

HARVARD MEDICAL SCHOOL CURRICULUM VITAE

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Place of Birth: Mumbai, India

Education

1998	BS	Pharmacy	Poona College of Pharmacy, Pune, India
2003	PhD	Toxicology (Harihara M. Mehendale)	Univ. of Louisiana at Monroe, Monroe, LA

Postdoctoral Training

07/2003-10/2006	Post-doc	Nephrology (Joseph V. Bonventre)	Brigham and Women's Hospital, Harvard Medical School, Boston, MA
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Faculty Academic Appointments

07/2005 - 09/2009	Instructor	Medicine	Harvard Medical School
10/2009 - 12/2014	Assistant Professor	Medicine	Harvard Medical School
07/2011 - 12/2014	Assistant Professor	Environmental Health	Harvard School of Public Health, Boston, MA
10/2011-	Associate Faculty	Center for Environment	Harvard University, Cambridge, MA
10/2012-	Affiliate Member	Harvard Stem Cell Institute	Harvard University, Cambridge, MA
1/2015 -	Associate Professor	Medicine & Environmental Health	Harvard Medical School & Harvard School of Public Health

Appointments at Hospitals/Affiliated Institutions

11/2006-	Associate Biologist	Department of Medicine	Brigham and Women's Hospital
10/2009-	Member	Harvard National Institute	Harvard School of Public Health

of Environmental Health
Sciences (NIEHS) Center

Major Administrative Leadership Positions

Local

2011, 2012	Director	Molecular Signals to Understand Exposure Biology	Department of Environmental Health, Harvard School of Public Health
		Graduate-level course, EH 527/BPH 208qc, 2.5 credits, offered every Thursday in Spring with 110-min lectures for 15 weeks.	
2011-	Director	Understanding Biomarker Science: From Molecules to Images	Harvard Catalyst, Harvard Clinical and Translational Science Center, Harvard University
		4-day course for students, residents, fellows, professional staff, and faculty offered in Spring each year.	
2012-	Director	Principles of Toxicology (Molecular & Translational Toxicology)	Department of Environmental Health, Harvard School of Public Health
		Graduate level course, EH 504 / BPH 713 / BPH 215, 5 & 2.5 credits, offered every Monday and Wednesday in Fall with 110-min lectures for 15 weeks.	
2013-	Head	Systems Toxicology Program	Harvard Program in Therapeutic Sciences (HiTS), Harvard Medical School
2015-	Director	Masters of Medical Sciences in Therapeutic Sciences	Harvard Medical School
		This is a new 2-year Masters degree program with 64 credits (32 obtained from courses and 32 obtained from research experience). This is approved by the education committee at HMS and will start from September 1, 2017.	

Committee Service

Local

2012-2013	Reviewer	Graduate Admissions Committee, Ph.D. Program in Biological Science in Public Health, Harvard School of Public Health	
2012-2013	Member Reviewer	Regulatory Science Advisory Committee, Harvard Medical School Harvard-Massachusetts Institute of Technology (MIT) Health Science Technology (HST) MD student thesis for Gayathree Murugappan, "Nanoparticle-Chaperoned Urinary Reporters for Noninvasive Monitoring of Hepatic Fibrosis"	
2013	Reviewer	Prequalifying Examination for Leah Brace, graduate student in biological sciences in public health program, Harvard School of Public Health	
2015-	Member	Clinical Research Orientation Program for PhD's (CROPP), Harvard Clinical and Translational Science Center (Harvard Catalyst)	

<i>Regional</i>		
2010-2012	Councilor	Northeast Chapter of the Society of Toxicology
<i>National</i>		
2006-2009	Member	Career Resource and Development Committee, Society of Toxicology
2011-2014	Member	Continuing Education Committee, Society of Toxicology
2015-2020	Member	Scientific Program Committee, Society of Toxicology
<i>International</i>		
2014	Reviewer	Master's Degree Program on Biomarkers, The University of Skövde, Sweden
2014-	Member	Health and Environmental Sciences Institute (HESI), Biomarkers of Nephrotoxicity Committee, Washington, DC

