

**BIOGRAPHICAL SKETCH**

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NAME Maric, Christine		POSITION TITLE Assistant Professor	
eRA COMMONS USER NAME CMARIC			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Melbourne, Australia	BSc	1990-1993	Anatomy/Physiology
University of Melbourne, Australia	BSc	1994	Renal Development
University of Melbourne, Australia	PhD	1994-1997	Renal Physiology
University College London, UK	Post-doc	1998	Renal Development
University of Melbourne, Australia	Post-doc	1998-2001	Renal Physiology

**A. Positions and Honors.****Positions and Employment**

1995-1998	Tutor and demonstrator in histology, physiology and embryology, Department of Anatomy and Cell Biology, University of Melbourne, Australia
1997	Research assistant, Department of Anatomy and Cell Biology, University of Melbourne, Australia; Senior resident Tutor in Medical Sciences, Ormond College, Melbourne, Australia
1997-1998	Research Fellow, Great Ormond Street Children's Hospital, University College London, UK
1998-2001	Research Officer, Department of Anatomy and Cell Biology, University of Melbourne, Australia
Oct 01-Oct 03	Assistant Professor (Research track), Division of Nephrology and Hypertension, Georgetown University Medical Center, Washington, DC
Oct 03-Jan 05	Assistant Professor (Tenure track), Department of Medicine (Division of Nephrology and Hypertension) and Physiology and Biophysics, Georgetown University Medical Center, Washington, DC
Jan 05-present	Assistant Professor (Tenure track), Department of Medicine (Division of Endocrinology and Metabolism) and Physiology and Biophysics, Georgetown University Medical Center, Washington, DC
Oct 03-present	Director, Diabetes Research, Center for the Study of Sex Differences: in Health, Aging and Disease, Georgetown University Medical Center, Washington, DC

**Other experience and Professional Memberships**

1994-1997	Australian Physiological and Pharmacological Society
1996-2001	High Blood Pressure Research Council of Australia
2000-present	American Society of Nephrology
2000-present	Women in Nephrology
2000-present	American Heart Association (Council on Kidney in Cardiovascular disease)
2000-present	American Physiological Society
2001-present	Society for Experimental Biology and Medicine
2001-present	Association of Women in Science
2001-2003	Women In Nephrology Program Committee
2002-2003	Chair, Society for Experimental Biology and Medicine Greater Baltimore Washington Graduate Student Forum, (Washington, DC)
2002	Co-Chair, Symposium on "Obesity and renal disease", National Kidney Foundation Clinical Nephrology Meeting (Chicago, IL)
2003	International Society of Nephrology 2003-present
2003	American Diabetes Association 2003-present

2002-present Board Member, Association for Women in Science, Bethesda Chapter  
 2003-2006 Treasurer, Women in Nephrology  
 2003-2004 President, Society for Experimental Biology and Medicine (DC Chapter)  
 2004 European Diabetic Nephropathy Study Group

**Honors**

1994 Special departmental postgraduate research studentship  
 1995 Mabel Kent Scholarship; Student travel grant from the Australian Physiological and Pharmacological Society  
 1996-1997 Melbourne University Postgraduate Scholarship  
 1996 National Heart Foundation Travel Award; International Society of Hypertension Travel Award; Astra Young Investigator Award at the 18th Annual Scientific Meeting of the High Blood Pressure Research Council of Australia  
 1998 Foundation for High Blood Pressure Research Young Investigator Travel Award  
 1999 National Heart Foundation Travel Award  
 2000 Human Frontier Science Program (Short-term Fellowship); National Heart Foundation Travel Award; Ian Potter Foundation Travel Award  
 2001 Foundation for High Blood Pressure Research Travel Award  
 2002 American Physiological Society (Renal section) Young Investigator Award; American Heart Association Fellow  
 2003 American Society of Nephrology Travel Award  
 2004 American Physiological Society New Investigator Award; American Heart Association, Kidney Council Young Investigator Travel Award; Arthur Guyton New Investigator Award from the COSEHC; FASEB Travel award; American Society of Nephrology Fellow.  
 2005 M. Irene Ferrer Award (Partnership for Gender-specific Medicine)

