CURRICULUM VITAE

Sumant S. Chugh, MBBS, MD, FASN

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Personal information

Citizenship: United States

Foreign Languages: Punjabi, Hindi

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Faculty Appointments

October 2011 – June 2016: Professor of Medicine, University of Alabama at Birmingham.

September 2007 to July 2014: Associate Director for Research, Nephrology Fellowship Program, University of Alabama at Birmingham.

September 2007 – September 2011: Associate Professor of Medicine, University of Alabama at Birmingham.

September 2000 – August 2007: Assistant Professor of Medicine, Northwestern University, Feinberg School of Medicine.

2003 – 2007: Faculty Member, Graduate School, Northwestern University

July 1999 – August 2000: Instructor, Boston University Medical Center, Department of Medicine

Hospital Appointments

2007 – present: UAB Hospital, Birmingham AL

2000 – 2007: Northwestern Memorial Hospital, Chicago IL

2000 – 2003: VA Medical Center, Chicago IL

Education:

1983	St. John High School, Chandigarh		High School
1985	D.A.V. College, Chandigarh		Premedical
1985-1990	Christian Medical College, Ludhiana, India	Medical School	M.B.B.S.

Board certification

1991 ECFMG

1993 FLEX

1994 Internal Medicine (India)

1996 A.B.I.M Internal Medicine

1998 A.B.I.M. Nephrology (recertified 2008 - 2018)

Medical Licensure

1994-2000: Massachussetts
2000-2007: Illinois
2007-2016: Alabama
2016-present: Illinois

Postdoctoral training

July 1991- June 1994 Post-Graduate Institute, Chandigarh, India Int. Medicine Residency MD

July 1994- June 1996 Newton Wellesley Hospital, Newton MA Int. Medicine Residency

July 1996- June 1999 Nephrology Research Fellowship, Boston University Medical Center, Boston MA.
Preceptor: David J. Salant, MD Field of Research: Podocyte Biology

Honors/Awards/Distinctions

2012 Max Cooper Award for excellence in research

2012 Member, American Society of Clinical Investigation

2010 Best abstract Award, 8th International Podocyte Conference, Bristol, U.K.

2008 Elected to Southern Society of Clinical Investigation

2007 America's Top Physicians

2006 Visiting Professor, University of California, San Diego

2004 Faculty Recognition Award from President and Provost of Northwestern University

2004 Young Investigator Grant Award, National Kidney Foundation

2004 Invited Young Investigator Talk, 5th International Symposium on Podocyte Biology, Seatlle

2003 Visiting Professor, Albert Einstein College of Medicine / LIJMC, New York

2002 Carl W. Gottschalk Research Scholar Award, American Society of Nephrology

2000 Joseph Shankman Award, National Kidney Foundation of MA/RI/NH/VT (declined)

1998 Research Fellowship Award, National Kidney Foundation

1988 Merit Scholarship Award, Punjab University

1988 Dr. Kaz Kawata Award in Preventive Medicine, Punjab University

1987 Distinction in Forensic Medicine (*Ranked 1st*)

1986 Distinction in Physiology (*Ranked 1st*)

1986 Distinction in Biochemistry (*Ranked 1st*)

1985 Honors Degree in Premedical

1985 Ranked First in Premedical

Professional Society Membership

2012 Member, American Society of Clinical Investigation

2008 Member, Southern Society of Clinical Investigation

2006 Member, American Society of Biochemistry and Molecular Biology

2004 *Fellow* of the American Society of Nephrology

1996 Member, American Society of Nephrology

1996 Member, International Society of Nephrology

1996 Member, National Kidney Foundation

1996 Indian Society of Nephrology

1996 Asian Pacific Society of Nephrology

Committee Service

2002 - Member, Northwestern University Department of Medicine Committee for recruitment of Senior Investigator for Division of Nephrology.

2002-2007: Internal Medicine Residency recruitment interviews

2001-present: Nephrology Fellowship recruitment interviews

2001-present: New faculty recruitment interviews for Division of Nephrology

2003: Faculty candidate interviews for Division of Rheumatology

2003: Faculty candidate interviews for Department of Pediatrics, Childrens Hospital

2008-present: Associate Program Director for Research, UAB Nephrology Fellowship Program

2008 - 2010: PhD Thesis Committee, PhD candidate Junghyun Kim

2008 onwards: Coordinator, UAB Nephrology web site redesign

University activities: Clinical Service

Attending, Chronic / Access Service, UAB Hospital, 0.5 month / year, 2010 onwards

Outpatient Nephrology, Kirklin Clinic, 2 clinics / month, 2009 onwards

Attending,Ward Service, UAB hospital, one month / year, 2008 onwards

Attending on Consult Service at NMH: one block every year between 2001-2007

Attending on Consult Service at VA: one block every year between 2001-2003

Outpatient Nephrology Clinic at NMFF: two clinics/month between 2001-2007

Weekends on call at NMH: five weekends / year between 2001 and 2007

Editorial boards and Scientific Service

Guest Editor Seminars in Nephrology, November 2003 edition

Journal peer review

Nature journals: Nature Medicine, Nature Communications
Human Molecular Genetics
Journal of Clinical Investigation
Kidney International
Journal of the American Society of Nephrology
American Journal of Pathology
American Journal of Physiology

American Journal of Transplantation
Annals of Medicine
Clinical Immunology
Nephrology, Dialysis and Transplantation
Proteomics
Translational Research
Diabetic Medicine
Molecular Medicine
Physiological Genomics
JAMA

Contibutions to Opinion forums / blogs
June 22, 2011 – Spoonful of Medicine - blogger Elie Dolgin, News Editor, Nature Medicine

Grant review

2008 - Member, UAB PKD P30 pilot grant Study Section
2009 onwards - Member, NIH – CSR Special Emphasis Panels (PBKD conflicts - R01, R21)
2010 onwards – Ad Hoc Member, VA Nephrology Study Section
2011 onwards – Ad Hoc Member, External Referee Panel, Kidney Research UK
2011 onwards – Member, NIH/NIDDK Special Review Panels (R01)
October 2011 – Member, NIH – CSR PBKD Study Section
2012 onwards – Ad Hoc Member, Medical Research Council (MRC, UK) grant review panel
February 2013 - Member, NIH – CSR PBKD Study Section
February 2014 – Mail reviewer, NIH – CSR PBKD Study Section
March 2014 - Member, NIH – CSR Special Emphasis Panels, DKUS IRG
March 2014 – Member, NIH/NCATS review panel.
July 2014 – June 2018 – Standing Member, NIH – CSR PBKD Study Section.
October 2014 - Ad Hoc Member, NIDDK Special Emphasis Panel
November 2014 – Ad Hoc member, NIDDK intramural grant review panel.
February 2015 - Ad Hoc Member, NIDDK Special Emphasis Panel.
April 2016: Member, NIDDK Special Emphasis Panel for P30 grants.

Abstract review

Member, Abstract Review Committee, International Society of Nephrology Meeting, 2015
Member, Abstract Review Committee, American Society of Nephrology Meeting, 2011
Member, Abstract Review Committee, American Society of Nephrology Meeting, 2010
Judge, UAB DOM Trainee Research Symposium, March 2009
Member, Abstract Review Committee, American Society of Nephrology Meeting, 2008
Judge, UAB DOM Trainee Research Symposium, March 2008
Member, Abstract Review Committee, American Society of Nephrology Meeting, 2006

Program / Symposium Chairs
Chair, Session on Mouse Models of Glomerular Disease, ASN 2006
Chair, Research Program Committee, Chicago Nephrology Day, 2005
Chair, Symposium on Cell Cycle Proteins, ASN 2001

Major research interests

The Glomerular Disease Therapeutics Laboratory (GDTL) develops novel therapeutics for glomerular disease and chronic kidney disease related to glomerular disorders. Four major success stories over the past five years include the following:

(a) The first ever molecular basis of human Minimal Change Disease (Nature Medicine 2011). This study describes the role of sialylation-deficient Angiopoietin-like 4 in the development of this disease.

(b) The development of sialylation based therapeutics for Minimal Change Disease and Diabetic Nephropathy. US and worldwide patents have been filed, and this novel area of therapeutics is being actively pursued.

(c) The molecular link between proteinuria and hypertriglyceridemia was discovered (Nature Medicine 2014). These studies show the systemic response to proteinuria mediated by circulating Angiopoietin-like 4 reduces proteinuria and induces hypertriglyceridemia.

(d) Mutant forms of human Angiopoietin-like 4 have been developed and tested in animal models of proteinuria and chronic kidney disease. Patents were filed in the US and worldwide. The US patent and the Australian patent are on track for allowance / acceptance, and will be formally awarded in the next few months. Patents in other jurisdictions are under evaluation. We have recently signed a Material Evaluation Licensing Agreement with a major (big 10) pharmaceutical company. We anticipate signing a comprehensive licensing agreement for product development with this company in the next 3-4 months. Once fully licensed, this is the first ever novel therapeutic to be specifically developed for the treatment of glomerular disease and chronic kidney disease related to glomerular disease.

