

Madhumita Jena Mohanty, M.D.

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Department of Medicine
Division of Nephrology
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EDUCATION:

June 1984	Higher Secondary School Certificate Central School, Kanpur, India.
July 1984 - Dec. 1989	M.B., B.S., Maulana Azad Medical College Delhi University, India.
July 1991 - June 1994	Internal Medicine Residency, Nassau County Medical Center State University of New York at Stony Brook (Clinical Campus).
July 1994 - June 1997	Nephrology Fellowship, School of Medicine Emory University, Atlanta, GA

TRAINING:

Jan. 1989 - Dec. 1989	Rotatory Intern, Lok Nayak Jai Prakash Narayan and affiliated Hospitals New Delhi, India.
Jan. 1990 - Mar. 1990	Junior Doctor, G. B. Pant Hospital, New Delhi, India
July 1991 - June 1994	Internal Medicine Resident, Nassau County Medical Center State University of New York at Stony Brook (Clinical Campus)
July 1994 - June 1997	Nephrology Fellow, School of Medicine Emory University, Atlanta, GA

FACULTY APPOINTMENTS:

October 1997	Assistant Professor Department of Medicine Wayne State University Detroit, Michigan
January 1999	Staff Physician, VA Medical Center, Detroit, MI

MAJOR PROFESSIONAL SOCIETIES:

Associate, American College of Physicians
American Society of Nephrology

American Physiological Society

LICENSES and BOARD CERTIFICATION:

Michigan License ID NO. 4301069697

August 1996

Diplomate, American Board of Internal Medicine, Internal Medicine

November 1997

Diplomate, American Board of Internal Medicine, Nephrology

November 2006

Recertified, American Board of Internal Medicine, Internal Medicine

HONORS/AWARDS:

Merit Scholarship, Higher Secondary Exam (CBSE).

Merit Scholarship, M.B., B.S. Exam, Delhi University.

Distinction in Anatomy and Physiology (M.B., B.S. Exam).

Ninth Position in Order of Merits, M.B., B.S. Exam, Delhi University.

Third Position in Order of Merits, M.B., B.S Exam, Maulana Azad Medical College.

Outstanding House Officer (Feb. 1992), Department of Medicine, Nassau County Medical Center

Best Intern of the Year (1991-1992), Department of Medicine, Nassau County Medical Center

Resident of the Year (1993-1994), Department of Medicine, Nassau County Medical Center.

NIH Fellowship Training Grant (1995-1997)

WSU Teaching Award 2005

**SERVICE:
Patient Care**

10/97-3/98 Nephrology Consult and Outpatient Dialysis,
Veterans Hospital Medical Center, 2 months

11/97-12/98 Outpatient Nephrology Clinic, Harper Professional Building

1/98-12/98 Outpatient Dialysis,
Hemacare Dialysis Unit, 1 month

Nephrology Consult and Outpatient Dialysis,
Veterans Hospital Medical Center, 3 months

Nephrology inpatient service, 3 weeks

1/99- 6/99 VA Nephrology Outpatient Clinic, half-day a week

1/99-12/99 Nephrology Consult and Outpatient Dialysis,
Veterans Hospital Medical Center, 1 month
Nephrology Consult, Harper Hospital and DRH, 1 month and
3 weeks
Nephrology inpatient service, 1 month
A Nephrology Outpatient Clinic, half-day a week

1/00-12/00 Nephrology Consult and Outpatient Dialysis,
Veterans Hospital Medical Center, 2.0 months
Nephrology inpatient service, 1 month
A Nephrology Outpatient Clinic, half-day a week

1/01-12/01 Veterans Hospital Medical Center, 1.5 months
Nephrology Inpatient Service, 1 month
A Nephrology Outpatient Clinic, half-day a week

1/02-12/02 Veterans Hospital Medical Center, 1.5 months
Nephrology Inpatient Service, 2 months
A Nephrology Outpatient Clinic, half-day a week

1/03-12/03 Nephrology Consult Service 2 months
Nephrology Inpatient Service, 1 months
A Nephrology Outpatient Clinic, half-day a week