**B. Selected peer-review publications (in chronological order).**

1. **Maric C**, Aldred GP, Antoine AM, Dean RG, Eitle E, Mendelsohn FAO, Williams DA, Harris PJ, Alcorn D. Effects of angiotensin II on cultured rat renomedullary interstitial cells are mediated by AT<sub>1A</sub> receptors. *Am J Physiol* 1996; 271: F1020-F1028.
2. Alcorn D, McCausland JE, **Maric C**. Angiotensin receptors and development-the kidney. *Clin Exp Pharmacol Physiol* 1996; Suppl.3: S88-S92.
3. **Maric C**, Ryan GB, Alcorn D. Embryonic and postnatal development of the rat renal interstitium. *Anat Embryol* 1997; 195: 503-514.
4. **Maric C**, Aldred GP, Harris PJ, Alcorn D. Angiotensin II inhibits growth of cultured embryonic renomedullary interstitial cells through the AT<sub>2</sub> receptor. *Kidney Int* 1998; 53: 92-99.
5. Zhuo J, Dean RG, **Maric C**, Aldred GP, Harris PJ, Alcorn D, Mendelsohn FAO. Localization and interactions of vasoactive peptide receptors in renomedullary interstitial cells of the kidney. *Kidney Int* 1998; 54(Suppl 67): S22- S28.
6. Dean RG, **Maric C**, Aldred GP, Casley D, Zhuo J, Harris PJ, Alcorn D, Mendelsohn FAO. Rat renomedullary interstitial cells possess bradykinin B<sub>2</sub> receptors *in vivo* and *in vitro*. *Clin Exp Pharmacol Physiol* 1999; 26: 48-55.
7. Hansell P, **Maric C**, Alcorn D, Göransson V, Johnsson C, Hällgren R. Renomedullary interstitial cells regulate hyaluronan turnover depending on growth media osmolality suggesting a role in renal water handling. *Acta Physiol Scand* 1999; 165: 115-11.
8. **Maric C**, Aldred GP, Antoine AM, Dean RG, Williams DA, Harris PJ, Alcorn D. Actions of ET-1 on cultured rat renomedullary interstitial cells are modulated by nitric oxide. *Clin Exp Pharmacol Physiol* 1999; 26: 392-398.
9. **Maric C**, Casley D, Harris PJ, Alcorn D. Angiotensin II binding to renomedullary interstitial cells is regulated by osmolality. *J Am Soc Nephrol* 2001; 12: 450-455.
10. Göransson V, Hansell P, Moss S, Alcorn D, Johnsson C, Hällgren R, **Maric C**. Renomedullary interstitial cells in culture: the osmolality and oxygen tension influence the extracellular amounts of hyaluronan and cellular expression of CD44. *Matrix Biology* 2001; 20: 137-146.

11. **Maric C**, Harris PJ, Alcorn D. Mean arterial pressure predicts degranulation of renomedullary interstitial cells. *Clin Exp Pharmacol Physiol* 2002; 12: 1055-1059.
12. Santos RA, Simoes E Silva AC, **Maric C**, Silva DM, Machado RP, De Buhr I, Heringer-Walther S, Pinheiro SV, Lopes MT, Bader M, Mendes EP, Lemos VS, Campagnole-Santos MJ, Schultheiss HP, Speth R, Walther T. Angiotensin-(1-7) is an endogenous ligand for the G protein-coupled receptor Mas. *Proc Natl Acad Sci U S A*. 2003; 100: 8258-8263.
13. Wu Z, **Maric C**, Zheng W, Sandberg K. Estrogen regulates adrenal angiotensin AT<sub>1</sub> receptors by modulating AT<sub>1</sub> receptor translation. *Endocrinology* 2003; 144: 3251-3261.
14. **Maric C**, Sandberg K, Hinojosa-Laborde C. Glomerulosclerosis and tubulointerstitial fibrosis are attenuated with 17 $\beta$ -estradiol in the aging Dahl salt sensitive rat. *J Am Soc Nephrol* 2004; 15: 1546-1556.
15. Dey A, **Maric C**, Stewart J, Pollock JS, Imig JD. Altered vascular arachidonic acid enzymes are associated with renal injury in obese rats. *Clinical Sci (Lond)* 2004; 107: 561-570.
16. Mankhey RW, Bhatti F, **Maric C**. 17- $\beta$  estradiol replacement improves renal function and pathology associated with diabetic nephropathy. *Am J Physiol-Renal Physiol* 2005; 288: 399-400.
17. Bhatti F, Mankhey RW, Asico L, Quinn MT, Welch W, **Maric C**. Mechanisms of antioxidant and pro-oxidant effects of  $\alpha$ -Lipoic acid in the diabetic and non-diabetic kidney. *Kidney Int* 2005; 67: 1371-1380.
18. **Maric C**. Gender differences in cardiovascular disease and hypertension: involvement of the renin-angiotensin system. *Hypertension* 2005; 46: 475-476.
19. Lee S, Wu Z, Yoo S-E, Sandberg K, **Maric C**. Posttranscriptional mechanisms contribute to osmotic regulation of angiotensin type 1 receptors in cultured rat renomedullary interstitial cells. *AJP-Regul, Integr Comp Phys* doi:10.1152/ajpregu.00476.2005.
20. Wells CC, Riaz S, Mankhey RW, Bhatti F, Ecelbarger C, **Maric C**. Diabetic nephropathy is associated with decreased circulating estradiol levels and imbalance in the expression of renal estrogen receptors. *Gender Medicine* (in press, accepted 07/25/05).
21. Riaz S, **Maric C**, Ecelbarger C. 17- $\beta$  estradiol replacement to ovariectomized female rats attenuates streptozotocin-induced diabetes mellitus and preserves renal sodium reabsorptive capacity via regulation of sodium transporter and channel subunits. *Kidney Int* (in press, accepted 09/15/05).
22. **Maric C**, Zheng W, Walther T. Interactions between angiotensin II and atrial natriuretic peptide in renomedullary interstitial cells: role of neutral endopeptidase. *Nephron Physiol*. (in press, accepted 09/28/05).