Professional Societies

1999-	Member	Society of Toxicology (SOT)
2007		Chair, Symposium "Mechanistic Biomarkers and Innovative Methodologies to Detect Acute Kidney Injury" at 46 th Annual Meeting of SOT, Charlotte, NC
2007		Chair, "Grantsmanship Forum" at 46 th Annual Meeting of SOT, Charlotte, NC
2008		Chair, Workshop "Professional career development as a toxicologist" at 47 th Annual Meeting of SOT, Seattle, WA
2009		Chair, Workshop "The future of environmental health science: Featuring NIEHS funded early career investigators" at 48 th Annual Meeting of SOT, Baltimore, MD
2012		Chair, Continuing Education Course "Applications of Biomarkers in the Assessment of Health and Disease" at 51 st Annual Meeting of SOT, San Francisco, CA
2013		Chair, Continuing Education Course "T4: Tools and Technologies in Translational Toxicology at 52 nd Annual Meeting of SOT, San Antonio, TX
2014		Chair, Continuing Education Course "Translational Biomarkers in the Assessment of Health and Disease at 53 rd Annual Meeting of SOT, Phoenix, AZ
1999-2003	Member	Sigma Xi Scientific Research Society
1999-2008	Member	American Society of Pharmacology and Experimental Therapeutics
2003-	Member	Northeast Chapter of Society of Toxicology
2005-	Member	American Society of Nephrology
1999-2003	Member	American College of Toxicology

Grant Review Activities

<i>Reviewer</i>	
2011	Medical Research Council, London, UK
2011	Harvard School of Public Health, National Institute of Environmental Health Sciences (NIEHS) Center Pilot Grant, Boston, MA
2012	North West Cancer Research Fund Scientific Committee, Liverpool, UK
2013	King Abdullah International Medical Research Center (KAIMRC), Riyadh, Saudi Arabia
2014	NIH-NIDDK Ancillary R01, Ad-Hoc Reviewer for study section ZDK1 GRB-G (J4)
2015	NIH-NIDDK, Ad Hoc member for the Pathobiology of Kidney Disease (PBKD) study section

2015	NIH-NIDDK, Ad Hoc member for study section ZDK1-GRB-G-M5
2015	European Commission's Horizon 2020 Research Initiative call topic PHC-33-2015 (New approaches to improve predictive human safety testing)
2015	NIH-NIDDK, Innovative Research in HIV in KUH (R01), ZDK1 GRB-G (O3)
2015	European Institute of Innovation and Technology, EIT-Health, Innovation by Design and Innovation by Ideas

Editorial Activities

Ad hoc Reviewer

2007-	Toxicology, Toxicology Applied Pharmacology, Toxicological Sciences
2007-	Journal of American Society of Nephrology, Kidney International, American Journal of Physiology-Renal Physiology
2007-	FASEB journal

Other Editorial Roles

2007-2008	Guest Editor	Special issue on "Biomarkers of Toxicity" for the journal <i>Toxicology</i> . 2008; 245(3): 163-224.
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Honors and Prizes

1999	Arthur Furst Award	American College of Toxicology	Research (best student paper)
1999-2002	Travel Award	American College of Toxicology	Research
2001	Graduate Student Research Achievement Award	Univ. of Louisiana at Monroe, Monroe, LA	Research
2002	Comparative and Veterinary Specialty Section Award	Society of Toxicology	Research (best manuscript)
2002	Best Poster Award (2 nd place)	Division of Toxicology, American Society of Pharmacology and Experimental Therapeutics	Research (poster competition)
2002	Graduate Student Travel Award	Society of Toxicology	Research
2003	Mechanisms Specialty Section's Honorable Mention Award	Society of Toxicology	Research (best manuscript)
2005	Travel Award	American Society of Nephrology	Research
2005	Burdock Travel Award	Society of Toxicology	Research
2005	Risk Assessment Specialty Section Best Abstract Award	Society of Toxicology	Research
2012	American Scientist of Indian Origin Young Investigator Award	Society of Toxicology	Research
2014	Leading Edge in Basic Science Award	Society of Toxicology	Research
2015	Achievement Award	Society of Toxicology	Research
2016	Fellow	Academy of Toxicological Sciences	Research