**1/04-12/04 Nephrology Consult service 2 months
Nephrology inpatient service 2 months
General medicine, Veterans Hospital, 1 month
Nephrology Outpatient Clinic half-day a week**

**1/05-12/05 Nephrology Consult service 1 months
Nephrology inpatient service 3 months
General medicine, Veterans Hospital, 1/2 month**

VA Nephrology 3 months
Nephrology Outpatient clinic half day a week

1/06-12/06

Nephrology Consult service, 3 months
Nephrology Inpatient service, 3 months
VA nephrology, 2 months
General Medicine, Veterans Hospital, 1 month
Nephrology Outpatient Clinic, 2 half days a week

Journal Activity

2001 Reviewed manuscript for American Journal of Physiology

2002 Reviewed manuscript for American Journal of Physiology

National

2003 External Reviewer for Career Development Application for Department of Veteran's Affairs Research Service.

State and Local Board Committees

1999-Present **Research and Fellowship Review Committee National Kidney Foundation of Michigan, Inc.**

2006 **WSU Department of Internal Medicine Promotion and Tenure Committee, Advisory Committee Representative**

Wayne State University School of Medicine

6/00 WSU-SOM OSCE

1/12/01 Judge for Annual Medical Student Research Symposium at WSU

4/03 Judge for Annual Resident Fellow Research Day

Other:

6/01 & 6/02& 6/03 Lecture for OHEP-Intensive Board Review Course for Internal Medicine

Divisional

7/00-6/01	Coordinator of Divisional Journal Club
6/00-6/02	Mentor for Nephrology Fellow-Dr Luthra
1/01-12/02	Regular faculty participation at bimonthly research meeting
7/01-6/03	Mentor for Nephrology Fellow-Dr Thallapureddy
7/01-6/03	Coordinator of Divisional Basic Science Lecture
7/02-7/03	Mentor for Nephrology Fellow-Dr Patel
7/03-6/05	Coordinator of Divisional Journal Club
7/04-6/06	Mentor for Dr Kosgi
6/05-present	Coordinator of Divisional Renal Biopsy Conference
2/07-Present	Research Mentor for Dr Zegarra

TEACHING:

1995-1997	Emory University School of Medicine
1997-Present	Wayne State University School of Medicine

Courses at Wayne State University

Medical Students

1997-2005	Year II, Physical Diagnosis (1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005)
1999-Present	Year II, Renal Pathophysiology Seminars (1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007), 9 hours each year
2/01	Year II, Renal Pathophysiology Lecture (Disorder of potassium metabolism)
3/02	Year II Renal Pathophysiology Lecture (Disorder of Calcium Metabolism)
2/03	Year II Renal Pathophysiology Lecture (Disorder of Calcium Metabolism)
2/04	Year II Renal Pathophysiology Lecture (Disorder of

2/05	Calcium Metabolism) Year II Renal Pathophysiology Lecture (Disorder of Calcium Metabolism)
2/06	Year II Renal Pathophysiology Lecture (Disorder of Calcium Metabolism)
2/07	Year II Renal Pathophysiology Course Director Year II Renal Pathophysiology Lecture (Disorder of Calcium Metabolism) Year II Renal Pathophysiology Lecture (Clinical Aspects of glomerular disease)

Graduate Students

11/05-12/05	WSU Advanced Renal Physiology Course (PSL 7550): 3 sessions: 1) Background on calcium and role of cholecalciferol and PTH 2) Discussion on calcium and role of cholecalciferol and PTH 3) Student presentations/grading of paper
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Nephrology Fellows

