

CURRICULUM VITAE

Dr. Norman Rosenblum, MD
Senior Scientist, Developmental & Stem Cell Biology
Nephrologist, Department of Pediatrics
The Hospital for Sick Children
Professor of Paediatrics, Physiology and Laboratory Medicine and Pathobiology
University of Toronto

EDUCATION

Degrees

1988	Diplomate (Pediatric Nephrology), American Board of Pediatrics
1986	Diplomate (Pediatrics), American Board of Pediatrics
1985	Fellow (Pediatrics), Royal College of Physicians and Surgeons (Canada)
1980	M.D., cum laude, Dalhousie University, Halifax, Nova Scotia
1976	B.Sc., cum laude, Dalhousie University, Halifax, Nova Scotia

Clinical Training

1985 – 1986	Clinical Fellow, Division of Nephrology, Children's Hospital, Boston, MA
1984 – 1985	Chief Resident in Pediatrics, Children's Hospital, Boston, MA
1981 – 1984	Resident in Pediatrics, Children's Hospital, Boston, MA
1980 – 1981	Intern in Internal Medicine, Dalhousie University, Halifax NS, Canada

Research Training

1986 – 1991	Research Fellow, Department of Anatomy and Cellular Biology Harvard Medical School, Boston, MA Supervisor: Bjorn Olsen Supported by a MRC Fellowship and a NIH Physician Scientist Award
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EMPLOYMENT

Hospital Appointments

2001 – Present	Senior Scientist, Developmental & Stem Cell Biology Program, The Hospital for Sick Children, Toronto, ON, Canada
1995 – Present	Nephrologist, Department of Nephrology, The Hospital for Sick Children, Toronto, ON, Canada

Academic Appointments

2009 – Present	Associate Dean, Physician Scientist Training, Faculty of Medicine, University of Toronto. Toronto, ON, Canada
2008 – Present	Associate Director, Education, McLaughlin Centre, University of Toronto
2005 – Present	Professor of Paediatrics, University of Toronto. Toronto, ON, Canada
2003 – Present	Cross-appointment with Department of Laboratory Medicine and Pathobiology, University of Toronto. Toronto, ON, Canada

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- 2000 – Present Member, University of Toronto Collaborative Program in Developmental Biology. Toronto, ON, Canada
- 1999 – Present Cross-appointment to Department of Physiology, The University of Toronto, Toronto, ON, Canada
- 1999 – Present Full Member, School of Graduate Studies, University of Toronto. Toronto, ON, Canada

Previous Appointments

- 1993-1995 Associate in Pediatrics, The Hospital for Sick Children. Toronto, ON, Canada.
- 1994-2001 Scientist, The Research Institute, The Hospital for Sick Children. Toronto, ON, Canada
- 1988-1992 Service Chief, Clinical Research Center, Children's Hospital, Boston, MA
- 1988-1993 Assistant in Medicine, Children's Hospital, Boston, MA
- 2010 Acting Vice-Dean, Undergraduate Medical Education, Faculty of Medicine (July 1-Dec 31, 2010), University of Toronto. Toronto, ON, Canada
- 2008-2009 Director, Clinician Scientist Training Programs, Faculty of Medicine, University of Toronto. Toronto, ON, Canada.
- 2001-2008 Associate Chair of Paediatrics (Research), The Hospital for Sick Children. Toronto, ON, Canada
- 2006-2007 Acting Head, Division of Nephrology, Department of Paediatrics, The Hospital for Sick Children. Toronto, ON, Canada
- 1999-2005 Associate Professor of Pediatrics, University of Toronto. Toronto, ON, Canada
- 1993-1999 Assistant Professor of Pediatrics, University of Toronto. Toronto, ON, Canada
- 1995-1999 Associate Member, School of Graduate Studies, University of Toronto. Toronto, ON, Canada
- 1988-1993 Instructor of Pediatrics, Harvard Medical School (Lecturer position). Boston, MA