Report of Funding

Past funding

2001-2002	PI	Sigma Xi Grants-In-Aid Student Research Award	\$ 900
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Molecular mechanisms of renal tissue repair

The objective of this study was to investigate the role of extracellular signal regulated kinase (ERK) pathway in renal tissue repair following nephrotoxicity.

- 2001-2002 PI Novartis Graduate Student Fellowship Award, Society of Toxicology \$ 16,000
Mechanisms of compensatory tissue repair following nephrotoxicity
The objective of this study was to investigate the biochemical and molecular mechanisms of S-1,2-Dichlorovinyl-L-Cysteine (DCVC)-induced nephrotoxicity and renal tissue repair.
- 2003-2005 PI National Kidney Foundation Postdoctoral Fellowship Grant \$ 80,000
Kidney injury molecule-1 (Kim-1): a biomarker for renal proximal tubular injury
The overall objective of this work was to develop a high throughput detection method for Kim-1 in rodent urine samples, validate it and characterize the specific role of Kim-1 following kidney injury.
- 2005-2008 PI American Heart Association, Scientist Development grant, SDG-0535492T \$ 180,000
Mechanisms of angiogenesis by kidney injury molecule-1
This study was aimed to characterize the molecular mechanisms involved in the proangiogenic role of KIM-1 and investigate the therapeutic aspects of blocking KIM-1 as a strategy to cure renal cell carcinoma.
- 2007-2008 Co-PI Center for Integration of Medicine and Innovative Technology (CIMIT) W81XWH-07-2-0011
Characterization and Validation of "RenAlert": A Silicon Nanowire Device For Early Diagnosis of Acute Kidney Injury
The objective of this study is to characterize and validate a silicon nanowire-based biosensor for measuring Kidney Injury Molecule-1 (Kim-1) for early diagnosis/prognosis of acute kidney injury in human urine samples
- 2007-2011 PI National Institutes of Health (NIH)/NIEHS, Pathway to Independence grant (K99/R00) ES16723 \$ 507,956
Technology and Endothelial Biology of Kidney Injury Molecule-1
The objective of this project is to develop, evaluate, and validate a novel technology for quantitating urinary Kim-1 and to investigate the role of Kim-1 in angiogenesis and tumorigenesis.
- 2009-2010 PI Harvard Catalyst Pilot, The Harvard Clinical and Translational Science Center UL1 RR025758-01 \$ 50,000
Characterization of "KIMeter": A Biosensor for Early Detection of Kidney Injury.
To develop an optical resonance based biosensor (KIMeter: Kidney Injury Meter) that will facilitate sensitive, specific, rapid, economic, high-throughput, and "online" detection of kidney injury.
- 2009-2011 PI NIH/NIEHS, Supplement to Pathway to Independence grant R00ES16723-03S1 \$ 143,794
Technology and Endothelial Biology of Kidney Injury Molecule-1
This supplement grant is consistent with the parent grant objectives and scope and allows us to investigate the role of KIM-1 in highly relevant clinical model of diabetic nephropathy that involves tubular damage and aberrant angiogenesis.

