, Donovan SM. Impact of route of nutrient administration and colostum on the intestinal epithelial transcriptome. *Breast Milk: Physiology, Biochemistry and Outcomes. The 2006 Meeting of the International Society for Research in Human Milk and Lactation*. Niagara-on-the Lake, Ontario, Canada, September, 2006.

Gunness J, **Monaco MH**, Lönnerdal B, Donovan SM. Porcine milk proteins throughout lactation and isolation of lactoferrin and immunoglobulin. *Journal of Dairy Science* 2005; 88 (Suppl. 1): 143.

Hartke J, **Monaco MH**, McCusker R, Wheeler MB, Donovan SM. Small intestinal IGF-I binding protein (IGFBP)-2 and -5 and IGF receptors in piglets suckling IGF-I transgenic sows. *Journal of Dairy Science* 2005; 88 (Suppl. 1): 282

**Monaco MH**, Wheeler MB, Donovan SM. Transgenic over-expression of IGF-I modulates the synthesis and secretion of pig milk IGFBP-2 and -5 in the early and post-lactation periods. *Journal of Dairy Science* 2005; 88 (Suppl. 1): 282.

Donovan SM, Hartke JL, **Monaco MH**, Wheeler MB. Insulin-like growth factor-I and piglet intestinal development in biomedical models and transgenics. *International Symposium 2005 - Swine in Biomedical Research*, Washington, D.C.

**Monaco MH**, Hurley WL, Wheeler MB, Donovan SM. Insulin-like growth factor-I (IGF-I) modulates the process of mammary apoptosis after weaning in IGF-I transgenic pigs. *Journal of Animal Sciences* 2003, 81(Suppl. 1):190

Hartke JH, **Monaco MH**, Wheeler MB, Donovan SM. Intestinal growth and development in piglets suckling insulin-like growth factor-I (IGF-I) transgenic sows. *J. Animal Sciences* 2003, 81(Suppl. 1):532.

- Hartke JH, **Monaco MH**, Wheeler MB, Donovan SM. Effect of a short-term fast on intestinal disaccharidase activity and villus morphology in piglets suckling insulin-like growth factor-I (IGF-I) transgenic sows. *J. Animal Sciences* 2003, 81(Suppl. 1):W64.
- Gronlund DE, Hurley WL, **Monaco MH**, Wheeler MB, Donovan SM. Over-expression of insulin-like growth factor-I in lactating porcine mammary tissue has a differential effect on amino acid transport systems. *Journal of Animal Sciences*, 2003, 81(Suppl. 1):190.
- Rudloff S, Henkel C, Pohlentz G, Wheeler MB, **Monaco MH**, Donovan SM. Total oligosaccharide and sialyl-lactose content are elevated in the colostrum of  $\alpha$ -lactalbumin transgenic pigs. *The FASEB Journal* 2002:A265
- Monaco MH**, Cool JB, Wheeler MB, Donovan SM. Development of swine transgenic for bovine  $\alpha$ -lactalbumin and human insulin-like growth factor-I: data on milk composition, milk production and piglet growth. *Proceedings of the Annual Conference of the International Embryo Society*, Foz de Iguacu, Brasil, January 2002.
- Monaco, MH**, Cook, JB, Tappenden KA, Wheeler, MB, Donovan, SM. Intestinal lactase activity is increased in piglets suckling IGF-I transgenic sows. *The FASEB Journal* 2001: A644.
- Monaco, MH**, Bleck, GT, Cook, JB, Wheeler, MB, Donovan, SM. 2000 Mammary-specific overexpression of IGF-I in transgenic swine increases milk IGF-I and IGF binding protein-2 and -5. 10<sup>th</sup> International Conference of the International Society for Research on Human Milk and Lactation.
- Boileau TW-M, Clinton SK, Liao Z, **Monaco MH**, Donovan SM, Erdman Jr, JW. Lycopene, tomato powder and diet restriction influence survival of rats with NMU-testosterone-induced prostate cancer. *American Institute for Cancer Research meetings*, Washington, D.C., August 31 – September 1, 2000.
- Monaco MH**, Chen A.-C, Correa N, Gannesun D, Gaskins HR, Lynch JK, McCarthy MC, Pelletier SE, Donovan SM. Effect of oral insulin-like growth factor-I (IGF-I) during the suckling period on intestinal structure and immune cell composition during weaning in pigs. *The FASEB Journal* 2000; 14: A506.
- Monaco MH**, Bleck GT, Cook JB, Wheeler MB, Donovan SM. Transgenic overexpression of insulin-like growth factor-I in milk of swine using the bovine  $\alpha$ -lactalbumin promoter and regulatory proteins. *The FASEB Journal* 2000; 14: A507.
- Bleck GT, **Monaco MH**, Donovan SM. Production of transgenic pigs and mice encoding human insulin-like growth factor-I under control of the bovine  $\alpha$ -lactalbumin promoter and regulatory regions. *J. Animal Science* 1998; 76: (Suppl. 1):213.
- Monaco MH** and Donovan SM. Oral IGF-I reduces intestinal type I IGF receptor binding and IGF binding protein-2 (IGFBP-2) in piglets. *The FASEB Journal* 1998; 12:A556.