9/99-12/99	Professor Rounds (3/year)
1/00-12/00	Professor Rounds (4/year)
1/00-12/00	Nephrology Inpatient 1 month / year VA Nephrology 2 months / year Nephrology Fellow Biopsy Instruction 6/year
1/01-12/01	Nephrology Inpatient 1 month / year VA Nephrology 2 months / year Nephrology Fellow Biopsy Instruction 6/year
1/01-12/01	Professor Rounds (4/year)
1/02-12/02	Veterans Hospital Medical Center, 1.5 months Nephrology Inpatient Service, 2 months Nephrology Fellow Biopsy Instruction 6/year Professor Rounds (4/year)
1/03-12/03	Nephrology Consult Service 2 months Nephrology Inpatient Service, 1 months Nephrology Fellow Biopsy Instruction 6/year Nephrology Fellow emergency lecture: Extracorporeal management of toxins Professor Rounds (2/year)
1/04-12/04	Nephrology Consult Service 2 months Nephrology Inpatient Service, 2 months Nephrology Fellow Biopsy Instruction 20/year Nephrology Fellow emergency

**Lecture: Extracorporeal management of toxins
Professor Rounds (2/year)**

1/05-12/05
Nephrology Consult Service 1 month
Nephrology Inpatient Service, 3 months
Nephrology Fellow Biopsy Instruction 15/year
**Nephrology Fellow emergency lecture:
Extracorporeal management of toxins**
Professor Rounds (4/year)

1/06-12/06
Nephrology Consult Service 3 months
Nephrology Inpatient Service, 3 months
VA Nephrology, 2 months
Nephrology Fellow Biopsy Instruction 24/year
**Nephrology Fellow emergency lecture:
Extracorporeal management of toxins**

Internal Medicine Residents

1/01-12/01 Medical Resident clinic supervision, 1 month

1/02-12/02 Medical Resident clinic supervision, 3 months
Professor Rounds (1/year)

1/03-6/03 Medical Resident clinic supervision

1/03-12/03 Nephrology Consult Service 2 months
Nephrology Inpatient Service, 1 month

12/03 Medical resident nephrology didactic lecture, Fluid
compartment, edema and diuretics; Hydrogen
homeostasis, metabolic acidosis and metabolic alkalosis
edema and diuretics

5/03 Medical resident noon teaching conference: Interstitial
Nephritis and vascular diseases of the kidney

1/04-5/04
Nephrology Consult service 2 months
Nephrology Inpatient service, 2 months
General Medicine, Veterans Medical Center, 1 month

5/04
**Medical resident noon teaching conference: Electrolyte
disorders**

1/05-12/05
Nephrology Consult service 1 months
Nephrology Inpatient service, 3 months
**General Medicine, Veterans Medical Center, 1/2
Month**

7/05

**Medical resident AM nephrology lecture: Disorders of potassium metabolism
Medical resident AM nephrology lecture: HTN**

1/06-12/06

Medical Resident AM nephrology lecture, 17 hours: Hypertension, Potassium metabolism: hypokalemia, hyperkalemia, Hydrogen homeostasis: metabolic acidosis and alkalosis,

CKD: anemia, calcium/phosphorus balance and Renal Osteodystrophy

**Medical Resident Noon Lecture: Glomerular Disease
Supervision of residents in General Nephrology
Clinic, one resident in one half day clinic per week**

PA Students

10/99

Wayne State University PA Nephrology Section (Acute Renal Failure)

11/01 & 11/02 & 10/03

Wayne State University PA Nephrology Section (Acute Renal Failure)

10/05

Wayne State University PA student 702 Renal Unit , 5 lectures, 2 hours each (UTI and pyelonephritis, Cystic kidney disease, renal stones, Acute renal failure, Hypertension and the kidney, renovascular hypertension, diabetic nephropathy and interstitial nephritis)

10/

Wayne State University PA student 702 Renal Unit, 1 lecture for 2 hours (Hypertension and the kidney)