There are several additional therapeutics related projects currently ongoing at the GDTL that are summarized below:

1) Upstream regulation of podocyte disease by ZHX proteins. (Chugh and Clement)
2) Kidney independent mechanisms of edema in nephrotic syndrome, congestive heart failure and liver cirrhosis. (Chugh)
3) Mechanism based treatment of kidney fibrosis in a manner that is different from classic TGFβ related paradigms. (Chugh)
4) The mechanisms of renal vein thrombosis in nephrotic syndrome. (Chugh)
5) Novel mechanisms in Type 2 diabetes. (Chugh)
6) Novel mechanisms of hypercholesterolemia in nephrotic syndrome. (Clement)
7) Novel mechanisms in non-HIV collapsing glomerulopathy. (Macé)
8) Mechanisms of diabetic nephropathy. (Marshall)

Teaching experience

Organizer, weekly Renal Pathology Conference, 2010 onwards

Basic of renal histology and pathology – 5 lecture series, 2009 onwards

Fellows Curriculum – Primary Glomerular Disease – 2 lecture series, 2009 onwards

Introduction to Clinical Medicine I course, 2008 onwards

Scientific Basis of Medicine Lecture Series. “Nephritic Syndrome”. 2006

Lectures on “Overview of Glomerular Diseases” to medical students and residents, 6-8 lectures/year, 2000-2006

Fellows Curriculum Lectures on Glomerular Diseases 2/ year, 2001-2006

Small group sessions for 2nd year medical students, 6/year, 2000-2006

Small group sessions for 1st year medical students, 4/year, 2001-2006

Past Research Trainees and current institutions

Neelam Walia, PhD (Faculty member, Chicago Medical School, North Chicago IL)

Zan Gu, PhD

Navjeet K Hansra, MD (Radiology Resident, University of Illinois at Chicago)

Beenu Kaw, MD (Private practice)

Jayson Kurfis MS (Scientist, L'Oreal Research Division, Chicago IL)

Gang Liu MD, PhD (Director, Chief Scientist, Clinical Medicine Research Center, Guangdong Medical College, Guangdong, China; Formerly, Assistant Professor, Northwestern University)

Steven Cheng, MD (Assistant Professor, Washington University)

Duncan Johnstone, MD, PhD (Assistant Professor, University of Pennsylvania)

Albert Lam, MD (Instructor in Medicine, Brigham and Womens Hospital, Boston)

Dan Bergner, MD (Northwestern University)

Vijay Vidyasagar MD (Assistant Professor, University of Wisconsin, Madison, NKF Fellowship Award recipient)

Suresh Shastry PhD (University of Pittsburgh)

Guangxing Bai, PhD (University of Alabama at Birmingham)

Lionel Clement, PhD (Assistant Professor, Department of Medicine, University of Alabama at Birmingham)

Caroline Marshall MD (Assistant Professor, Department of Medicine, University of Alabama at Birmingham) – Primary mentor on VA CDA2

Camille Macé, PhD (Instructor in Medicine, University of Alabama at Birmingham, K01 Award applicant)

Manish Saha, MD (Nephrology Fellow, University of Alabama at Birmingham)

Current Research Trainees

Maria Del Nogal Avila, PhD

Hector Donoro Blazquez BE

Current K Award / VA CDA2 Award / AHA SDG mentees

Lionel Clement, PhD (Assistant Professor, Department of Medicine, University of Alabama at Birmingham) – Primary mentor on K01.

Caroline Marshall MD (Assistant Professor, Department of Medicine, University of Alabama at Birmingham) – Primary mentor on VA CDA2.

Camille Macé PhD (Instructor, Department of Medicine, University of Alabama at Birmingham) – Primary mentor on AHA-Scientist Development Grant.

Major lectures and visiting professorships

1. Medical Grand Rounds, *Loyola University Medical Center, Chi*cago, May 2016. “Soluble mediators of human nephrotic syndrome”.
2. Invited Speaker, Symposium on Lipids and Fatty Acids in Kidney Disease, *American Society of Nephrology Meeting*, *San Diego*, November 2015. “Hypertriglyceridemia in nephrotic syndrome”.
3. Invited Speaker, *Kansas City VA Medical Center, Kansas City*, May 2015. “Angiopoietin-like 4 in nephrotic syndrome”.
4. Invited Speaker, session on nephrotic syndrome. *ISN World Congress of Nephrology, Cape Town, South Africa*, March 2015. “Angiopoietin-like 4 in nephrotic syndrome”.
5. Visiting Professor, *University of Toronto, Toronto, Canada*, January 2015. “Angiopoietin-like 4 in nephrotic syndrome: Dr. Jekyll, Mr. Hyde and their mutant clones”
6. Invited Speaker, *Rush University Medical Center, Chicago*, December 2014. “Angiopoietin-like-4 in nephrotic syndrome: Dr. Jekyll, Mr. Hyde and their mutant clones”
7. Invited Speaker, translational session “From bench to bedside-Glomerular disease”, *German Renal Society Kongress für Nephrologie, Berlin, Germany*, September 2014. “Minimal Change Disease”.
8. Medical Grand Rounds, *University of Alabama at Birmingham, Birmingham*. July 2014. Nephrotic syndrome therapeutics: Dr. Jekyll, Mr. Hyde and their mutant clones.
9. Invited Speaker, *10th International Podocyte Conference, Freiburg, Germany*, June 2014. “Angptl4 in nephrotic syndrome. Dr. Jekyll, Mr. Hyde and their mutant clones”.
10. Invited Speaker, *University of Iowa*, Iowa City, April 2014. “Soluble mediators of human nephrotic syndrome”.
11. Invited Speaker, *University of Chicago*, Chicago, January 2014. “Soluble mediators of human nephrotic syndrome”.
12. Invited Speaker, Seminar on Collapsing Glomerulopathy, *American Society of Nephrology Meeting*, Atlanta, November 2013. “Human non-HIV collapsing glomerulopathy: role of circulating factors”.
13. Invited Speaker, *Baylor College of Medicine*, Houston, September 2013. “Molecular mechanisms in nephrotic syndrome”.
14. Invited Speaker, Seminar on Core Competencies in Kidney Research, *University of Alabama at Birmingham*, May 2013. “Developing novel therapeutics in nephrology: Basic principles”.
15. Invited Speaker, *University of Southern California*, Los Angeles, February 2013. “Molecular mechanisms in nephrotic syndrome”.
16. Invited speaker, *NRTC Seminar, UAB* Birmingham, June 2012. “Dispelling myths in nephrotic syndrome: the first link between proteinuria and hyperlipidemia is revealed”
17. Invited Speaker, Symposium on MCD/FSGS, *49th ERA-EDTA Congress, Paris, France*. May 2012. “Minimal Change Nephropathy: the search for molecular mediators”.
18. Invited Speaker, *9th International Podocyte Conference, Miami Beach*. April 2012. Session on New Pathways to Proteinuria.

19. Invited Speaker, *New York Society of Nephrology*, New York. April 2012. “Mechanisms and novel therapeutics in Minimal Change nephrotic syndrome”.
20. Invited Speaker, *LSU Health Sciences Center,* Shreveport. March 2012. “Angiopoietin-like-4 in nephrotic syndrome”.
21. Visiting Professor and Invited Speaker, *Postgraduate Institute*, Chandigarh, India. January 2012. “Pathogenesis of Minimal Change Disease”.
22. Invited Speaker, Session on cardiovascular diseases, Rat Genomics & Model's meeting, *Cold Spring Harbor Laboratory, New York*. December 2011. “Systemic effects of Angiopoietin-like-4 overexpression in rats”.
23. Invited Speaker, Symposium on Life of podocytes, *American Society of Nephrology Meeting, Philadelphia*. November 2011. “Angiopoietin-like 4”.
24. Invited Speaker, Renal Grand Rounds, *Albert Einstein College of Medicine / Montefiore Medical Center*, New York. September 2011. “Angiopoietin-like-4 in nephrotic syndrome”.
25. Guest Speaker, Research Seminar series, *Southern Research Institute*, Birmingham. August 2011. “Sialylation-based therapeutics for proteinuria and kidney disease”.
26. Medical Grand Rounds, *University of Alabama at Birmingham,* Birmingham. July 2011. An obituary for “Idiopathic” Minimal Change nephrotic syndrome.
27. Invited Speaker, *Brigham and Womens Hospital*, *Harvard Medical School,* Boston. June 2011. “Angiopoietin-like-4 in nephrotic syndrome”.
28. Invited Speaker, Symposium on Nephrotic Syndrome - New Insights, *International Society of Nephrology Meeting, Vancouver, Canada*. April 2011. “Angiopoietin-like 4: Potential role in Minimal Change Disease.”
29. Invited Speaker, *Mount Sinai School of Medicine*, New York. September 2010. “Podocyte secreted proteins in nephrotic syndrome”.
30. Visiting Professor and Speaker, *Postgraduate Institute*, Chandigarh, India. June 2010. “Minimal Change Disease”.
31. Invited Speaker, Colloquium in Molecular Medicine, *Universitätsklinikum der RWTH Aachen, Aachen, Germany*. June 2010. “Molecular mechanisms in human Minimal Change Disease”.
32. Speaker, 8th *International Podocyte Conference, Bristol U. K.* June 2010. “ Angiopoietin-like 4 in minimal change disease”
33. Speaker, *UAB-Vanderbilt retreat*, Chattanooga May 2010. “Minimal Change Disease”.
34. Guest Speaker – *UAB Birmingham* January 2010. “Molecular basis of minimal change disease”.
35. Invited Speaker, *Southern Salt, Water and Kidney Club*, Sarasota FL December 2009. “Molecular mechanisms in Minimal Change Disease”.
36. Speaker, *Vanderbilt - UAB retreat*, Chattanooga May 2009. “Molecular mechanisms of proteinuria”.
37. Invited Speaker, *Southern Salt, Water and Kidney Club*, Sarasota FL December 2008. “Molecular mechanisms of proteinuria”.