HONORS AND AWARDS

- 2015 Physician Research Award for Careers Excellence, Department of Paediatrics, University of Toronto
- 2011 Inaugural Visiting Professor, Center for Molecular and Cellular Intervention (CMCI) and Department of Pediatrics, University of Utrecht
- 2011 Medal for Research Excellence, Kidney Foundation of Canada
- 2010 Maureen Andrew Mentor Awards, Society for Pediatric Research
- 2009 Paediatric Academic Leadership-Clinical Investigator Awards, Paediatric Chairs of Canada
- 2008 Schwartz-Reisman Visiting Scholar, Tel Aviv University
- 2006 Inaugural Norman J Siegel New Member Outstanding Science Award, American Pediatric Society
- 2005 Canada Research Chair in Developmental Nephrology (Tier 1)
- 2004 Aventis Pasteur Award for Excellence in Research, Canadian Paediatric Society
- 2001

RESEARCH GRANTS

Current Peer-Reviewed Grants

Jul 2016 – Mar 2024	Principle Investigator. Investigating the contribution of stroma to kidney health and disease Canadian Institutes of Health Research
Jul 2016 – Jun 2018	Principle Investigator. Control of Renal Branching Morphogenesis by Missense Mutations in Human Integrin Linked Kinase Kidney Foundation of Canada
Jun 2005 – Mar 2023	Principle Investigator. Canada Research Chair in Development Nephrology (Tier 1) Canada Research Chairs Programs
Sep 2015 – Aug 2021	Principle Investigator. University of Toronto MD/PhD Programs Canadian Institutes of Health Research

Previously Awarded

University of Toronto

l'Anson Professorship (salary support plus \$20,000 operating funds first year)	1994-1999	\$55,000/yr
Molecular Genetics of Early Renal Development	1993	\$ 4500
Molecular Genetics of Early Renal Development	1993	\$10,000

Pediatric Consultants, Department of Pediatrics, University of Toronto

Control of Renal Branching Morphogenesis: Principal Investigator	1995-1996	\$ 4750
Control of Renal Branching Morphogenesis: Cellular Mechanisms Principal Investigator	1997-1998	\$ 5000

The Hospital for Sick Children

Epigenetic changes in urothelium following E. coli infection – new keys to understanding urinary tract infection susceptibility Co-Principal Investigator (PI – Darius Baglii)	2007-2008	\$50,000
Control of Renal Branching Morphogenesis	1996-1998	\$45,000/yr
Shared Equipment (with Drs T. Yager, Robert Phillips, Sean Egan, Michelle Letarte, Brenda Gallie, Howard Lipshitz, Liliana Attisano) Collaborator	1996	\$ 9737
Pathobiology of the Renal Dysplasia-Obstructive Uropathy Complex Principal Investigator	1998-1999	\$ 18,970

Medical Research Council of Canada

Control of Renal Branching Morphogenesis: Cellular Events and Molecular Mechanisms
Principal Investigator 1997-2000 \$60,733/yr

Canadian Institutes of Health Research

Functions of Hedgehog-GLI-dependent signaling in stromal cells during normal and malformed mammalian kidney development
Principal Investigator 2013-2016 \$180,000/yr

Control of cerebellum cell specification, migration and organization by SUFU
Principal Investigator 2011-2016 \$146,824/yr

Control of kidney morphogenesis by sonic hedgehog and its signaling effectors
Principal Investigator 2006-2009 \$134,419/yr

Control of kidney cell determination and morphogenesis by BMPs and beta-catenin
Principal Investigator 2008-2013 \$155,828/yr

Control of Branching Morphogenesis in the Normal And Dysplastic Kidney
Principal Investigator 2003-2008 \$147,000/yr

Control of Renal Branching Morphogenesis: Cellular Events and Molecular Mechanisms
Principal Investigator 2000-2003 \$93,970/yr

Canadian Child Health Clinician Scientist Program – a STIHR Program
Principal Investigator 2002-2012 \$300,000/yr
I resigned as PI of this program in 2012 after 11 years of leading the program.

