
BIOGRAPHICAL SKETCH

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NAME Conrad, Kirk P.	POSITION TITLE Professor, University of Florida College of Medicine		
eRA COMMONS USER NAME KIRK CONRAD			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Bowdoin College, Brunswick, ME	BA	1977	Biochemistry
Dartmouth Medical School, Hanover, NH	MD	1980	Medicine
University of Colorado Health Sciences Center, Denver, CO	Medical Intern	1980-1981	Medicine
Dartmouth Medical School, Hanover, NH	Postdoctoral Fellow	1981-1984	Renal Physiology
Case Western Reserve University, Cleveland, OH	Visiting Instructor/ Postdoctoral Fellow	1985-1987	Renal/Cell Physiology

A. Personal Statement

I have long standing research interest in several areas of Reproductive and Perinatal Biology, and Preeclampsia Research: mechanisms underlying maternal vasodilation and increased arterial compliance during normal pregnancy with emphasis on the ovarian hormone relaxin; maternal cardiovascular and renal adaptations to pregnancy in women conceiving by Assisted Reproductive Technologies (ART), as well as the perinatal outcomes of ART (with Mark S. Segal MD, PhD University of Florida & Valerie Baker MD, Stanford University); decidualization, placentation and trophoblast, and their involvement in the etiology and pathogenesis of preeclampsia and intrauterine growth restriction; the role of relaxin in bone marrow derived angiogenic progenitor cell mobilization and function in pregnancy (again, with Mark S. Segal MD, PhD). I have combined preclinical and clinical research successfully throughout my career, in order to translate discoveries in animal models, tissues and cells to humans.

Positions and Honors

Positions and Employment

1984-1990 Assistant Professor, Department of Physiology, Dartmouth Med Sch, Hanover, NH
1990-1992 Assistant Professor, Departments of Physiology and of Ob/Gyn, University of New Mexico School of Medicine, Albuquerque, NM
1992-1994 Associate Professor, Departments of Physiology and of Ob/Gyn, University of New Mexico School of Medicine, Albuquerque, NM
1994-1999 Associate Professor, Department of Ob/Gyn and Reproductive Sciences, University of Pittsburgh School of Medicine, Pittsburgh, PA
1996-2006 Tenure Status, Department of Ob/Gyn and Reproductive Sciences, University of Pittsburgh School of Medicine, Pittsburgh, PA
1996-1999 Associate Professor (Secondary Appointment), Department of Cell Biology and Physiology, University of Pittsburgh School of Medicine, Pittsburgh, PA
2000-2006 Professor (Primary Appointment) Department of Ob/Gyn and Reproductive Sciences, and Professor (Secondary Appointment) Department of Cell Biology and Physiology, University of Pittsburgh School of Medicine, Pittsburgh, PA
2000-2003 Member, NIH Human Embryology and Development Study Section-1
2004 Sabbatical Leave, Honorary Fellow Department of Zoology, University of Melbourne, Parkville, Victoria, Australia, Jan-July.

2006-	Professor (with Tenure) Department of Physiology and Functional Genomics, University of Florida College of Medicine, Gainesville, FL
2007-	Professor (secondary appointment) Department of Ob/Gyn, University of Florida College of Medicine, Gainesville, FL
2007-2010	Council Member, Society for Gynecological Investigation
2008-present	Co-Coordinator, Reproductive and Perinatal Biology Research Program, University of Florida
2010-2014	Secretary Treasurer, Society for Gynecological Investigation

Honors and Awards

1976	James Bowdon Honor Society
1977	Magna Cum Laude
1979	Alpha Omega Alpha Honor Society
1980	Good Physicians Award (Dartmouth Medical School)
1985-1990	Physician Scientist Award, K11 HD00662
1988-1993	8th Mallinckrodt Scholar Award
1990	Outstanding Teacher Award in the Basic Sciences
1991-1994	Flinn Newly Independent Investigator Award (American Heart Association)
1993	Basic Medical Sciences Teaching Award presented by UNM Sch. of Medicine Graduates
1995-1999	Research Career Development Award, KO4 HD01098
2010	Ernest H. Starling Distinguished Lectureship of the American Physiological Society Water & Electrolyte Homeostasis Section
2010	Senior Faculty Research Award for the University of Florida Chapter of Sigma Xi
2010	Sir William Liley Lectureship, Perinatal Research Society
2012	Dutch Heart Foundation Lecture
2013	Exemplary Teacher Award University of Florida College of Medicine