38. Invited Speaker, Symposium on mechanisms of proteinuria and the nephrotic syndrome, *American Society of Nephrology Meeting*, Philadelphia, November 2008. “Transcriptional regulation of podocyte disease”.
39. Internal Medicine Grand Rounds, *UAB-Montgomery Baptist Medical Center*, Montgomery AL, August 2008. “Understanding nephrotic syndrome: a peek into the future”.
40. Visiting Professor, *All India Institute of Medical Sciences*, New Delhi, India, February 2008. "Novel insights into the pathogenesis of primary glomerular disease”
41. Invited *Plenary Session Speaker, Indian Society of Nephrology Meeting*, New Delhi, December 2007. “ Molecular pathogenesis of human minimal change disease”.
42. Guest Speaker, *Postgraduate Institute*, Chandigarh, India , November 2007. “Recent developments in the investigation of primary glomerular disease”.
43. Invited Speaker, *P30 PKD group, University of Alabama*, Birmingham, October 2007. “Understanding primary glomerular disease: a fresh look, and a challenging new hypothesis”.
44. Guest Speaker, Division of Nephrology, *University of Alabama*, Birmingham, June 2007. "Transcriptional regulation of podocyte disease : the emerging role of ZHX proteins".
45. Invited Speaker, *Harvard Institutes of Medicine, Brigham and Womens Hospital*, Boston, May 2007. "Transcriptional regulation of podocyte disease : the emerging role of ZHX proteins".
46. Visiting Professor, *Instituto Nacional De Cardiologia,* Mexico City, February 2007. “Molecular basis of human minimal change disease”
47. *Internal Medicine Grand Rounds, Illinois Masonic Medical Center*, Chicago IL. October 2006. “Understanding proteinuria as a risk factor”.
48. Invited Speaker, Nephrology Research Seminar, *Loyola University Medical Center*, Maywood, IL. August 2006. “Transcriptional regulation of podocyte disease”.
49. Invited Speaker, *LIJMC-Albert Einstein College of Medicine*, New York, June 2006.”Transcriptional regulation in minimal change disease”.
50. Invited Speaker, *Central Society of Clinical Investigation Meeting*, Chicago, April 2006.” Newer insights into the pathogenesis of minimal change disease”
51. Visiting Professor, *Postgraduate Institute, Chandigarh*, India , March 2006. “Unlocking minimal change disease---finally !!!!”
52. Visiting Professor, U*niversity of California San Diego*, February 2006. “Molecular mechanisms of proteinuria.”
53. Invited Speaker, *University of Texas at Houston*, December 2005. “ Molecular mechanisms of proteinuria”.
54. Invited Speaker, *Baylor College of Medicine*, December 2005. “Molecular mechanisms of proteinuria”.
55. Invited Speaker, *IMIN meeting, Puerto Vallarta, Mexico* November 2005. “Molecular basis of Collapsing Glomerulopathy”
56. Invited Speaker, *Satellite Research Meeting, Washington, D.C*. May 2005. “A tale of two clones”

57. Invited Speaker, Nephrology Research Conference, *University of Texas Southwestern Medical School, Dallas, TX*, November 2004. “Molecular mechanisms of proteinuria”.
58. Invited Speaker, Nephrology Research Seminar, *Loyola University Medical Center*, Maywood, IL. September 2004. “Molecular mechanisms of proteinuria”.
59. Invited Young Investigator Talk, 5th International Symposium on Podocyte Biology, *Seatlle*, June 2004. “Soup du jour: Podocytes, slit diaphragms, and a touch of proteinuria”.
60. Invited Speaker, Nephrology Research Seminar, *University of Washington, Seatlle*, May 2004. “Molecular mechanisms of proteinuria”.
61. Invited Speaker, Nephrology Rounds, *Columbia University, New York*, April 2004. “Recent developments in the pathogenesis of proteinuria”.
62. Invited Speaker, Division of Nephrology, *Yale Medical School*, New Haven, April 2004. “Recent developments in the pathogenesis of proteinuria”.
63. Visiting Professor, Long Island Jewish Medical Center, *Albert Einstein College of Medicine, NY* December 2003. “Molecular mechanisms of proteinuria”
64. Guest Speaker, *New York Society of Nephrology*, New York, NY December 2003. “Recent developments in the pathogenesis of proteinuria”
65. Invited Speaker, Division of Nephrology, *Medical College of Wisconsin*, Milwaukee, September 2003. “Molecular mechanisms of proteinuria”
66. Satellite Research Meeting, *San Francisco*, August 2003. “Gene regulation of proteinuria”
67. International CME, Indian Society of Nephrology, *Postgraduate Institute, Chandiagarh*, India, March 2003. “Recent developments in slit diaphragm biology”
68. Invited Speaker, Department of Medicine, *Northwestern University*, Feinberg School of Medicine, Chicago, February 2003. “Critical role of slit diaphragm proteins in proteinuria”
69. Oral Free Communication, *American Society of Nephrology Meeting*, Philadelphia Nov 2002
70. Invited Speaker, *Loyola* University Medical Center, Maywood IL December 2002. “Podocyte injury and proteinuria”.
71. Invited Speaker, University of Chicago, Chicago, 2000. “Mechanisms of proteinuria”.
72. Invited Speaker, Northwestern University, Chicago, 2000. “Mechanisms of proteinuria”.
73. Invited Speaker, Medical College of Wisconsin, Milwaukee, 1999. “Recent developments in mechanisms of proteinuria”.

Grant support

1) NIH/NIDDK 1R01DK109713 (July 1 2016 to June 30 2021)

Principal Investigator	Sumant S. Chugh (30% effort)
Co-investigator	Lionel C. Clement (25% effort)
Title	ZHX2 in podocyte disease
Yearly direct costs	$400,000
Total direct costs	$2,000,000

Brief summary: Mechanisms by which the interaction of podocyte ZHX2 with transmembrane proteins controls upstream pathways during the development of human glomerular disease.

2) NIH/NIDDK 1R01DK111102 (September 1 2016 to August 31 2021)

Principal Investigator	Sumant S. Chugh (25% effort)
Co-investigator	Camille Macé (50% effort)
Co-investigator	Carmen Avila-Casado (5% effort)
Title	Investigation of non-HIV collapsing glomerulopathy
Yearly direct costs	$419,653
Total direct costs	$2,098,265

Brief summary: This study identifies nephritogenic circulating proteins that cause recurrent non-HIV collapsing glomerulopathy, and explores molecular mechanisms of podocyte proliferation, capillary loop collapse and in vivo crosstalk.

3) NIH 1R01DK101637-01 (March 10 2014 to January 31 2019)

Principal Investigator	Sumant S. Chugh (25% effort)
Title	Renal protective effects of circulating Angiopoietin-like-4
Yearly direct costs	$217,500
Total direct costs	$1,087,500

This proposal will explore how mutant forms of circulating human Angiopoietin-like-4 can be used to treat proteinuria and chronic kidney disease.

4) NIH/NIDDK 1R01DK090035 (September 1 2011 – August 31 2016)

Principal Investigator	Sumant S. Chugh (25% effort)
Title	Podocyte secreted proteins
Yearly direct costs	$217,500
Total direct costs	$1,120,000

The grant studies the role of hyposialylated forms of podocyte-secreted Angiopopoietin-like-4 in the development of human and experimental minimal change disease.

5) NIH/NIDDK K01DK096127-01 (July 1 2012 to June 30 2017)

Mentor	Sumant S. Chugh
Principal Investigator	Lionel C. Clement PhD
Title	Investigation of nephrotic syndrome
Yearly direct costs	$141,010
Total direct costs	$705,050

This proposal studies the pathogenesis of hypertriglyceridemia in nephrotic syndrome.