Departmental/Divisional

October 1997	Research Conference, Volume Sensitive Intracellular Calcium stores
April 1998	Nephrology Basic Science Lecture, Regulation of Intracellular Calcium
January 1999	Nephrology Basic Science Lecture, Regulation of Mesangial Contraction
September 1999	Divisional Research Conference, Mechanosensitive Intracellular Calcium stores in Vascular Smooth Muscle Cells
October 1999	Nephrology Basic Science Lecture, Mediators of Diabetic Glomerulosclerosis
March 2001	Nephrology Basic Science Lecture, Polycystin
February 2001	Divisional Research Conference, Mechanosensitive Intracellular Calcium stores in Vascular Smooth Muscle Cells
November 2001	Nephrology Basic Science Lecture, NaK2Cl
February 2002	Divisional Research Conference, Effect of mechanical stimulation on NKCC1
March 2003	Divisional Research Conference, Stretch-induced activation of NKCC1
March 2003	Nephrology Basic Science Lecture, Renal potassium channels
December 2003	Nephrology Basic Science Lecture, Calcium Sensing Receptor
May 2004	Divisional Research Conference, Stretch-induced activation of NKCC1 in vascular smooth muscle cells
October 2004	Nephrology Basic Science Lecture, Role of podocyte slit diaphragm in proteinuria
September 2005	Nephrology Renal Biopsy Conference, Introduction to renal pathology

September 2005

Nephrology Journal Club, Introduction to how to read a journal Club

October 2005

Nephrology Basic Science Lecture: Polycystin

GRANT SUPPORT:

Approved and Funded

1. FMRE Funded Seed Money Grant Program, PI: **M Jena**, \$25,000. "Mechanosensitive Intracellular Calcium Stores" January 1, 1998 - December 31, 1998
2. National Kidney Foundation of Michigan Grant, PI: **M Jena**, \$25,000. "Mechanosensitive Intracellular Calcium Stores" July 1, 1998 - June 30, 1999
3. VA Cooperative Study # 440 (Anti-thrombotic Agents in the Prevention of Hemodialysis Access Thrombosis), Sub PI. 1/99-10/99.
4. FMRE. \$25,000, 1/1/00-12/30/00. Na-K-ATPase stimulation of Angiotensin II. Collaborating Investigator
5. Merit Review Entry Program, PI: M Jena, \$165,000. "Mechanosensitive Intracellular Calcium Stores" October 1, 1999 – September 30, 2002
6. AMGEN. A study evaluating the initiation and Titration of Fixed Doses of Novel Erythropoiesis Stimulating protein (NESP) Therapy in Subjects with Chronic Renal insufficiency. Sub PI 2/2001-2/2002.
7. FMRE Funded Seed Money Grant Program, PI: M Jena Mohanty, \$28,324. "Effect of cyclical stretching on the NKCC1" January 1, 2002 - December 31, 2002.
8. **VA Cooperative Study # 453. Homocystinemia in Kidney and End Stage Renal Disease Study. Sub PI 11/2000-present**
9. **NIH (RO1) Co-investigator (5% effort), \$600,000. "Mechanism of renal Na⁺ pump stimulation by angiotensin II". July 2002-June 2005.**
10. **National Kidney Foundation of Michigan Grant, PI: M Jena Mohanty, \$25,000. "Mechanism of stretch-induced activation of NKCC1." July 1, 2003 - June 30, 2004"**
11. **NIH, Co-investigator, Chronic Renal Insufficiency Cohort Study, Co-investigator. 2005-present**
12. **Exelixis Inc., PI: M Mohanty, \$112, 234. A Randomized, Double-Blinded, Placebo-Controlled Study of XL784 Administered Orally to Subjects with Albuminuria due to Diabetic Nephropathy. 2006-present.**
13. **Research Advisor for Nephrology Fellow Dr Zegarra: Creation of Database**

of all patients who underwent renal biopsy by WSU physicians.