### C. Research Support.

#### Ongoing Research Support

Research Award 07/01/03-06/30/06

American Diabetes Association

Role of estrogen in diabetic nephropathy

The aim of this study is to examine the effects of estrogen on the pathogenesis of end organ complications associated with diabetes.

Role: PI

RO3 NIH (NIA) 10/01/03-09/30/05

Role of estrogen in the pathogenesis of tubulointerstitial disease in aging

The aim of this study is to examine the interactions between the nitric oxide and angiotensin in the pathophysiology of age-related renal disease.

Role: PI

International Collaborative Research Award 06/01/04-05/31/06

Georgetown University

Association between the Y chromosome and androgens in human kidney disease

The aim of this study is to examine the association between polymorphisms in the Y chromosome linked to hypertension and the degree of progression of renal failure in humans.

Role: PI

FIRCA 01/01/05-12/31/07  
 NIH Sandberg (PI)  
 Association between the Y chromosome and androgens in human renal disease  
 The aim of this study is to determine the association between polymorphisms in the non-recombining region of the Y chromosome with androgen levels and renal pathology in humans.  
 Role: Co-PI

RO1 07/01/03-06/30/08  
 NIH (NIDDK) Mulroneu (PI)  
 Hormonal regulation of estrogen and angiotensin receptors in the normal and diabetic kidney  
 The aim of this study is to examine the interaction between sex hormones and the renin-angiotensin system in regulating renal function under both physiological and pathophysiological conditions such as diabetes.  
 Role: Co-PI

**Completed Research Support**

Carl W. Gottschalk Award 07/01/03-06/30/05  
 American Society of Nephrology  
 Role of estrogen in diabetic renal disease  
 The aim of this study is to examine the renoprotective effects of estrogen replacement on diabetic nephropathy, with specific emphasis on the mechanisms on the regulation of ECM metabolism.  
 Role: PI

Grant-in-aid 01/01/04-31/12/04  
 National Kidney Foundation (Capital area)  
 Antioxidant effects of  $\alpha$ -lipoic acid in the treatment of diabetic nephropathy  
 The goal of this study is to examine the antioxidant properties of alpha lipoic acid in preventing the decline in renal function and pathology associated with diabetic nephropathy.  
 Role: PI

RO3 10/01/03-09/30/04  
 NIH (NIA)  
 Role of estrogen in the pathogenesis of tubulointerstitial disease in aging  
 The aim of this study is to examine the interactions between the nitric oxide and angiotensin in the pathophysiology of age-related renal disease.  
 Role: PI

Research Award 07/01/03-06/30/04  
 American Federation of Aging Research  
 The renin-angiotensin system in the pathogenesis of age-related progressive renal disease  
 The aim of this study is to examine the effects of angiotensin receptor blockade in an animal model of aging and hypertension  
 Role: PI

Grant-in-aid 07/01/02-06/30/03  
 National Kidney Foundation  
 Role of neutral endopeptidase in the pathogenesis of diabetic nephropathy  
 The role of this study was to examine the cellular mechanisms by which neutral endopeptidase and angiotensin II interact in cell proliferation and extracellular matrix synthesis, the two major cellular processes that are adversely affected in diabetic renal disease.  
 Role: PI