
BIOGRAPHICAL SKETCH

NAME Susan E. Crawford	POSITION TITLE
	Professor, Department of Pathology

EDUCATION/TRAINING			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Arizona St University, Tempe, AZ	B.S.	1978	Public Health
Midwestern/Rush University/Rush Pres. St. Luke's	Med/Path	1986, 1989	Medicine/Anatomic Pathology
Northwestern University/Children's Memorial Hospital	Res/Fellow	1990	Pediatric Pathology

Personal Statement

Our laboratory has worked extensively with PEDF and, more recently, it has been shown to bind ATGL and modulate lipid metabolism. Loss of PEDF in mice results in hyperglycemia, increased visceral adiposity, and insulin resistance. We have demonstrated that PEDF also has potent anti-tumor activities against a wide spectrum of tumors including neuroblastoma, Wilms' tumor, prostate and pancreatic cancer. Concurrent loss of PEDF and Kras in mice promotes pancreatic tumor cell invasion supporting an anti-invasive role for PEDF. In the current project, I would be happy to provide expertise in PEDF biology and reagents needed to complete the studies. While I was at Northwestern University, I was the Director of the Mouse Phenotyping Core Facility which served the scientific community at The Robert H. Lurie Comprehensive Cancer Center and other departments. I have participated in characterizing numerous knockout mouse models including thrombospondin-1 (TSP-1) (Crawford SE, et al, Cell, 1998), GATA-3 (Lim K, et al, Nature Gen, 2000), PPAR binding protein (Crawford SE, et al, J Biol Chem, 2002), pigment epithelium-derived factor (PEDF) (Doll JA, Nature Med, 2003), Dax1 (Meeks JJ, et al, Development, 2003), and others. I would be happy to assess the phenotype of murine models and harvest tissue as well as analyze immunohistochemical stains.

Positions and Honors:

Professional Experience:

1990-2000 Assistant Professor of Pathology, Northwestern University Medical School, Chicago, Illinois
1995-1997 Research Fellow under direction of Dr. Noel Bouck, Northwestern University, Chicago, Illinois
2000-2007 Associate Professor of Pathology, Northwestern University Medical School, Chicago, Illinois
2007-2010 Professor of Pathology, Northwestern University Medical School, Chicago, Illinois
2005-2008 Director, Murine Phenotyping Core Facility, Lurie Cancer Center, Northwestern University
2008-2012 Director of Urological & Metabolic Research, NorthShore University HealthSystem Research Institute, Affiliate of University of Chicago, Evanston, Illinois
2012-present Vice Chair for Research & Professor, Dept. of Pathology, Professor, Department of Ophthalmology, Saint Louis University

Appointments and Awards:

1993;2012 Baffes Award for Scientific Achievement in Cardiovascular Surg. Research; AUA Science Award
2002 National Academy of Science, Study panel member, safety evaluation of anti-angiogenic agent
2003-07 NIH Tumor Cell Biology (formerly Metabolic Pathology) Study Section, Regular Member
2004 NIH – NCI: Committee to identify new directions in cancer biology
2006-07 NIH – NCI – Cellular & Molecular Biology P01 Cluster Review Panel
2008-present NIH Training Grants in Oncological Sciences-Ruth L Kirschstein awards

Most Relevant Publications:

1. Dawson, DW, Volpert O, Gillis P, Crawford SE, Xu H, Benedict W, Bouck NP. Pigment epithelium-derived factor: A potent inhibitor of angiogenesis. *Science*. 285(5425):245-248, 1999. PMID: 10398599
2. Doll JA, Stellmach VM, Bouck NP, Bergh AR, Lee C, Abramson LP, Cornwell ML, Pins MR, Borensztajn J, Crawford SE. Pigment epithelium-derived factor regulates the vasculature and mass of the prostate and pancreas. *Nat Med*. 9(6):774-80, 2003. PMID: 12740569.
3. Crawford SE, Stellmach V, Ranalli M, Huang X, Huang L, Volpert O, De Vries GH, Abramson LP, Bouck N. Pigment epithelium-derived factor (PEDF) in neuroblastoma: a multifunctional mediator of Schwann cell antitumor activity. *J Cell Sci*. 114(24):4421-8, 2001. PMID: 11792807.
4. Grippo PJ, Fitchev PS, Bentrem DJ, Melstrom LG, Dangi-Garimella S, Krantz SB, Heiferman MJ, Chung C, Adrian K, Cornwell ML, Flesche JB, Rao SM, Talamonti MS, Munshi HG, Crawford SE. Concurrent PEDF deficiency in mutant kRas mice induces invasion of pancreatic tumors in a fat-enriched stroma. *Gut* 61(10):1454-64, 2012. PMID: 22234980.
5. Crawford SE, Stellmach V, Murphy-Ullrich JE, Ribeiro SM, Lawler J, Hynes RO, Boivin GP, Bouck N. Thrombospondin-1 is major activator of TGF-beta1 in vivo. *Cell*. 93(7):1159-70, 1998. PMID: 9657149