- 14. Research Advisor for Nephrology Fellow Dr Zegarra: Creation of database of all patients co-infected with hepatitis C and HIV who underwent a renal biopsy by WSU physicians.**

Not funded

- 1. National Kidney Foundation of Michigan Grant, PI: M Jena Mohanty, \$28,474. "Effect of stretch on NaK2Cl cotransporter" July 1, 2002 - June 30, 2003.**
- 2. VA Merit Review. PI M Jena Mohanty, \$386,300. "Effect of mechanical stimulation on Na-K2 Cl cotransporter" October 02-September 06**
- 3. VA Merit Review. PI M Jena Mohanty, \$397,200. "Effect of mechanical stimulation on Na-K2 Cl cotransporter" October 03-September 06.**
- 4. American Heart Association, Mid-west Affiliate, Grant-in-Aid. PI M Jena Mohanty, \$ \$110,000. "Mechanism of Stretch –induced activation of the Na-K-2Cl cotransporter"7/1/03-6/30/2005.**
- 5. VA Merit Review. PI M Jena Mohanty, \$397,200. "Effect of mechanical stimulation on Na-K2 Cl cotransporter" October 04-September 07.**
- 6. VA Merit Review. PI M Jena Mohanty, \$406,200. "Mechanism of stretch-induced activation of NKCC1" October 05-September 08.**

PUBLICATIONS:

Original Observations:

- 1. *Jena M*, Monroe J. and O'Neill W. C., "A Mechanosensitive IP₃-Insensitive Ca²⁺ Store in Vascular Endothelial Cells, *American Journal of Physiology*. 273:C316-322, 1997.**
- 2. Akar F, Skinner E, Klein JD, *Jena M*, Paul RJ and O'Neill WC. "Vasoconstrictors and Vasodilators reciprocally regulate the Na-K-2Cl Cotransporter in Rat Aorta. "American Journal of Physiology. 276: C1383-C1390,1999.**
- 3. *Mohanty MJ*, Ye M, Li X, Rossi NF. Hypotonic swelling-induced Ca²⁺ release by an IP₃ insensitive Ca²⁺ store. *American Journal of Physiology*. 281:C535-C562, 2001**
- 4. *Mohanty MJ* and Xingli Li. Stretch induced Ca²⁺ release by an IP₃ insensitive store. *American Journal of Physiology*. 283(2):C456-62, 2002.**
- 5. Yingst DR, Massey K, Rossi NF, *Mohanty MJ* and Mattingly R. Angiotensin II directly stimulates activity and alters the phosphorylation of Na-K-ATPase in rat proximal tubules with a rapid time course. *American Journal of Physiology* 287(4): F713-21, 2004.**

6. Mohanty MJ and Shi T. Stretch-induced activation of NKCC1 in vascular smooth muscle cells. American Journal of Physiology (Cell Physiology). Submitted

Case Reports:

1. **Jena M.** and Mitch W. E., “Rapidly Reversible Acute Renal Failure from Ureteral Obstruction in Pregnancy”, *American Journal of Kidney Disease*, 28: 457-460, 1996.
2. Nzerue, C., Schlanger, L., **Jena M.**, Hewan-Lowe K and Mitch W.E., “Granulomatous Interstitial Nephritis and Uveitis Presenting with Salt-Losing Nephropathy, *American Journal of Nephrology*, 17:462-465, 1997.
3. Velusamy L and **Mohanty MJ.** Moraxella and Kluyvera Peritonitis in a Continuous Ambulatory Peritoneal Dialysis Patient with Human Immunodeficiency Virus. *Perit Dial Int*, 23(6):611-612, 2003.

PUBLISHED ABSTRACTS:

1. **Jena M.** “A Mechanosensitive Intracellular Calcium Store in Vascular Smooth Muscle Cells” *Journal of American Society of Nephrology*. 9: A1729, 1998.
2. **Jena M,** Ye M. “ An Inositol 1,4,5 triphosphate insensitive, Mechanosensitive Intracellular Calcium Store in Vascular Smooth Muscle Cells.” *Journal of American Society of Nephrology*. 1999.
3. **Jena M,** Ye M, Sowers JR and. Rossi NF “An Inositol 1,4,5 triphosphate insensitive, Mechanosensitive Intracellular Calcium Store in Vascular Smooth Muscle Cells.” *The FASEB Journal*. 2000.
4. **Mohanty MJ.** “An Inositol 1,4,5 triphosphate insensitive, stretch-sensitive intracellular Calcium Store in Vascular Smooth Muscle Cells.” *The FASEB Journal*. 2001.
5. **Mohanty MJ.** “Cyclical stretching increases the activity of the Na-K-2Cl cotransporter”. *The FASEB Journal* 2002.
6. **Mohanty MJ** and Shi T. Effect of long term cyclical stretch on the Na-K-2Cl cotransporter in vascular smooth muscle cells. *The FASEB J* 2003.
7. **Mohanty MJ,** Shi T, Chen H and Rossi NF. Greater increase in NKCC1 activity in response to Cyclical Stretch in Genetically Hypertensive Rats. *JASN*, 2003.
8. **Mohanty MJ** and Shi T. **Stretch-induced activation of NKCC1 via increased phosphorylation. THE FASEB J, 2004.**
9. **Mohanty MJ,** Shi T, Chen H and Rossi NF. **Greater increase in NKCC1 activity in response to cyclical stretch in genetically hypertensive rats but not in rats with secondary hypertension. JASN, 2004.**