B. Selected Peer-Reviewed Publications

1. **Conrad K.P.** Renal hemodynamics during pregnancy in chronically catheterized, conscious rats. **Kidney Int.** 26:24-29,1984.
2. **Conrad K.P.** and Colpoys M.C. Evidence against the hypothesis that prostaglandins are the vasodepressor agents of pregnancy. Serial studies in chronically instrumented, conscious rats. **J. Clin. Invest.** 77:236-245, 1986.
3. **Conrad K.P.** and Vernier K.A. Plasma level, urinary excretion and metabolic production of cGMP during gestation in rats. **Am. J. Physiol.** 257 (**Regulatory Integrative Comp. Physiol.** 26): R847-R853, 1989.
4. **Conrad K.P.**, Barrera S.A., Friedman P.A. and Schmidt V.M. Evidence for attenuation of myo-inositol uptake, phosphoinositide turnover and inositol phosphate production in aortic vasculature of rats during pregnancy. **J. Clin. Invest.** 87:1700-1709,1991.
5. Gilson G.J., Mosher M.D. and **Conrad K.P.** Systemic hemodynamics and oxygen transport during pregnancy in chronically instrumented, conscious rats. **Am. J. Physiol.** 263 (**Heart Circ. Physiol.** 32): H1911-H1918, 1992.
6. **Conrad K.P.**, Joffe G.M., Kruszyna H., Kruszyna R., Rochelle L.G., Smith R.P., Chavez J.E. and Mosher M.D. Identification of increased nitric oxide biosynthesis during pregnancy in rats. **FASEB J.** 7:566-571,1993.
7. **Conrad K.P.**, Vill M., McGuire P.G., Dail W.G. and Davis A.K. Expression of nitric oxide synthase by syncytiotrophoblast in human placental villi. **FASEB J.** 7:1269-1276,1993.
8. Danielson L.A. and **Conrad K.P.** Acute blockade of nitric oxide synthase inhibits renal vasodilation and hyperfiltration during pregnancy in chronically instrumented conscious rats. **J. Clin. Invest.** 96:482-490,1995.
9. **Conrad K.P.**, Benyo D.F., Westerhausen-Larson A. and Miles T.M. Expression of erythropoietin by the human placenta. **FASEB J.** 10:760-768,1996.
10. Danielson L.A. and **Conrad K.P.** Prostaglandins maintain renal vasodilation and hyperfiltration during chronic nitric oxide synthase blockade in conscious pregnant rats. **Circ. Res.** 79:1161-1166,1996.

11. Sladek S.M., Magness R.R. and **Conrad K.P.** Nitric oxide and pregnancy. **Am. J. Physiol.** 272: R441-R463, 1997 (Invited Review).
12. Benyo D.F., and **Conrad K.P.** Expression of the erythropoietin receptor by trophoblast cells in the human placenta. **Biol. Reprod.** 60:861-870,1999.
13. Danielson L.A. Sherwood O.D. and **Conrad K.P.** Relaxin is a potent renal vasodilator in conscious rats. **J. Clin. Invest.** 103:525-533,1999.
14. Novak J., Danielson L.A., Kerchner L.S., Sherwood O.D., Ramirez R.J., Moalli P.A. and **Conrad K.P.** Relaxin is essential for renal vasodilation during pregnancy in conscious rats. **J. Clin. Invest.** 107:1469-1475, 2001.
15. Jeyabalan A., Novak J., Danielson L.A., Kerchner L.J., Opett S.L., and **Conrad K.P.** Essential role for vascular gelatinase activity in relaxin-induced renal vasodilation, hyperfiltration, and reduced myogenic reactivity of small arteries. **Circ. Res.** 93:1249-1257, 2003.
16. **Conrad K.P.** and Novak J. The emerging role of relaxin in renal and cardiovascular function. **Am. J. Physiol.** 287:R250-R261, 2004 (Invited Review).
17. Novak J., Parry L.J., Matthews J., Kerchner L.J., Indovina K., Hanley-Yanez K., Doty K.D., Debrah D.O., Shroff S.G., and **Conrad K.P.** Evidence for local relaxin ligand-receptor expression and function in arteries. **FASEB J.** 20:2352-62, 2006.
18. Debrah D.O., Novak J., Matthews J.E., Ramirez R.J., Shroff S.G., and **Conrad K.P.** Relaxin is essential for systemic vasodilation and increased global arterial compliance during early pregnancy in conscious rats. **Endocrinol.** 147:5126-31, 2006.
19. Founds S.A., Conley Y.P., Lyons-Weiler J.F., Jeyabalan A., Hogge W.A., and **Conrad K.P.** Altered global gene expression in first trimester placentas of women destined to develop preeclampsia. **Placenta** 30:15-24, 2009.
20. **Conrad KP.** Unveiling the vasodilatory actions and mechanisms of relaxin. **Hypertension** 56:2-9, 2010 (Invited review).
21. McGuane J.T., Debrah J.E., Sautina L., Rubin J.P., Novak J., Segal M.S. and **Conrad K.P.** Relaxin induces rapid dilation of rodent small renal and human subcutaneous arteries via PI3 kinase and nitric oxide. **Endocrinol.** 152:2786-96, 2011.
22. McGuane J.T., Danielson L.A., Debrah J.E., Rubin J.P., Novak J. and **Conrad K.P.** Angiogenic growth factors are new players in the sustained relaxin vasodilatory pathway in rodents and humans. **Hypertension** 57:1151-60, 2011.
23. Debrah D.O., Debrah J.E., Haney J.L., McGuane J.T., Sacks M.S., **Conrad K.P.** and Shroff S.G. Relaxin regulates vascular wall mechanical properties and remodeling in mice. **J Appl Physiol.** 111:260-71, 2011.
24. **Conrad KP,** Shroff SG. Effects of relaxin on arterial tone and remodeling. **Mediators Mechanisms, and Pathways in Tissue Injury** section of *Current Hypertension Reports* (Volume 13, Issue 6). Taegtmeier and Atlas, eds., 2011 (Invited Review).
25. **Conrad KP.** 2010 Ernest H. Starling Lectureship. Maternal vasodilation in pregnancy: the emerging role of relaxin. **Am J Physiol. Regulatory Integrative Comp. Physiol.** 301:R267-275, 2011 (Invited Review).
26. Segal M.S., Sautina L., Li S., Diao Y., Agoulnik A.I., Kielczewski J, McGuane J.T., Grant M.B., and **Conrad K.P.** Relaxin increases human endothelial progenitor cell NO and migration and vasculogenesis in mice. **Blood,** 119:629-36, 2012.
27. McGuane J.T. and **Conrad K.P.** GPCRs as potential therapeutic targets in preeclampsia. **Drug Discovery Today: Disease Models.** 9(3):e119-e127, 2012 (Invited Review).
28. **Conrad K.P.** and Baker V.L. Corpus luteal contribution to maternal pregnancy physiology and outcomes in assisted reproductive technologies. **Am. J. Physiol. Regulatory Integrative Comp. Physiol.** 304:R69-72, 2013 (Perspectives).
29. Vodstrcil L.A., Tare M., Novak J., Dragomir N., Ramirez R.J., Wlodek M.E., **Conrad K.P.**, and Parry L.J. Relaxin mediates uterine artery compliance during pregnancy and increases uterine blood flow. **FASEB J.** 26:4035-44, 2012.
30. **Conrad K.P.** and Karumanchi S.A. Renal Physiology and Disease in Pregnancy. In: **Seldin and Giebisch's The Kidney. Physiology and Pathophysiology: Fifth Edition.** R.J. Alpern, M.J. Caplan, O.W. Moe eds. Academic Press, San Diego. 2689-2761, 2013.
31. Jelinic M., Leo C.H., Post Uiterweer E.D., Sandow S.L., Gooi J.H., Wlodek M.E., **Conrad K.P.**, Parkington H., Tare M., and Parry L.J. Localization of relaxin receptors in arteries and veins, and region-specific