6) VA CDA-2 - 1 IK2 BX001942-01A1 (October 1 2013 to September 30 2018)

Mentor	Sumant S. Chugh
Principal Investigator	Caroline Marshall MD
Title	The role of APA in GBM thickening in diabetic nephropathy

This proposal will explore mechanisms of GBM thickening in diabetic nephropathy.

7) AHA Scientist Development Grant 16SDG27500017 (January 2016 to December 2019)

Mentor	Sumant S. Chugh
Principal Investigator	Camille Macé PhD
Title	Molecular mechanisms of non-HIV collapsing glomerulopathy
Yearly direct costs	$70,000
Total direct costs	$280,000

This proposal will conduct in vitro studies on mechanisms involved in collapsing glomerulopathy

Completed

1) NIH/NIDDK 5R01DK077073 (September 1 2007 to August 30 2013)
Principal Investigator Sumant S. Chugh (30% effort)
Title Transcriptional regulation of proteinuria
yearly direct costs $205,000
total direct costs $987,000
Brief summary: We cloned and characterized rat Zinc Fingers and Homeoboxes 3 (ZHX3), a recently discovered transcriptional factor, and are mapping its binding site in eukaryotic promoters. This proposal will study the biology of ZHX3 in experimental and human minimal change disease.

2) NIH/NIDDK R01 DK059600 (7/1/2008 – 6/30/2014)
Co-investigator Sumant S. Chugh (5% effort)
Principal Investigator Anupam Agarwal
Yearly direct costs $212,500
Total direct costs $1,062,500
Title Human heme oxygenase-1 gene regulation in renal injury

3) UAB Diabetes Research and Training Center Pilot Grant (April 2011 to March 2012)
Principal Investigator Sumant S. Chugh (1% effort)
Title Treatment of diabetic kidney disease
Yearly direct costs $45,000
The major goal of this project is to study whether treatment with sialic acid precursors can reduce proteinuria and improve diabetic nephropathy.

4) National Kidney Foundation Research Fellowship Award (July 2008 – June 2009)
Mentor Sumant S. Chugh
Research Fellow Vijay Vidyasagar
Title Role of ZHX proteins in the pathogenesis of FSGS

5) NIH/NIDDK 1R56DK077073-01 (February 2007 – August 2007)
Principal Investigator Sumant S. Chugh
Title Transcriptional regulation of proteinuria
Yearly direct costs $75,000

6) NIH/NIDDK (R03-DK068203), July 2004 to July 2006
Principal Investigator Sumant S. Chugh
Title Molecular changes in slit diaphragm related proteinuria
Yearly direct costs $50,000
Total direct costs $100,000

7) NIH/NIDDK (K08-DK61275), June 2001 to May 2006
Principal Investigator Sumant S. Chugh
Title APA: A nephritogenic glomerular epithelial cell antigen.
Yearly direct costs $116,550
Total direct costs $582,720

8) National Kidney Foundation Young Investigator Grant, July 2004 to June 2006

Principal Investigator	Sumant S. Chugh
Title	ZHX3 expression and function in the kidney
Yearly direct costs	$50,000
Total direct costs	$100,000

9) ASN-Carl W. Gottschalk Research Scholar Award, July 2002 to June 2004

Principal Investigator	Sumant S. Chugh
Title	Role of Neph1 in podocyte structure and function.
Yearly direct costs	$90,000
Total direct costs	$180,000

10) Satellite Research Grant, September 2001 to August 2004

Principal Investigator	Sumant S. Chugh
Title	Gene regulation of proteinuria
Yearly direct costs	$43,478
Total direct costs	$130,434

11) National Kidney Foundation Research Fellowship Award, 1998 to 2000

Principal Investigator	Sumant S. Chugh
Title	Identification of nephritogenic glomerular antigens
Yearly direct costs	$25,000
Total direct costs	$50,000

12) Joseph Shankman Award of the National Kidney Foundation (MA/RI/NH/VT), 2000 to 2001

Principal Investigator	Sumant S. Chugh
Status	Declined due to funding conflict
Title	Glomerular epithelial cell injury induced by anti-APA antibodies
Yearly direct costs	$31,500

Intellectual Property / Patent applications filed

1) US patent application 13/152,169; PCT/US2011/039058: Methods for Treatment. Inventor: Sumant S. Chugh. Provisional application filed by Sumant S. Chugh on 6/5/2010. Final US patent and PCT filed on 6/2/2011. National phase January 2013. Jurisdictions filed: United States, Canada, China, Japan, Australia, Europe (EPO), India, New Zealand, Israel and South Korea

This patent describes the use of sialic acid and sialic acid precursors in the treatment of minimal change disease and diabetic nephropathy.

2) US Provisional App 61/351,866 and PCT/US2011/039255: Methods for Treatment of Nephrotic Syndrome and Related Conditions. Inventor: Sumant S. Chugh. Filed by UAB Research Foundation (6/5/2010). PCT filed on 6/6/2011. National phase January 2013. Jurisdictions filed: United States, Canada, China, Japan, Australia, Europe (EPO), India, New Zealand, Israel and South Korea. US Patent No. 9,139,629 (CIP) issued on September 22, 2015.

   This patent describes the use of unmodified and modified recombinant Angiopoietin-like 4 protein in the treatment of primary (e. g. FSGS) and secondary (e. g. diabetic nephropathy) glomerular disease. One US patent and multiple international jurisdictions have been awarded.

Startup company

Founder, President, CEO and CFO, GDTHERAPY LLC (incorporated on 1/11/11 in Delaware, registered in Alabama 1/26/11 to 9/24/2014, registered in Illinois 8/25/14).

Based on agreements reached with the UAB Research Foundation, Sumant S. Chugh holds rights to both of the above patents that are being developed through GDTHERAPY LLC.

Bibliography

Manuscripts in preparation

1. Macé C, Del Nogal Avila M, Marshall CB, Shastry S, Donoro H, Soria E, Wetzels J, Dijkman H, Avila-Casado C, Clement LC and **Chugh SS**. The interaction of podocyte ZHX2 with transmembrane proteins determines upstream transcriptional regulation in podocyte disease. (will submit to *Nature*).

Published papers

2. Del Nogal Avila M, Donoro Blazquez H, Manish K. Saha, Marshall CB, Clement LC, Macé CEA, **Chugh SS**. Novel therapeutic approaches for chronic kidney disease due to glomerular disorders. Am J Physiol Renal Physiol. 2016;311:F63-5. PMID:27147672
3. Clement LC, Macé C, Marshall CB, Del Nogal Avila M and **Chugh SS**. The proteinuria – hypertriglyceridemia connection as a basis for novel therapeutics for nephrotic syndrome. *Translational Research*, 2015 Apr;165(4):499-504.PMID 25005737
4. Macé C and **Chugh SS**. Nephrotic syndrome: components, connections and Angiopoietin-like 4 related therapeutics. Invited Review, *J Am Soc Nephrol* 2014;25: 2393–2398. PMID 24854282
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Genbank sequences

1) AY243095 - Mus musculus Neph1 mRNA, complete cds.
2) AY271309 - Rattus norvegicus Neph1 mRNA, partial cds
3) DQ000292 - Mus musculus Aminopeptidase A, complete cds
4) DQ017884 Rattus norvegicus Zinc Fingers and Homeoboxes 3, complete cds
5) DQ317973 Mus Musculus Zinc Fingers and Homeoboxes 3, complete cds