2010-2012	PI	Pfizer, Clinical Data Agreement 2009A059133 Systems Modeling of Clinical Data The objective of this study is to perform statistical analysis and systems modeling on biomarkers and clinical data collected from cross-sectional and prospective study involving patients with and without kidney injury.	\$ 96,612
2013-2014	PI	Pilot grant, Harvard-NIEHS Center for Environmental Health, Harvard School of Public Health P30ES000002 Quantitative High-Throughput Screening Platform for Predictive Kidney Toxicology The goal of this project is to develop and evaluate a cell-based screening platform for identifying potential toxic compounds using hemeoxygenase-1 as a biomarker.	\$ 25,000
2011-2016	PI	NIH/NIEHS, Outstanding New Environmental Scientist (ONES) Award Fibrinogen Signaling in Kidney Tissue Repair (R01 ES17543) The objective of this grant is to characterize the cellular and molecular mechanisms of fibrinogen signaling in kidney injury and tissue repair.	\$ 1,285,000
2014-2015	Co-PI	Contract with US Food and Drug Administration (FDA) (HHSF223201400052C) A Systems Approach to Measuring and Modeling Toxic Responses (Sorger, PI) The objective of this project is to develop and evaluate "Toxico-Response Signatures" (TRSs) and computable molecular network models (NMs) of toxic response to drugs by cells present in normal human tissues.	
2014-2016	PI	Biogen-Idec, Research Collaboration Agreement (A24378) MicroRNA Biomarkers in Acute Kidney Injury The objective of this study is to identify and evaluate the performance characteristics of urinary microRNAs as biomarkers of acute kidney injury.	\$ 345,409

Current funding

2013-2018	PI	Innovation in Regulatory Science Award, Burroughs Wellcome Fund Mapping the Biology of a Damaged Kidney Cell (BWF-1012518) The goal is to map early biological perturbations of a damaged kidney cell to develop a multidimensional toxico-response signature.	\$ 500,000
2014-2017	Co-I	NIH/NCATS subcontract A Tissue Engineered Human Kidney Microphysiological System (UH3TR000504) (Himmelfarb, PI) The objective of this project is to use systems toxicology approach and evaluate the response of kidney tubular epithelial cells to various kidney toxic chemicals when cultured in in 2D versus 3D environment.	
2014-2019	Co-I	NIH-NIDDK Novel Human Biomarkers Of Kidney Fibrosis (U01-DK104308) (Humphreys, PI) The objective of this grant is to evaluate six candidate biomarkers in humans using histologic kidney fibrosis from kidney biopsy as the gold standard.	
2015-2017	PI	Merrimack Pharmaceuticals (A24381)	\$ 94,396

A Systems Approach to Predict Toxic Responses

The objective of this study is to use multidimensional 'omics' approaches to classify and understand kidney toxicity.

2015-2017	PI	Abdul Latif Jameel World Water and Food Security Lab (J-WAFS)	\$ 50,000
		A Bioassay Based Approach to Food Safety in China	
		The objective of this study is to develop an in vitro assay for screening of food ingredients that may be toxic to the kidney.	
2016-2017	PI	Partners HealthCare Innovation	\$ 86,957
		SMOC2: A Novel Therapeutic Target for Kidney Fibrosis	
		The objective of this study is to develop a therapeutic asset to target SMOC2 for fibrosis.	
2016-2017	PI	Pfizer Inc.	\$ 137,500
		Developing Quantitative Systems Toxicology Models to Predict Kidney Toxicity	
		The objective of this is to take an 'omics' approach and identify predictive signature of kidney toxicity.	
2016-2017	PI	NIH/NIEHS	\$ 130,479
		Role of SMOC2 in Kidney Fibrosis (R56-ES17543)	
		The objective of this grant is to investigate mechanisms of SMOC2 in kidney fibrosis.	
2017-2021	PI	NIH/NIEHS	\$ 1,285,000
		Role of SMOC2 in Kidney Fibrosis (R01-ES17543-6)	
		The objective of this grant is to investigate mechanisms of SMOC2 in kidney fibrosis	

Current Unfunded Projects

2016-	PI	<u>Systems Approach to Understand Kidney Disease</u> . We have collected large data sets using cutting edge genomics and proteomics approaches following injury and or fibrosis to the mice kidney. This has allowed us to not only identify novel mechanistic pathways that can be targeted for ameliorating kidney fibrosis but also allowed us to discovery novel biomarkers that detect and predict fibrosis.
2016-	PI	<u>Small Molecule Discovery to Stimulate Kidney Tissue Repair</u> : we have conducted a small molecule screening using 1900 compounds and have identified novel small molecules that stimulate kidney tissue repair.