Publications (selected from 123 publications):

6. Chung C, Doll JA, Gattu A, Shugrue C, Cornwell C, Fitchev P, and Crawford SE. PEDF regulates hepatocyte triglyceride content through adipose triglyceride lipase (ATGL). *J. Hepatol*. 48(3): 471-8, 2008. PMID: 18191271
7. Chung C, JA Doll, VM Stellmach, J Gonzales, S Surapureddi, M Cornwell, JK Reddy, Crawford SE. Pigment epithelium-derived factor is an angiogenesis and lipid regulator that activates peroxisome proliferator-activated receptor alpha. *Adv Exp Med Biol*. 617: 591-7, 2008. PMID: 18497086
8. Stellmach V, Crawford SE, Zhou W, Bouck N. Prevention of ischemia induced retinopathy by the natural ocular anti-angiogenic agent pigment epithelium-derived factor. *Proc Natl Acad Sci USA*. 98:2593-7, 2001. PMID: 11226284
9. Crawford SE, Qi C, Misra P, Stellmach V, Rao MS, Engel JD, Zhu Y, Reddy JK. Defects of the heart, eye, and megakaryocytes in peroxisome proliferator activator receptor-binding protein (PBP) null embryos implicate GATA family of transcription factors. *J Biol Chem*. 277(5):3585-92, 2002. PMID: 11724781
10. Zhu YJ, Crawford SE, Stellmach V, Dwivedi RS, Rao MS, Gonzalez FJ, Qi C, Reddy JK. Coactivator PRIP, the peroxisome proliferator-activated receptor-interacting protein, is a modulator of placental, cardiac, hepatic, and embryonic development. *J Biol Chem*. 278(13):1986-90, 2003. PMID: 12446700
11. Lim KC, Lakshmanan G, Crawford SE, Gu Y, Grosveld F, Engel JD. Gata3 loss leads to embryonic lethality due to noradrenaline deficiency of the sympathetic nervous system. *Nat. Genet*. 25(2):209-12, 2000. PMID: 10835639
12. Schmitz, JC Protiva P, Gattu AK, Utsumi T, Iwakiri Y, Neto AG, Quinn M, Cornwell ML, Fitchev P, Lugea A, Crawford SE, Chung C. Pigment epithelium-derived factor regulates early pancreatic fibrotic response and suppresses profibrotic cytokine thrombospondin-1. *Am J Path* 2011 Sep 27, PMID: 2194188
13. Jimenez B, Volpert O, Crawford SE, Febbraio M, Silverstein RL, Bouck N. Signals leading to apoptosis-dependent inhibition of neovascularization by thrombospondin-1. *Nat. Med*. 6(1):41-48, 2000. PMID: 10613822
14. Becerra SP, Dass CR, Yabe T, Crawford SE. Pigment epithelium-derived factor: chemistry, structure, biology, and applications. *J Biomed Biotechnol*. 2012:830975. PMID: 22988425

Research Support:

P50-CA090386 (Lee, C) (Project #2: Crawford, SE – PI) Source: NIH/NCI Dates: 6/1/2001-1/31/2014
Title: PEDF regulation of adipogenesis and leptin in prostate cancer.

Aim: To investigate the mechanisms underlying the link between obesity, leptin and PEDF in prostate cancer.
Overlap: No overlap.

R01-CA160809 (Savkovic, Suzana) Source: NIH/NCI Dates: 6/1/12-3/31/16
Title: Regulation of Lipid Droplets and Foxo3 in Intestinal Epithelial Cell Proliferation. Role: Co-Investigator
Aim: To assess if the LD induced proliferative response in colonic cancer cells depends on FOXO3, find if selective blockade of LD in Foxo3 deficient mice suppresses proliferation of colonic epithelia and to identify Foxo3 dependent genes regulating lipid metabolism.