7) Mouse GLEPP1, complete cds
8) Mouse WT1, complete cds

Selected abstracts

1. Macé C, Clement LC, **Chugh SS**. Feedback loops between the kidney and peripheral organs link proteinuria and hypertriglyceridemia in nephrotic syndrome. Abstract, American Society of Nephrology Meeting, 2013.
2. Clement LC, Macé C, **Chugh SS**. Binding of circulating sialylated Angiopoietin-like-4 (Angptl4) to its glomerular endothelial receptor reduces proteinuria. Abstract, American Society of Nephrology Meeting, 2012.
3. Macé C, **Chugh SS**, Clement LC. Angiopoietin-like 4 induced hypertriglyceridemia results from a multisystem effort to reduce proteinuria. Oral Free Communication. ERA-EDTA meeting, Paris, France. May 2012.
4. Clement LC, Macé C, **Chugh SS**. Novel concepts in nephrotic syndrome: Angiopoietin-like 4 induced hypertriglyceridemia results from a multisystem effort to reduce proteinuria. Oral Free Communication, American Society of Nephrology Meeting, 2011.
5. Macé C, Clement LC, **Chugh SS.** Novel therapeutics in diabetic nephropathy: sialic acid precursors reduce proteinuria in experimental diabetic nephropathy. Abstract, American Society of Nephrology Meeting, 2011.
6. Clement LC, Avila-Casado C, Macé C, Soria E, Bakker WW, Kersten S, **Chugh SS**. Novel therapeutics is nephrotic syndrome: Sialic Acid precursor ManNAc improves sialylation of Angiopoietin-like 4 (Angptl4) in podocytes and reduces selective proteinuria in minimal change disease. Oral Free Communication, American Society of Nephrology Meeting, 2010.
7. Macé C, Clement LC, Arnouk H, Mobley J, Soria E, Avila-Casado C, **Chugh SS**. Elevated circulating levels of IGFALS induce classic molecular and morphological changes in human non-HIV collapsing glomerulopathy. Abstract, American Society of Nephrology Meeting, 2010.
8. Clement LC, Macé C, Avila-Casado C, Soria E, Bakker WW, Kersten S, **Chugh SS**. Novel proteins in nephrotic syndrome: Circulating Angiopoietin-like 4 (Angptl4) reduces proteinuria while inducing hypertriglyceridemia in nephrotic syndrome. Abstract, American Society of Nephrology Meeting, 2010.
9. **Chugh SS**. Angiopoietin-like 4 in Minimal Change Disease. Oral Free Communication. 8th International Podocyte Conference, Bristol, UK, June 2010
10. Clement LC, Avila-Casado C, Soria E, Shastry S, **Chugh SS**. Podocyte secreted Angiopoietin like 4 (Angptl4) is a key mediator of glucocorticoid sensitive human minimal change disease (MCD). Abstract, American Society of Nephrology Meeting, 2009.
11. Clement LC, **Chugh SS**. Angiopoietin like 4 (Angptl4), a key mediator of human and experimental minimal change disease (MCD), is a glucocorticoid sensitive gene in vivo and in vitro. Abstract, American Society of Nephrology Meeting, 2009
12. Mace C, Arnouk H, Clement LC, Avila-Casado C, **Chugh SS**. Key members of the Insulin like growth factor family may contribute to the development of collapsing glomerulopathy in non-HIV patients. Abstract, American Society of Nephrology Meeting, 2009.

13. Clement LC, Mace C, Bakker WW, Kersten S, **Chugh SS**. Post-translational modification of Angiopoietin like 4 (Angptl4) is key to its pleiotropic role in nephrotic syndrome. Abstract, American Society of Nephrology Meeting, 2009.
14. **Chugh SS**, Bai G, Clement LC. ZHX proteins regulate podocyte Angiopoietin like 4 (Angptl4) expression during the development of minimal change disease (MCD). Abstract, American Society of Nephrology Meeting, 2009.
15. Shastry S, Clement LC, Bai GX, Arnouk H, **Chugh SS**. Zinc Fingers and Homeoboxes (ZHX) proteins interact with the cytoplasmic tail of Aminopeptidase A (APA) to form a key nephritogenic complex in the podocyte. Abstract, American Society of Nephrology Meeting, 2008.
16. Clement LC, Liu G, Soria E, Perez Torrez I, Lam A, Bergner D, Kanwar YS, Avila – Casado C, **Chugh SS**. Circulating factors induce non – HIV collapsing glomerulopathy by a combination of podocyte and endothelial lesions. Abstract, American Society of Nephrology Meeting, 2007.
17. Liu G, Clement LC, Kanwar YS, Avila-Casado C and **Chugh SS**. ZHX proteins are early regulators of podocyte gene expression during the development of nephrotic syndrome. Oral Free Communication, American Society of Nephrology Meeting, 2006.
18. Clement LC, Liu G, Avila-Casado C and **Chugh SS**. Secretion of clone 1135 - related protein by the podocyte serves as a mechanistically relevant urinary biomarker of minimal change disease. Oral Free Communication, American Society of Nephrology Meeting, 2006.
19. Clement LC, Liu G, Avila-Casado C and **Chugh SS**. Circulating factors induce non-HIV collapsing glomerulopathy by WT1-dependent and WT1-independent pathways. Abstract, American Society of Nephrology Meeting, 2006.
20. Liu G, Clement LC, Kanwar YS and **Chugh SS**. Transcriptional factor ZHX3 is expressed in podocytes, and regulates the pathogenesis of proteinuria in experimental minimal change disease. Oral Free Communication, American Society of Nephrology Meeting, 2005.
21. Clement LC, Liu G, Avila-Casado C and **Chugh SS**. Gene expression profiling of the onset of experimental proteinuria using Taqman real time PCR allows the identification of steroid-sensitive and steroid-resistant pathways in the pathogenesis of proteinuria. Oral Free Communication, American Society of Nephrology Meeting, 2005.
22. Liu G, **Chugh SS**. Cloning and characterization of rat Zinc Fingers and Homeoboxes 3 (ZHX3), a transcriptional factor downregulated during proteinuria. Abstract, American Society of Nephrology Meeting, 2004.
23. **Chugh SS**, Liu G. Identification of differentially expressed glomerular genes during heterologous phase proteinuria using suppression subtractive hybridization and real time PCR. Abstract, American Society of Nephrology Meeting, 2003.
24. Liu G, Kaw B, Kurfis J, Rahmanuddin S, Kanwar YS, **Chugh SS**. Antibody-induced disruption of the Nephrin-Neph1-ZO-1 macromolecular complex in the slit diaphragm results in proteinuria. Abstract, American Society of Nephrology Meeting, 2003.
25. **Chugh SS**, Kanwar YS. Molecular cloning of mouse Neph1 mRNA, and localization on the podocyte surface in rodent glomeruli. Oral Free Communication, American Society of Nephrology Meeting, *J Am Soc Nephrol 2002*.

26. **Chugh S**, Walia N, Kanwar YS. Nephrotoxic serum induced heterologous phase proteinuria in aminopeptidase A knockout mice. Abstract, American Society of Nephrology Meeting, 2001.

27. **Chugh S**, Taylor GA, Yuan H, Salant DJ. Antibodies to aminopeptidase A induce shedding of cell surface APA from cultured mouse glomerular epithelial cells. Abstract, American Society of Nephrology Meeting, 2000.

Sumant S Chugh, M.D. TEACHING PORTFOLIO

Teaching philosophy. One of the core values of my career has been to train and retain outstanding professionals in research and clinical medicine through intensive mentoring and teaching. Throughout my career, I have encouraged my clinical trainees to be inquisitive and forthcoming with questions, since the training period is the perfect time to explore both doubts and novel ideas that would result in the development of well rounded physicians. This is one of the reasons that I have actively participated in the teaching of fellows, residents and medical students. In my research laboratory, I conduct the initial training of all of my trainees myself, regardless of their prior level of expertise. My lab is structured to allow considerable flexibility of thought and sharing of ideas among different members. I have always encouraged my lab trainees to adhere to a strong work ethic and discipline that allows them to assimilate new ideas and techniques at a rapid pace.

1. ***Inpatient activities:***

Current:

Attending on UAB Nephrology Ward Service - 1-2 months per year.
Supervise 2 Residents, 2 Interns, Acting Interns and 1 Fellow.
2008-present

Attending on Northwestern Memorial Hospital Nephrology service - 1 month/year)
Supervise Nephrology Fellow during rounds.
2001-2007

Attending Lakeside VA Chicago IL Nephrology service – 1 month/year
Supervise Nephrology Fellow during rounds.
2001-2003

2. ***Outpatient activities:***

TKC Nephrology Clinic (1/2 day twice a month)
Manage 5-10 patients per clinic. Supervise nephrology fellow (if present)
2008-present

Northwestern Medical Faculty Foundation Nephrology Clinic (1/2 day twice a month)
Manage 5-10 patients per clinic. Supervise nephrology fellow (if present)
2002-2007

3. ***Lectures:***

Organizer for Weekly Renal Pathology Conference.

2010-present: The pathology conference represents a major important educational program for the Division of Nephrology faculty and fellows, with additional input from the Division of Rheumatology. I organize this meeting in conjunction with our renal pathologist William Cook MD. Every Monday, Bill Cook and I discuss the cases of the previous week and pick 2 cases for presentation (one native and one transplant biopsy). I coordinate each presentation with the faculty and fellows involved in the case. The major purpose of this conference is to expose the Nephrology Fellows to carefully selected cases to avoid redundancy and ensure exposure to a broad spectrum of renal pathology. This session also encourage the spirit of independent presentation and confidence building among the fellows.

Division of Nephrology Lecture/Seminars:

2008-present University of Alabama at Birmingham, Nephrology Research Training Center Research Conference. 1-2 seminars per year on activities in my laboratory

2011, 2014 University of Alabama at Birmingham, Nephrology Grand Rounds: "Mechanisms of nephrotic syndrome"

2008-present University of Alabama at Birmingham, Nephrology Fellowship Training Conference: “Primary glomerular Disease”

2008-present University of Alabama at Birmingham, Nephrology Fellowship Training Conference: “Glomerular disease due to systemic disorders”

2009-present University of Alabama at Birmingham, Nephrology Fellowship Training Conference: “Introduction to renal pathology”

2009-present University of Alabama at Birmingham, Nephrology Fellowship Training Conference: “Basics of renal pathology -1”

2009-present University of Alabama at Birmingham, Nephrology Fellowship Training Conference: “Basics of renal pathology -2”

2009-present University of Alabama at Birmingham, Nephrology Fellowship Training Conference: “Review to renal pathology”

2000-2006 Northwestern University Feinberg School of Medicine, lecture for Internal Medicine residents and medical students on Nephrology rotation: “Overview of glomerular disease”. 6-8 lectures / year.