Report of Local Teaching and Training**Teaching of Students in Courses***HMS/HSDM Courses*

2011	Lecture on Kidney Exposure Biology in the course "Renal Pathophysiology," HST 110, 1.5 credits, offered twice/week for 15 weeks.	Harvard-MIT Health Science Technology
2014 - 2015	Lecture on "Biomarkers" in the course "Translational Pharmacology," BCMP 301qc, 2 credits.	Harvard Medical School
2014 -	Lecture on "Biomarkers in Toxicity Testing" in the course "Principles of Drug Action in Man" BCMP 309 qc, 4 Credits.	Harvard Medical School

2014 -	Lecture on “Biomarkers, Diagnostics and Risk Factors” in the course “Unmet Medical Needs and Translational Solutions,” BCMP 311qc.	Harvard Medical School
2014	Faculty Panel for Summer Interns on the topic of “An Academic Career in Science”	Harvard School of Public Health

Other Harvard Courses

2011, 2012	Lecture on Kidney Exposure Biology in the course “Molecular Signals to Understand Exposure Biology,” EH527/BPH208qc, 2.5 credits, offered every week in Spring for 15 weeks.	Harvard School of Public Health
2012-	Principles of Toxicology - Molecular & Translational Toxicology, EH504, 2.5 & 5 credits, offered every week in Fall for 15 weeks. This course is offered every year, and I give lectures in this course every year.	Harvard School of Public Health
2013	Lecture on “Introduction to Toxicology” in the course “Principles of Environmental Health,” EH202, 2.5 credits, offered every week in Spring.	Harvard School of Public Health
2013	Lecture “MicroRNAs in Health and Disease” in the course “Interdisciplinary Training in Pulmonary Sciences,” EH513, 2.5 credits.	Harvard School of Public Health
2013	Lecture on “Biomarkers” in the course “Frontiers in Biomedical Engineering and Physics,” HST500.	Massachusetts Institute of Technology

Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)

2009	Panel discussion on mentorship for junior fellows in the Clinical and Research Fellows Forum	Boston Children’s Hospital 1-hour session
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Laboratory and Other Research Supervisory and Training Responsibilities

2006-	Supervision of high school students, research trainees, graduate students on rotation projects, postdoctoral fellows in teaching lab techniques and protocols, conducting research, experimental design, analysis and interpretation of the data, trouble shooting, manuscript preparation, preparation of grant proposals, career development. Laboratory of Kidney Toxicology and Regeneration, Brigham and Women’s Hospital, Boston, MA.	Varied levels of mentorship from daily to weekly, lasting from few months to several years
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Formally Supervised Trainees and Faculty

2006-2008 Research Technician	Fitz B. Collings, J.D. / Associate, Sidley Austin LLP, Washington, DC While in the lab, Fitz finished his A.L.M in Biotechnology from Harvard Extension School, published 5 manuscripts. After training in my lab, Fitz pursued a law degree at William and Mary Law School, Williamsburg, VA, and he now works for a global law firm.	
2006-2008 Research Fellow	Michael A. Ferguson, M.D. / Instructor, Boston Children’s Hospital, Harvard Medical School, Boston, MA Received National Kidney Foundation fellowship, published 4 manuscripts and 3 book chapters.	
2008, 2010	Yizhuo Wang / Microsoft Corporation, Seattle, WA.	