**Monaco MH** and Donovan SM. Intestinal IGF binding profiles in piglets fed formula containing IGF-I. *The FASEB Journal* 1997; 11:A144.

Park YK, **Monaco MH**, Donovan SM. Oral insulin-like growth factor-I (IGF-I) enhances the effect of limited enteral feeding on intestinal development of piglets on total parenteral nutrition (TPN). *The FASEB Journal* 1997; 11:A401.

**Monaco MH** and Donovan SM. Small intestine type I and type II insulin-like growth factor receptor expression in piglets fed formula supplemented with insulin-like growth factor-I (IGF-I). *The FASEB Journal* 1996; 10: A728.

Park YK, **Monaco MH**, Donovan SM. Effect of oral formula  $\pm$  IGF-I on intestinal growth and enzyme activity of piglets on total parenteral nutrition (TPN). *The FASEB Journal* 1996; 10:A227.

Clegg MS, Donovan SM, **Monaco MH**, Baly DL, Ensunsa JL, Keen CL. Manganese deficiency effects circulating growth hormone (GH), IGF-I and IGFBPs in the male rat. *The FASEB Journal* 1996; 10:A786.

**Monaco MH**, Houle VM, Donovan SM. Intestinal type I and type II insulin-like growth factor (IGF) receptor expression in piglets fed formula with or without IGF-I. *International Symposium 1995 - Swine in Biomedical Research*, Washington, D.C.

**Monaco MH** and Donovan SM. IGF-I infusion increases in vivo tissue [ $1-^{14}\text{C}$ ]AIB accumulation in food restricted lactating rats. *The FASEB J* 1995; 10:A760.

**Monaco MH**, Gaskin HR, Donovan SM. Lactating rat serum and milk insulin concentrations. *The FASEB J* 1994; 8:A174

**Monaco MH** and Donovan SM. Insulin-like growth factor binding proteins (IGFBPs) in food restricted lactating rats. *The FASEB J* 1993; 7:A823.

**Monaco MH**, Zhao X, Donovan SM. Effect of food restriction during pregnancy on serum insulin-like growth factors and IGF-binding proteins. *The FASEB Journal* 1992; 6:A1961.

Donovan SM, **Monaco MH**, Zhao X. Hormonal treatment during recovery from malnutrition: effects on body weight, organ growth, and IGF binding proteins. *Proceedings of the 74th Annual Meeting of The Endocrine Society* 1992, p. 340.

**Monaco MH**, Donovan SM. Effects of food restriction during pregnancy and lactation on serum insulin-like growth factors and IGF-binding proteins. *Conference on Nutrient Regulation during Pregnancy, Lactation and Infant Growth*. 1992; Stockholm, Sweden.

Donovan SM, **Monaco MH**, Zhao X. Hormonal treatment during recovery from malnutrition: effects on body weight, organ growth, and IGF binding proteins. *Conference on Nutrient Regulation during Pregnancy, Lactation and Infant Growth*. Stockholm 1992, Sweden.

**Monaco MH**, Weigel MM, Armijos RX, Racines JR, Vilareal M. Assessment of nutritional status of rural children living in leishmaniasis endemic areas in NW Ecuador. *American Journal of Human Biology* 1991; 3:66.

Armijos RX, Izurieta R, Weigel MM, Racines JR, **Monaco MH**. Traditional folk and cultural perceptions of cutaneous leishmaniasis in NW Ecuador. *American Journal of Human Biology* 1991; 3:62.

Weigel MM, **Monaco MH**, Armijos RX, Racines JR. Maternal health and nutritional status in remote tropical community in NW Ecuador. *American Journal of Human Biology* 1991; 3:69.

**Monaco MH**, Weigel MM, Narvaez M, Peon-Borja O, Macias-Delgado R, Macias-Andrade R. Prenatal dietary adequacy of urban Ecuadorian primiparas. *American Journal of Human Biology* 1990; 2(2);194.

## **PATENTS**

US 6,677,500 B2: "Ungulates expressing exogenous IGF-I in their milk." Wheeler MB, Donovan SM, Bleck GT, and Monaco-Siegel, M, issued January 13, 2004.

US 7,169,963: "Mammals Expressing IGF-1 and Alpha-Lactalbumin in their Milk" Wheeler MB, Donovan SM, Bleck GT, and Monaco-Siegel, M, issued January 30, 2007.