2000-2006 Northwestern University Feinberg School of Medicine, Nephrology Fellows curriculum: “Primary glomerular Disease”

2000-2006 Northwestern University Feinberg School of Medicine, Nephrology Fellows curriculum: “Glomerular disease due to systemic disorders”

2006 Scientific Basis of Medicine Lecture Series to Internal Medicine residents: “Nephritic Syndrome”

Medical Student teaching

2008-present University of Alabama at Birmingham First year medical student teaching. Introduction to Clinical Medicine 1 course. 13 sessions, each session is 1.5 to 2 hours, and involves training in History Taking skills. I usually share this course with another faculty member or nephrology fellow.

2000-2006 Northwestern University Feinberg School of Medicine, Small Group Sessions for second year medical students. 6 sessions / year. Each session lasts 1 hour, and involves interactive discussion on various aspects of kidney disease using a clinical case format.

2000-2006 Northwestern University Feinberg School of Medicine, Small Group Sessions for first year medical students. 6 sessions / year. Each session lasts 1 hour, and involves interactive discussion on various aspects of kidney disease using a clinical case format.

4. Mentorship of trainees:

Trainees in my laboratory:

Lionel C. Clement PhD 2004-2012
Current position: Assistant Professor, Department of Medicine, University of Alabama at Birmingham
"Angiopoietin-like-4 in nephrotic syndrome"
Lionel joined my lab as a postdoctoral fellow in December 2004, and was promoted to Instructor in September 2010. His K01 award from NIH / NIDDK started in July 2012. He has first author papers in Nature Medicine, Journal of Biological Chemistry, Journal of Lipid Research and Kidney International.

Camille E. Macé PhD 2009-present
Current position: Instructor
"Pathogenesis of Collapsing Glomerulopathy"
Camille joined my lab in March 2009, and is conducting proteomic studies to determine circulating factors that cause non-HIV collapsing glomerulopathy.

Caroline Marshall MD 2011-present
Current Position: Assistant Professor of Medicine
"GBM thickening in diabetic nephropathy"
Caroline trained at the University of Washington, Seatlle Division of Nephrology as a fellow, and was Assistant Professor there for 3 years before joining UAB in September 2011. She is conducting studies in my laboratory to determine the etiology of glomerular basement membrane thickening in diabetic nephropathy. Caroline received a favorable score (156) on her VA CDA2 grant appication, that has since been resubmitted.

Maria Del Nogal Avia, PhD 2013-present
Current position: Postdoctoral Fellow
Maria trained at the University of Alcala in Spain, and joined my lab to study mechanisms of nephrotic syndrome.

Manish Saha, MD 2015 to present
Manish finished his first year of clinical nephrology fellowship and joined my lab in August 2015 to study the role of sialic acid in kidney biology and multisystem disorders.

Gang Liu MD, MD PhD 2002-2006
Current Position: Professor of Medicine and Director of the Clinical Research Center, Guangdong Medical School, China.
Previous Position: Assistant Professor of Medicine, Northwestern University, Chicago
"ZHX proteins in proteinuric disorders"
Gang joined my lab in 2002 as a postdoctoral fellow and conducted seminal work on the cloning of rat ZHX3 and investigating the role of the ZHX proteins in podocyte disease. Gang was promoted to Assistant Professor of Medicine at Northwestern University, and in 2010, accepted a position of Professor of Medicine at Guangdong Medical School. Gang had first author papers in the Journal of Clinical Investigation and Journal of Biological Chemistry.

Guangxing Bai PhD 2007-2009
Current Position: Postdoctoral Fellow, Department of Dermatology, University of Alabama at Birmingham.
"Regulation of podocyte genes by ZHX proteins"
Guangxing was involved in promoter-reporter studies in ZHX target genes, and the generation of podocyte-specific ZHX2 transgenic rats.

Suresh Shastry PhD 2008-2009
Current Position: Postdoctoral Fellow, Department of Surgery, University of Pittsburg Medical Center.
"Interaction of ZHX proteins with podocyte expressed transmembrane proteins"
Suresh studied and described the interaction of the ZHX family of transcriptional factors with the cytoplasmic tail of Aminopeptidase A.

Vijay Vidyasagar MD 2008-2009
Current Position: Assistant Professor of Medicine, University of Wisconsin, Madison
"ZHX proteins are critical determinants of the pathogenesis of FSGS"
Vijay was a recipient of a NKF Fellowship Award, and conducted studies on the role of sustained downregulation of podocyte expressed ZHX3 in the pathogenesis of FSGS. He subsequently joined a transplant fellowship in Madison, and stayed on there on their faculty.

Albert Lam MD 2005-2006
Current Position: Instructor, Department of Medicine, and Associate Physician, Brigham and Womens Hospital
"Circulating factors in collapsing glomerulopathy"
Albert joined my lab at Northwestern University for research electives during his Internal Medicine Residency, and worked towards demonstrating the effect of sera from patients with non-HIV collapsing glomerulopathy on the expression of podocyte expressed transcriptional factors, including the ZHX proteins and WT1. He subsequently joined a nephrology fellowship at Brigham and Womens Hospital, and is funded through the American Heart Association. He works on acute kidney injury and stem cell research.

Daniel W. Bergner MD 2006-2007

"Transcriptional regulation by ZHX proteins"
Daniel joined my lab at Northwestern University for research electives during his Internal Medicine Residency, and studied the effects of ZHX protein overexpression and knockdown in vitro. He subsequently joined a cardiology research fellowship at Northwestern University.

Duncan Johnstone MD, PhD 2004
Current Position: Assistant Professor, University of Pennsylvania.
"Role of Neph1 in proteinuria"
Duncan joined my lab at Northwestern University for research electives during his Internal Medicine Residency, and studied the biology of neph1 expression in the podocyte. He subsequently joined a nephrology fellowship at University of Michigan, and moved to University of Pennsylvania in 2009.

Steven Cheng MD 2002
Current Position: Assistant Professor, Washington University, St. Louis
"Aminopeptidase A in podocyte disease"
Steven joined my lab at Northwestern University for research electives during his Internal Medicine Residency, and studied the role of Aminopeptidase A in the pathogenesis of proteinuria. He joined a nephrology fellowship at Washington University, and stayed on there as a member of their faculty.

Jayson Kurfis MS 2002-2004
Current Position: Scientist, L'Oreal Research Division, Chicago
"neph1 and nephrin interaction"
Jayson joined my lab at Northwestern University as a research technician, and over a span of two years learnt a large number of techniques including generation and purification of recombinant proteins, cloning, gene expression and immuno-imaging. He then joined the L'Oreal research division, and now runs an independent research program involving the study of different aspects of human keratinocytes as relevant to the products made by his company.

Beenu Kaw MD 2002
"Biology of neph1"
Beenu joined my lab at Northwestern University for research electives during her Internal Medicine Residency at Illinois Masonic Medical Center, and studied the role of neph1 in slit diaphragm permeability. She subsequently became a Nephrology fellow at Northwestern University and went into private practice.

Navjeet K Hansra 2002
Current Position: Radiology resident, University of Illinois at Chicago
"Biology of Aminopeptidase A"
Navjeet took time off after the first year of medical school at Northwestern University to work in my laboratory. She participated in the cloning and expression of Aminopeptidase A. After graduating from medical school, she joined research and residency in radiology.

Neelam Walia 2001
Current Position: Faculty, Department of Microbiology, Chicago Medical School, North Chicago IL.
"Aminopeptidase A and proteinuria"

Neelam conducted preliminary studies on the expression of Aminopeptidase A in models of proteinuria.

I served or am serving on Graduate Student Thesis Committees for the following individual:

Jung Kim PhD 2008-2010
Ph.D. Committee Member for Graduate Student in Dr. Anupam Agarwal's Lab at the University of Alabama at Birmingham.
Project Title: "Transcriptional regulation of the human Heme Oxygenase-1 in renal epithelial cells"
I served on Jung's PhD advisory board. I also advised him on issues related to the generation and maintenance of transgenic animals.

Sumant S. Chugh MD Service Portfolio

Exemplary patient care

2008 to present	Attending Physician on UAB Nephrology Ward Service - 1-2 months per year. This is a busy inpatient service in which patients often have complex medical issues in addition to kidney failure, and requires high quality diagnostic and decision making skills.
2008 to present	Outpatient Nephrology at Kirklin Clinic, 2 half day clinics / month. The patient population includes general nephrology patients, as well as specific referrals from colleagues and non-UAB physicians for second opinion and management of patients with glomerular disease and nephrotic syndrome.
2008 to present	Weekend call – 4-5 weekends per year. This call covers inpatients on the Nephrology Ward service.
2001 to 2007	Attending Physician on Nephrology Consult Service at Northwestern Memorial Hospital – 1 month / year. This is a high volume service with up to 30 patients / day that require significant attention to detail and outstanding communication skills with physicians of other specialties.
2001 to 2007	Weekend call – 6-7 weekends per year. This call covers inpatients on the Nephrology Consult service.
2001 to 2007	Outpatient Nephrology at Northwestern Medical Faculty Foundation, 2 half day clinics / month. The patient population includes general nephrology patients, as well as specific referrals for diagnosis and management of patients with glomerular disease and nephrotic syndrome.
2001 to 2003	Attending Physician, Lakeside VA Medical Center – 1 month per year. This service requires skillful assessment and management of inpatient veterans with kidney disease and related medical problems.