Canada Foundation for Innovation

Infrastructure Grant
Principal Investigator 2005 \$737,732

Canada Research Chairs Program

Canada Research Chair in Developmental Nephrology (Tier I) 2005-2012 \$200,000/yr

Kidney Foundation of Canada

Development of Urinary Pacemaker Cells: Cellular and Molecular Mechanisms
Principal Investigator 2014-2016 \$50,000/yr

Control of renal branching morphogenesis by Hedgehog-GLI3 signaling
Principal Investigator 2012-2014 \$50,000/yr

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Dysregulated hedgehog signaling and the pathogenesis of nonobstructive hydronephrosis. Principal Investigator	2010-2012	\$50,000/yr
Role of the Primary Cilium in Nephrogenesis Principal Investigator	2008-2010	\$50,000/yr
Control of murine kidney development by beta-catenin Principal Investigator	2006-2008	\$50,000/yr
Smad-beta-catenin interactions in cystic kidney disease Principal Investigator	2004-2006	\$50,000/yr
The BMP/GPC3 signaling pathway: Function during normal and dysplastic renal development – Principal Investigator	2002-2004	\$50,000/yr
Control of Renal Collecting System Morphogenesis by Glypican-3 Principal Investigator	1999-2001	\$40,000/yr
Control of Renal Branching Morphogenesis by BMP-2 and BMP-7. (\$40,000 granted but only \$9,900 funded due to overlap with MRC grant. Principal Investigator	1997-1998	\$9,900
Alpha 1(VIII) Collagen - Heparan Sulfate Interactions	1994-1996	\$40,000/yr
Scholarship, Alpha 1(VIII) Collagen - Heparan Sulfate Interactions Principal Investigator	1994-1996	\$45,000/yr
Liam's Light Foundation		
Beta-catenin signaling in polycystic kidney and liver disease Principal Investigator	2003-2005	\$65,000/yr
Translational Studies of the Liver Disease in Autosomal Recessive Polycystic Kidney Disease Co-Principal Investigator	2011-2013	\$190,000 total
National Institutes of Health (USA)		
Individual Physician-Scientist Award - Molecular Biology of Mesangial Matrix in Health/Disease	1989-1993	\$88,000/yr
Physician Services Incorporated		
Neonatal Renal Venous Thrombosis: Investigation of Causation and Prognosis Co-Investigator	2000-2001	\$31,000

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The Hospital for Sick Children Foundation

Canadian Paediatric Clinician Scientist Program
Principal Investigator

2002-2012 \$300,000/yr

B.C. Research Institute for Children's and Women's Health

Canadian Paediatric Clinician Scientist Program
Principal Investigator

2002-2012 \$150,000/yr

Women's and Children's Health Research Institute

Canadian Paediatric Clinician Scientist Program
Principal Investigator

2008-2012 \$35,000/yr

Manitoba Institute of Child Health

Canadian Paediatric Clinician Scientist Program
Principal Investigator

20018-2012 \$50,000/yr

PUBLICATIONS

Please see "Publications" Tab

BOOK CHAPTERS

1. Ninomiya Y, Castagnola P, Gerecke D, Gordon M, Jacenko D, LuValle P, McCarthy M, Uragaki Y, Nishimura I, Oh S, **Rosenblum N**, Sato N, Sugrue S, Taylor R, Vasios G, Yamaguchi N, Olsen BR. 1989. The molecular biology of collagens with short triple-helical domains. In: Collagen Genes: Structure, Regulation and Abnormalities. Eds: Sandell L, Boyd C, Academic Press 1990.
2. **Rosenblum ND**, Ingelfinger JR. End Stage Renal Disease and Hypertension. In: Pediatric Hypertension. Eds: Loggie J, Blackwell 1991.
3. **Rosenblum ND**. Fluids and Electrolytes. In: Manual of Pediatric Therapeutics. Eds: Graef JW. Little, Brown and Co., 1994.
4. **Rosenblum ND**. The Nephrotic Syndrome. In: Current Pediatric Therapy 15. Eds: Burg FD, JR Ingelfinger, ER Wald and RA Polin, WB Saunders Company, 1995.
5. Hafler J and **Rosenblum ND**. Teaching and Learning in a Small Group Setting. In: Harvard Medical School Pediatric Faculty Development Handbook, E Armstrong and FH Lovejoy, eds., Harvard University Press, 1995.
6. **Rosenblum ND** and Balfe JW. Nutrition and Metabolism. In: Pediatric Nephrology, 4th Edition. Eds: Harmon WE, Avner E, Williams and Wilkins, 1997.
7. **Rosenblum ND**. Structure and development of the kidney. In: Clinical Pediatric Nephrology, 2nd Edition. Eds: Kher K, Makker SP, Schnaper W, Informa Healthcare, Oxon, UK, 2006. p. 3-14. *Principal Author*