Undergraduate Student	Came to the laboratory as a high school student and then as an undergraduate student on an summer undergraduate research fellowship from California Institute of Technology, Pasadena, CA. Published one manuscript.
2008-2009 Research Technician	Matthew E. Clement, A.L.M / Scientist, Novartis Institute of Biomedical Research, Cambridge, MA. While in the lab, Matt finished his A.L.M in Biotechnology from Harvard Extension School, published 2 manuscripts.
2009-2010 Postdoctoral Fellow	Victoria Ramirez, Ph.D. / Biomedical Investigator, Instituto de Investigaciones Biomédicas, Universidad Nacional Autónoma de México, Mexico City, Mexico. Published 5 manuscripts.
2009-2010 Research Fellow	Marwa El Sabbahy, M.D. / Resident, Lahey Hospital and Medical Center, Burlington, MA Published 1 manuscript.
2007-2011 Research Technician	Aparna Krishnamoorthy, M.S. / Graduate student, University of California at Berkeley, Berkeley, CA. Published 2 first-authored manuscripts and one co authored manuscript.
2010-2012 Postdoctoral Fellow	Dana Hoffmann, Ph.D. / Global Toxicology Manager, Sandoz, Austria. Published 3 manuscripts, won "Renal Toxicology Award" at the Society of Toxicology Meeting in March 2011.
2010-2015 Postdoctoral Fellow	Amrendra Kumar Ajay, Ph.D. / Postdoctoral Fellow, Renal Division, Brigham and Women's Hospital. Published 3 first-authored manuscripts and 1 second-authored manuscript. Won best abstract award from American Scientists of Indian Origin in America (ASIOA) specialty section at the Society of Toxicology meeting in 2013 and 2015. Won best paper of the year award from Molecular & Systems Biology Specialty Section and also won second place award from the Drug Discovery Specialty Section at 2015 Society of Toxicology meeting.
2011-2012 Research Trainee	Janani Saikumar, B.S. / Graduate student, University of Pennsylvania, Philadelphia, PA Worked in the lab for 18 months, published 2 first-authored manuscripts and 2 co-authored manuscripts. Received Howard Hughes Medical Institute's graduate fellowship at University of Pennsylvania.
2011-2014 Postdoctoral Fellow	Florin Craciun, M.D., Ph.D., Genetics and Genomics, Boston University School of Medicine, Boston, MA. Published 2 first-authored manuscripts.
2012-2013 Research Trainee	Krithika Ramachandran, B.S. / Graduate Student, Northwestern University, Chicago, IL. Worked in the lab for 18 months, published 1 first-authored manuscript and 1 co-authored manuscript.
2012-2013	Esther Gottwald, M.S. / Graduate Student, University of Zurich, Zurich, Switzerland.

Masters Student	Conducted a master's thesis project in my laboratory. Published one co-authored paper.
2012-2014	Kathryn Pellegrini, Ph.D., / Senior Postdoctoral Fellow, Emory Univ, School of Medicine, Atlanta, GA.
Postdoctoral Fellow	Published 2 manuscripts as first author and one as a co-first author.
2012-2014	Melanie Adler, Ph.D., / Manager Nonclinical & Clinical Affairs, PharmaLex GmbH, Friedrichsdorf, Germany.
Postdoctoral Fellow	Won Colgate Palmolive Postdoctoral Fellowship Award two years in a row from the Society of Toxicology in 2012 and 2013. Won John Doull Award at the Society of Toxicology meeting, March 2014.
2012-2014	Oana Nicoara, M.D., Pediatric Nephrologist, Medical University of South Carolina, Charleston, SC.
Research Fellow	Performed her 2 years of research fellowship in the lab and completed one year of clinical fellowship from Boston Children's Hospital. Presented 2 abstracts and co-authored a manuscript.
2013-2015	Shreyas Jadhav, Ph.D., Postdoctoral Fellow Tufts Medical Center, Boston, MA.
Postdoctoral Fellow	Published one first-authored publication.
Current Trainees	
2013- Postdoctoral fellow	Susanne Ramm, Ph.D., Toxicology, University of Wuerzburg, Wuerzburg, Germany. Published two first authored publications. At the annual meeting of Society of Toxicology in 2015, Dr. Ramm won the following awards: 1) MB Research Award for Distinction in Practical In Vitro and Alternative Toxicology Methods; 2) Third place Renal Toxicology Award competition from Mechanisms Specialty Section. At the annual meeting of Society of Toxicology in 2016, Dr. Ramm won an award for Exemplary Science from the Regulatory and Safety Evaluation Specialty Section.
2014- Postdoctoral fellow	Mira Pavkovic, Ph.D., Ph.D., Biology, Department of Toxicology, Bayer Pharma AG, Wuppertal, Germany and Heinrich Heine University Duesseldorf, Germany. Received the Deutsche Forschungsgemeinschaft (DFG) postdoctoral fellowship for 2 years. At the Annual meeting of the Society of Toxicology in 2015, Dr. Pavkovic won two travel awards from Clinical and Translational Toxicology Specialty Section and from Regulatory and Safety Evaluation Specialty Section. At the annual meeting of Society of Toxicology in 2016, Dr. Pavkovic won third place Renal Toxicology Award from Mechanisms Specialty Section and a travel award from Contemporary Concepts in Toxicology: MiRNA Biomarkers for Toxicology.
2014-2016 Postdoctoral fellow	Mariana Cardenas Gonzalez, Ph.D., Toxicology, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico, Mexico. Received two postdoctoral fellowships from Harvard-Mexico Foundation and from Consejo Nacional de Ciencia y Tecnología (CONACYT) to support her stipend from 2014 to 2016. Currently a postdoctoral fellow in the laboratory.
2014-	Ramya Kalyana Kumar, B.S. Graduate Student, Univ of Michigan, Ann Arbor MI.