Staff responsibility for a service or specific area of patient care.

2010 to present	Chief Coordinator, weekly Renal Pathology conference and discussion forum. The weekly Renal Pathology conference is a key meeting attended by general nephrologists, transplant nephrologists, rheumatologists, fellows and kidney researchers. For this meeting, all the biopsies of the previous week are first discussed by the Chief Coordinator with our renal pathologist Dr William Cook, to identify suitable cases for presentation. Next, the Chief Coordinator discusses the cases with the clinicians involved in the care of these patients to identify significant clinical

management related issues that need to be highlighted. Following discussion of the clinical and pathology profile of the selected cases, the Chief Coordinator then solicits opinions on key patient treatment related issues from the group. This meeting has rapidly evolved into the key forum to discuss the management of patients with kidney disease related problems at UAB.

Serving on committees within the department, school, university and/or affiliated institutions.

2008 to 2014	Member, Nephrology Fellowship Committee. This committee plays a critical role in shaping the Nephrology Fellowship program at UAB. The committee outlines and adjusts the fellowship curriculum on a yearly basis based on feedback from faculty and fellows, provides guidance to fellows on clinical care and future career options, and makes administrative decisions to ensure that the fellowship program is in compliance with guidelines from various credentialing bodies and with the American Board of Internal Medicine.
2008 to 2014	Associate Program Director, UAB Nephrology Fellowship program. This position includes administrative responsibilities to ensure the implementation of the research curriculum of the Nephrology Fellowship program, and to make recommendations and provide guidance towards improving the research profile of the Division of Nephrology.
2008 to present	Nephrology Fellowship Selection Committee. This committee screens all incoming applications, shortlists those that meet criteria for interview, conducts fellowship interviews, and ranks applicants to submit for the match through ERAS.
2008 to 2010	PhD Thesis Committee of Junghyun Kim. This committee provided guidance and feedback to the candidate during the preparation of his PhD thesis.
2008	Head, UAB Nephrology Website redesign Committee. The UAB Division of Nephrology website was significantly resigned to highlight the strengths of the division in research and patient care. An easy to follow guide for research opportunities in the Nephrology Fellowship Program was developed from scratch. The newly awarded George O'Brien Center was also added into the web site
2001 to 2007	Nephrology Fellowship Recruitment Committee, Northwestern University Feinberg School of Medicine. This committee conducted interviews to identify suitable candidates for the Nephrology Fellowship Program.

2002 to 2007	Internal Medicine Resident Recruitment Committee, Northwestern University Feinberg School of Medicine. This committee conducted interviews to identify suitable candidates for the Internal Medicine Program.
2003	Nephrology Faculty Recruitment Committee, Northwestern University Feinberg School of Medicine. This committee was charged with the responsibility of recruiting a senior investigator to the Division of Nephrology.
2003	Rheumatology Faculty Recruitment Committee, Northwestern University Feinberg School of Medicine. This committee was charged with the responsibility of recruiting a senior investigator to the Division of Rheumatology.
2003	Pediatrics Faculty Recruitment Committee, Childrens Hospital, Chicago. This committee was charged with the responsibility of interviewing Faculty Candidates for recruitment to Pediatric Nephrology.

Providing service to the professional and lay community through education, consultation or other roles.

Invited lectures

1. Invited Speaker, Symposium on Lipids and Fatty Acids in Kidney Disease, *American Society of Nephrology Meeting*, *San Diego*, November 2015. “Hypertriglyceridemia in nephrotic syndrome”.
2. Invited Speaker, *Kansas City VA Medical Center, Kansas City*, May 2015. “Angiopoietin-like 4 in nephrotic syndrome”.
3. Invited Speaker, session on nephrotic syndrome. *ISN World Congress of Nephrology, Cape Town, South Africa*, March 2015. “Angiopoietin-like 4 in nephrotic syndrome”.
4. Visiting Professor, *University of Toronto, Toronto, Canada*, January 2015. “Angiopoietin-like 4 in nephrotic syndrome: Dr. Jekyll, Mr. Hyde and their mutant clones”
5. Invited Speaker, *Rush University Medical Center, Chicago*, December 2014. “Angiopoietin-like-4 in nephrotic syndrome: Dr. Jekyll, Mr. Hyde and their mutant clones”
6. Invited Speaker, translational session “From bench to bedside-Glomerular disease”, *German Renal Society Kongress für Nephrologie, Berlin, Germany*, September 2014. “Minimal Change Disease”.
7. Medical Grand Rounds, *University of Alabama at Birmingham, Birmingham*. July 2014. Nephrotic syndrome therapeutics: Dr. Jekyll, Mr. Hyde and their mutant clones.
8. Invited Speaker, *10th International Podocyte Conference, Freiburg, Germany*, June 2014. “Angptl4 and MCD”.
9. Invited Nephrology Grand Rounds Speaker, *Northwestern University Feinberg School of Medicine*, Chicago, January 2014. “ANGPTL4 in nephrotic syndrome: Dr. Jekyll, Mr. Hyde, and their mutant clones”

10. Invited Speaker, *University of Chicago*, Chicago, January 2014. “Soluble mediators of human nephrotic syndrome”.
11. Invited Speaker, Seminar on Collapsing Glomerulopathy, *American Society of Nephrology Meeting*, Atlanta, November 2013. “Human non-HIV collapsing glomerulopathy: role of circulating factors”.
12. Invited Speaker, *Baylor College of Medicine*, Houston, September 2013. “Molecular mechanisms in nephrotic syndrome”.
13. Invited Speaker, Seminar on Core Competencies in Kidney Research, *University of Alabama at Birmingham*, May 2013. “Developing novel therapeutics in nephrology: Basic principles”.
14. Invited Speaker, *University of Southern California*, Los Angeles, February 2013. “Molecular mechanisms in nephrotic syndrome”.
15. Invited speaker, *NRTC Seminar, UAB* Birmingham, June 2012. “Dispelling myths in nephrotic syndrome: the first link between proteinuria and hyperlipidemia is revealed”
16. Invited Speaker, Symposium on MCD/FSGS, *49th ERA-EDTA Congress, Paris, France*. May 2012. “Minimal Change Nephropathy: the search for molecular mediators”.
17. Invited Speaker, *9th International Podocyte Conference, Miami Beach*. April 2012. Session on New Pathways to Proteinuria.
18. Invited Speaker, *New York Society of Nephrology*, New York. April 2012. “Mechanisms and novel therapeutics in Minimal Change nephrotic syndrome”.
19. Invited Speaker, *LSU Health Sciences Center,* Shreveport. March 2012. “Angiopoietin-like-4 in nephrotic syndrome”.
20. Visiting Professor and Invited Speaker, *Postgraduate Institute*, Chandigarh, India. January 2012. “Pathogenesis of Minimal Change Disease”.
21. Invited Speaker, Session on cardiovascular diseases, Rat Genomics & Model's meeting, *Cold Spring Harbor Laboratory, New York*. December 2011. “Systemic effects of Angiopoietin-like-4 overexpression in rats”.
22. Invited Speaker, Symposium on Life of podocytes, *American Society of Nephrology Meeting, Philadelphia*. November 2011. “Angiopoietin-like 4”.
23. Invited Speaker, Renal Grand Rounds, *Albert Einstein College of Medicine / Montefiore Medical Center*, New York. September 2011. “Angiopoietin-like-4 in nephrotic syndrome”.
24. Guest Speaker, Research Seminar series, *Southern Research Institute*, Birmingham. August 2011. “Sialylation-based therapeutics for proteinuria and kidney disease”.
25. Medical Grand Rounds, *University of Alabama at Birmingham,* Birmingham. July 2011. An obituary for “Idiopathic” Minimal Change nephrotic syndrome.
26. Invited Speaker, *Brigham and Womens Hospital*, *Harvard Medical School,* Boston. June 2011. “Angiopoietin-like-4 in nephrotic syndrome”.
27. Invited Speaker, Symposium on Nephrotic Syndrome - New Insights, *International Society of Nephrology Meeting, Vancouver, Canada*. April 2011. “Angiopoietin-like 4: Potential role in Minimal Change Disease.”