10. Kosgi S, Nimmagada S, Mohanty MJ, Edelstein M, Migdal S and Abu-Hamdan D. Macrocytosis in Dialysis Patients. JASN 2005

PRESENTATIONS:

Invited and/or refereed international or national meetings:

1. **Jena M**, Minore JF and O'Neill WC. "A mechanosensitive, inositol 1,4,5 triphosphate-insensitive calcium stores in vascular endothelial cells" Journal of American Society of Nephrology. 7:1678,1996. Presented in ASN meeting in 1996.
2. **Jena M**, Klein JD and O'Neill WC. "NO inhibits Na-K-2Cl cotransporter activity and phosphorylation in vascular smooth muscle via cGMP independent pathway" Journal of American Society of Nephrology. 8: A1526, 1997. Presented in ASN meeting in 1997.
3. **Jena M**, Ye M, Sowers JR and Rossi NF "An Inositol 1,4,5 triphosphate insensitive, Mechanosensitive Intracellular Calcium Store in Vascular Smooth Muscle Cells." Presented in Experimental Biology in April 2000.
4. **Mohanty MJ**. "An Inositol 1,4,5 triphosphate insensitive, stretch-sensitive intracellular Calcium Store in Vascular Smooth Muscle Cells." Presented in Experimental Biology in April 2001.
5. **Mohanty MJ**. "Cyclical stretching increases the activity of the Na-K-2Cl cotransporter". Presented in Experimental Biology in April 2002.
6. **Mohanty MJ** and Shi T. Effect of long term cyclical stretch on the Na-K-2Cl cotransporter in vascular smooth muscle cells. Presented in Experimental Biology in April 2003.
7. **Mohanty MJ**, Shi T, Chen H and Rossi NF. Greater increase in NKCC1 activity in response to Cyclical Stretch in Genetically Hypertensive Rats. Presented in ASN meeting 2003.
8. **Mohanty MJ** and Shi T. **Stretch-induced activation of NKCC1 via increased phosphorylation. Presented in Experimental Biology in April 2004.**
9. **Mohanty MJ**, Shi T, Chen H and Rossi NF. **Greater increase in NKCC1 activity in response to cyclical stretch in genetically hypertensive rats but not in rats with secondary hypertension. Presented in ASN meeting 2004.**

Regional Meeting:

1. **Potu S and Mohanty MJ**. "Extracolonic manifestations of *Clostridium difficile*" Presented in the Society of General Internal Medicine Midwest Regional meeting in September 2005.

Invited Lecture:

1. Mechanosensitive Intracellular Calcium Stores. Research Seminar. Henry Ford

Hospital. 1998

2. Hypertension, kidney and intracellular calcium. The Third Annual Urban Hypertension Update for Nurses and Allied Health Professionals. 4/8/2000
3. Mechanosensitive Intracellular Stores in Vascular Smooth Muscle Cells. VA Research Seminar, 3/01

4. Acute Kidney Injury in the ICU, An Update. Pulmonary Grand Rounds, 3/2006

Community Service

10/02 Multicultural Workplace Award for participation in the Community Health and Hypertension Research Education and Screening Team