increases in compliance and bradykinin-mediated relaxation after *in vivo* relaxin treatment. **FASEB J.**, 2013 Sep 13. [Epub ahead of print].

32. **Conrad KP** and Davison JM. The renal circulation in normal pregnancy and preeclampsia. **Am J Physiol. Renal Fluid and Electrolyte Physiol.** 306: F1121-35, 2014 (***Invited Review***).
33. **Conrad K.P.**, Gaber L.W., and Lindheimer M.D. The Kidney in Normal Pregnancy and Preeclampsia. In: **Chesley's Hypertensive Disorders in Pregnancy: Fourth Edition.** Robert N. Taylor, James M. Roberts, F. Gary Cunningham, and Marshall D. Lindheimer (eds.). Elsevier. In press.

C. Research Support

Active Research Support:

PO1 HD065647-03 07/01/11-02/28/17
Corpus Luteal Contribution to Maternal Pregnancy (with mid-project extension)
Physiology and Outcomes in Assisted Reproductive Technologies.
Role: Program Director

University of Florida College of Medicine Matching Funds 07/01/11-06/30/16
Corpus Luteal Contribution to Maternal Pregnancy
Physiology and Outcomes in Assisted Reproductive Technologies.
Role: Program Director

James and Esther King Biomedical Research Program 07/01/13-12/31/14 (NCE)
Florida Department of Health #3KF01
Vascular effects of relaxin receptor agonists. Role: Co-I

Novartis CRLX030AUSNC06T 05/15/14-05/14/16
Unveiling Novel Signaling Mechanisms of Serelaxin in Vasculature
Role: PI

University of Florida College of Medicine Matching Bridge Funds 07/01/14-06/30/15
Endometrial Antecedents of Preeclampsia. Role: PI

Recent Completed Research Support:

R21 HL093605 07/01/09-06/30/13 (with NCE)
Mechanisms of vasodilation by relaxin
To investigate (i) the role of the Lgr7 receptor in relaxin vasodilation, (ii) its vascular location of functional significance, and (iii) the molecular mechanisms of relaxin vasodilation in isolated mouse arteries and in conscious mice. Role: PI

RO1 HL067937-09 09/01/06-03/31/12 (with NCE)
Endogenous Relaxin Regulates Vascular Function in Nonpregnant Females and Males
To investigate whether the relaxin hormone-relaxin receptor family is expressed by arteries and modulates their behavior. Role: PI

American Heart Association 07/01/08-06/30/11 (with NCE)
Grant-in-Aid 0855090E
Role of Angiogenic Growth Factors in the Relaxin Vasodilatory Pathway
Role: PI

RO1 DK63321-16 08/01/02 - 03/31/08 (with NCE)
Mechanisms of Vasodilation in Pregnancy. Role: PI