28. Invited Speaker, *Mount Sinai School of Medicine*, New York. September 2010. “Podocyte secreted proteins in nephrotic syndrome”.
29. Visiting Professor and Speaker, *Postgraduate Institute*, Chandigarh, India. June 2010. “Minimal Change Disease”.
30. Invited Speaker, Colloquium in Molecular Medicine, *Universitätsklinikum der RWTH Aachen, Aachen, Germany*. June 2010. “Molecular mechanisms in human Minimal Change Disease”.
31. Speaker, 8th *International Podocyte Conference, Bristol U. K.* June 2010. “ Angiopoietin-like 4 in minimal change disease”
32. Speaker, *UAB-Vanderbilt retreat*, Chattanooga May 2010. “Minimal Change Disease”.
33. Guest Speaker – *UAB Birmingham* January 2010. “Molecular basis of minimal change disease”.
34. Invited Speaker, *Southern Salt, Water and Kidney Club*, Sarasota FL December 2009. “Molecular mechanisms in Minimal Change Disease”.
35. Speaker, *Vanderbilt - UAB retreat*, Chattanooga May 2009. “Molecular mechanisms of proteinuria”.
36. Invited Speaker, *Southern Salt, Water and Kidney Club*, Sarasota FL December 2008. “Molecular mechanisms of proteinuria”.
37. Invited Speaker, Symposium on mechanisms of proteinuria and the nephrotic syndrome, *American Society of Nephrology Meeting*, Philadelphia, November 2008. “Transcriptional regulation of podocyte disease”.
38. Internal Medicine Grand Rounds, *UAB-Montgomery Baptist Medical Center*, Montgomery AL, August 2008. “Understanding nephrotic syndrome: a peek into the future”.
39. Visiting Professor, *All India Institute of Medical Sciences*, New Delhi, India, February 2008. "Novel insights into the pathogenesis of primary glomerular disease”
40. Invited *Plenary Session Speaker, Indian Society of Nephrology Meeting*, New Delhi, December 2007. “ Molecular pathogenesis of human minimal change disease”.
41. Guest Speaker, *Postgraduate Institute*, Chandigarh, India , November 2007. “Recent developments in the investigation of primary glomerular disease”.
42. Invited Speaker, *P30 PKD group, University of Alabama*, Birmingham, October 2007. “Understanding primary glomerular disease: a fresh look, and a challenging new hypothesis”.
43. Guest Speaker, Division of Nephrology, *University of Alabama*, Birmingham, June 2007. "Transcriptional regulation of podocyte disease : the emerging role of ZHX proteins".
44. Invited Speaker, *Harvard Institutes of Medicine, Brigham and Womens Hospital*, Boston, May 2007. "Transcriptional regulation of podocyte disease : the emerging role of ZHX proteins".
45. Visiting Professor, *Instituto Nacional De Cardiologia,* Mexico City, February 2007. “Molecular basis of human minimal change disease”
46. *Internal Medicine Grand Rounds, Illinois Masonic Medical Center*, Chicago IL. October 2006. “Understanding proteinuria as a risk factor”.

47. Invited Speaker, Nephrology Research Seminar, *Loyola University Medical Center*, Maywood, IL. August 2006. “Transcriptional regulation of podocyte disease”.
48. Invited Speaker, *LIJMC-Albert Einstein College of Medicine*, New York, June 2006.”Transcriptional regulation in minimal change disease”.
49. Invited Speaker, *Central Society of Clinical Investigation Meeting*, Chicago, April 2006.” Newer insights into the pathogenesis of minimal change disease”
50. Visiting Professor, *Postgraduate Institute, Chandigarh*, India , March 2006. “Unlocking minimal change disease---finally !!!!”
51. Visiting Professor, U*niversity of California San Diego*, February 2006. “Molecular mechanisms of proteinuria.”
52. Invited Speaker, *University of Texas at Houston*, December 2005. “ Molecular mechanisms of proteinuria”.
53. Invited Speaker, *Baylor College of Medicine*, December 2005. “Molecular mechanisms of proteinuria”.
54. Invited Speaker, *IMIN meeting, Puerto Vallarta, Mexico* November 2005. “Molecular basis of Collapsing Glomerulopathy”
55. Invited Speaker, *Satellite Research Meeting, Washington, D.C*. May 2005. “A tale of two clones”
56. Invited Speaker, Nephrology Research Conference, *University of Texas Southwestern Medical School, Dallas, TX*, November 2004. “Molecular mechanisms of proteinuria”.
57. Invited Speaker, Nephrology Research Seminar, *Loyola University Medical Center*, Maywood, IL. September 2004. “Molecular mechanisms of proteinuria”.
58. Invited Young Investigator Talk, 5th International Symposium on Podocyte Biology, *Seatlle*, June 2004. “Soup du jour: Podocytes, slit diaphragms, and a touch of proteinuria”.
59. Invited Speaker, Nephrology Research Seminar, *University of Washington, Seatlle*, May 2004. “Molecular mechanisms of proteinuria”.
60. Invited Speaker, Nephrology Rounds, *Columbia University, New York*, April 2004. “Recent developments in the pathogenesis of proteinuria”.
61. Invited Speaker, Division of Nephrology, *Yale Medical School*, New Haven, April 2004. “Recent developments in the pathogenesis of proteinuria”.
62. Visiting Professor, Long Island Jewish Medical Center, *Albert Einstein College of Medicine, NY* December 2003. “Molecular mechanisms of proteinuria”
63. Guest Speaker, *New York Society of Nephrology*, New York, NY December 2003. “Recent developments in the pathogenesis of proteinuria”
64. Invited Speaker, Division of Nephrology, *Medical College of Wisconsin*, Milwaukee, September 2003. “Molecular mechanisms of proteinuria”
65. Satellite Research Meeting, *San Francisco*, August 2003. “Gene regulation of proteinuria”
66. International CME, Indian Society of Nephrology, *Postgraduate Institute, Chandiagarh*, India, March 2003. “Recent developments in slit diaphragm biology”

67. Invited Speaker, Department of Medicine, *Northwestern University*, Feinberg School of Medicine, Chicago, February 2003. “Critical role of slit diaphragm proteins in proteinuria”
68. Oral Free Communication, *American Society of Nephrology Meeting*, Philadelphia Nov 2002
69. Invited Speaker, *Loyola* University Medical Center, Maywood IL December 2002. “Podocyte injury and proteinuria”.
70. Invited Speaker, University of Chicago, Chicago, 2000. “Mechanisms of proteinuria”.
71. Invited Speaker, Northwestern University, Chicago, 2000. “Mechanisms of proteinuria”.
72. Invited Speaker, Medical College of Wisconsin, Milwaukee, 1999. “Recent developments in mechanisms of proteinuria”.

Professional and Scientific Service

Journal peer review

Nature Medicine
Human Molecular Genetics
Journal of Clinical Investigation
Kidney International
Journal of the American Society of Nephrology
American Journal of Pathology
American Journal of Physiology
American Journal of Transplantation
Annals of Medicine
Clinical Immunology
Nephrology, Dialysis and Transplantation
Proteomics
Translational Research
Diabetic Medicine
Molecular Medicine
Physiological Genomics
JAMA

Guest Editor Seminars in Nephrology, November 2003 edition

Grant review

2008 - Member, UAB PKD P30 pilot grant Study Section
2009 onwards - Member, NIH – CSR Special Emphasis Panels (PBKD conflicts - R01, R21)
2010 onwards – Ad Hoc Member, VA Nephrology Study Section
2011 onwards – Ad Hoc Member, External Referee Panel, Kidney Research UK
2011 onwards – Member, NIH/NIDDK Special Review Panels (R01)
October 2011 – Member, NIH – CSR PBKD Study Section
2012 onwards – Ad Hoc Member, Medical Research Council (MRC, UK) grant review panel
February 2013 - Member, NIH – CSR PBKD Study Section
February 2014 – Mail reviewer, NIH – CSR PBKD Study Section
March 2014 - Member, NIH – CSR Special Emphasis Panels, DKUS IRG
March 2014 – Member, NIH/NCATS review panel.
July 2014 – June 2018 – Standing Member, NIH – CSR PBKD Study Section.
October 2014 - Ad Hoc Member, NIDDK Special Emphasis Panel

November 2014 – Ad Hoc member, NIDDK intramural grant review panel.
February 2015 - Ad Hoc Member, NIDDK Special Emphasis Panel.

Abstract review

Member, Abstract Review Committee, American Society of Nephrology Meeting, 2011
Member, Abstract Review Committee, American Society of Nephrology Meeting, 2010
Judge, UAB DOM Trainee Research Symposium, March 2009
Member, Abstract Review Committee, American Society of Nephrology Meeting, 2008
Judge, UAB DOM Trainee Research Symposium, March 2008
Member, Abstract Review Committee, American Society of Nephrology Meeting, 2006

Program / Symposium Chairs

Invited Chair, Session on Mouse Models of Glomerular Disease, ASN 2006
Research Program Committee Chair, Chicago Nephrology Day, 2005
Invited Chair, Symposium on Cell Cycle Proteins, ASN 2001