Research Trainee	Worked in the lab for 18 months, published 1 co-authored manuscript. Two papers as second author are being reviewed.
2015- Postdoctoral fellow	Casimiro Gerarduzzi, Ph.D., Experimental Medicine, McGill University, Montreal, Canada.
2015- Graduate Student	Cory Gerlach, Biological Sciences in Public Health, Harvard T.H. Chan School of Public Health Published one co-first-authored publication. Received STARS award from American Society of Nephrology to travel and attend the Annual Kidney Week meeting in 2015. Also received First place student award from Northeast Regional Chapter at the 2016 annual Society of Toxicology meeting.
2015- Postdoctoral fellow	Priyanka Trivedi, Ph.D., Toxicology, National Institute of Pharmaceutical Education and Research (NIPER), Mohali, India. At the annual meeting of Society of Toxicology in 2016, Dr. Trivedi won the following awards: 1) First place award from the Drug Discovery Specialty Section; 2) First place Renal Toxicology Award from Mechanisms Specialty Section; 3) Best abstract award from Association of Scientists of Indian Origin (ASIO); 4) Toxicologic and Exploratory Pathology Award for best abstract and 5) Third place award from the Molecular and Systems Biology Specialty Section.
2016- Graduate Student	Sergine Brutus, Biological Sciences in Public Health, Harvard T.H. Chan School of Public Health
2016- Research Trainee	Ashwin Iyer, B.S.
2016- Research Trainee	Vidya Chandrasekaran, M.S.
2016-2017 Postdoctoral fellow	Maria Beatriz Camargo Monteiro Caillaud, Ph.D., Endocrinology, Faculdade de Medicina da Universidade de São Paulo, São Paulo, Brazil Received the Sao Paulo Research Foundation (FAPESP) award to pursue postdoctoral fellowship abroad.
2016-2017 Visiting Professor	Olivier Barbier, Ph.D., Professor of Toxicology in the Department of Toxicology at the Cinevestav-IPN, Mexico City, Mexico
2016-2017 Visiting Scientist	Guanghai Wang, MD., Ph.D., Senior Lecturer in the Department of Occupational Health and Medicine at the Southern Medical University, Guanzhou, China
2016-2018 Postdoctoral Fellow	Akitoshi Tamura, Ph.D., Research Scientist, Sumitomo Dainippon Pharma Co., Ltd., Osaka, Japan.
2016- Postdoctoral Fellow	Vivekkumar Dadhania, Ph.D. Toxicology, University of Louisiana at Monroe, Monroe, LA

Local Invited Presentations

No presentations below were sponsored by outside entities.