8. Waters, AM, Rosenblum, ND. Renal ectopic and fusion anomalies. In: UpToDate, Rose, BD (Ed), UpToDate, Waltham, MA 2006. This chapter is updated yearly. *Senior Responsible Author*
9. Waters, AM, Rosenblum, ND. Overview of congenital anomalies of the kidney and urinary tract (CAKUT). In: UpToDate, Rose, BD (Ed), UpToDate, Waltham, MA 2006. This chapter is updated yearly. *Senior Responsible Author*
10. Waters AM, Rosenblum, ND. Evaluation of congenital anomalies of the kidney and urinary tract (CAKUT). In: UpToDate, Rose, BD (Ed), UpToDate, Waltham, MA 2006. This chapter is updated yearly. *Senior Responsible Author*
11. **Rosenblum ND**, Salomon R. Disorders of Kidney Formation. In: Pediatric Nephrology, Geary D and Schaefer, F (Eds), Elsevier, 2008, p. 131-141. *Senior Responsible Author*
12. **Rosenblum ND**. Renal Malformation. In: Rudolph's Textbook of Pediatrics, 22nd Edition, CD Rudolph, Ed., McGraw Hill, New York, 2011, p. 1669-1671. *Senior Responsible Author*
13. **Rosenblum ND**. Congenital Renal Malformation. In: Pediatric Nephrology: A Handbook for Training Health Care Providers, Silverstein DM, Symons JM and Alon US (Eds), p. 209-234. *Senior Responsible Author*
14. **Rosenblum ND**. Malformation of the Kidney: Structural and Functional Consequences. In: Brenner and Rector's The Kidney, 9th Edition, Brenner BM, Chertow G, Marsden P, Skorecki K, Taal M, Yu ASL (Eds), p. 2558-2571. *Senior Responsible Author*
15. **Rosenblum ND**. Kidney Development. In: Primer on Kidney Diseases, 6th Edition, Gilbert S, Weiner DE, Gipson DS, Perazella MA (Eds), p. 19-25. *Senior Responsible Author*
16. **Rosenblum ND**. Structure and development of the kidney. In: Clinical Pediatric Nephrology, 3rd Edition. Eds: Kher K, Makker SP, Schnaper W, Informa Healthcare, Oxon, UK. In press. *Senior Responsible Author*
17. **Rosenblum ND**, Gupta IR. Disorders of Kidney Formation. In: Pediatric Nephrology, Geary D and Schaefer, F (Eds), 2nd Edition, Elsevier, 2016. In Press. *Senior Responsible Author*
18. **Rosenblum ND**. Malformation of the Kidney: Structural and Functional Consequences. In: Brenner and Rector's The Kidney, 10th Edition, Brenner BM, Chertow G, Marsden P, Skorecki K, Taal M, Yu ASL (Eds), 2015 *Senior Responsible Author*
19. **Rosenblum ND**. Congenital Anomalies of the Kidney and Urinary Tract: An Overview. In: Congenital Anomalies of the Kidney and Urinary Tract: Clinical Implications in Children, Barakat A, Rushton HG, Eds. In Press.
20. Blake J and Rosenblum ND. Renal Branching Morphogenesis. In: Kidney Transplantation, Bioengineering and Regeneration, Orlando G, Remuzzi G, Williams DF (Eds), Associated Press, NY, USA, In Press.
21. Rowan CJ, Sheybani-Deloui S, and Rosenblum ND. Origin and Function of the Renal Stroma in Health and Disease. In: Kidney Development and Disease, Miller RK (Ed), In Press.
22. **Rosenblum ND**. Renal Malformation. In: Rudolph's Textbook of Pediatrics, 23rd Edition, M Kline, Ed.,

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McGraw Hill, New York, In Press. *Senior Responsible Author*