- 2007 Urinary biomarkers for detection of preclinical and clinical kidney injury
Clinical Research Retreat, Renal Division, Department of Medicine, Brigham and Women's Hospital
- 2007 RenAlert: A Silicon Nanowire Biosensor for Diagnosis of Acute Kidney Injury
Center for Integration of Medicine and Innovative Technologies (CIMIT) forum, Department of Medicine, Brigham and Women's Hospital
- 2009 Bench to Bedside Detection of Kidney Injury
CIMIT forum, Massachusetts General Hospital, Boston, MA
- 2010 Kidney Toxicity Screening using Translational Biomarkers
Harvard School of Public Health, Boston, MA
- 2011 Next Generation Biomarkers for Kidney Damage
Division of Infectious Disease, Brigham and Women's Hospital
- 2011 Next Generation Biomarkers in Kidney Toxicity
Department of Environmental Health, Harvard School of Public Health, Boston, MA
- 2012 Biomarkers in Health & Disease
Biological Sciences in Public Health, Harvard School of Public Health, Boston, MA
- 2012 Kidney on a Chip for Toxicology
Kidney Program Retreat, Harvard Stem Cell Institute, Boston, MA
- 2013 Biomarkers of Kidney Disease
Environmental and Occupational Medicine and Epidemiology Program Seminar series, Harvard School of Public Health, Boston, MA
- 2013 A Two-Pronged Approach in Modernizing Toxicology
Regulatory Science Think Tank, Harvard Program in Therapeutic Science, Boston, MA
- 2014 Mechanistic Biomarkers in Kidney Damage
Renal Biology Rounds, Beth Israel Deaconess Medical Center, Boston, MA
- 2015 Mechanistic and Translational Biomarkers of Kidney Disease
Renal Grand Rounds, Massachusetts General Hospital, Boston, MA

Report of Regional, National and International Invited Teaching and Presentations

Those presentations below sponsored by outside entities are so noted and the sponsor is identified.

Regional Invited Presentations

- 2006 A Micro-bead based Assay to Quantitate Kidney Injury Molecule-1 (Kim-1) as a Biomarker for Acute Kidney Injury.
Technology forum in Longwood Medical Area, Boston, MA (Bio-Rad laboratories).

- 2006 A Microbead Based Assay to Quantitate Urinary KIM-1 as A Biomarker for Acute Kidney Injury in Preclinical and Clinical Studies.
Technology Forum in Longwood Medical Area, Boston, MA (Luminex corporation).
- 2007 Expression Profile of Urinary Biomarkers in Kidney Injury Using Microbead Based Technology.
Novartis Institute of Biomedical Research, Cambridge, MA (Bio-Rad laboratories).
- 2007 Kidney Injury Molecule-1: A Novel Biomarker for Preclinical and Clinical Nephrotoxicity.
Boston Pharmaceutical Toxicology Group, Millennium Pharmaceuticals, Cambridge, MA.
- 2008 Biomarkers of Acute Kidney Injury: from bench to bedside.
Division of Nephrology, Caritas St. Elizabeth's Medical Centre, Brighton, MA.
- 2009 KIM-1: A Qualified Biomarker of Kidney Toxicity.
Applied Pharmaceutical Toxicology, Boston, MA.
- 2011 Kidney Toxicology at the Interface of Biomarkers and Biosensors
Tufts University School of Medicine and Tufts Medical Center, Boston, MA
- 2012 KIM, KIM's friend and a New KIM
Northeast Regional Chapter of Society of Toxicology, Salve Regina University, Newport, RI
- 2014 Identification and Evaluation of Mechanistic Biomarkers
Merrimack Pharmaceuticals, Cambridge, MA
- 2014 Translational Biomarkers of Kidney Damage
Sanofi-Genzyme, Framingham, MA (Sanofi)

National Invited Presentations

- 2005 Kidney Injury Molecule-1 and 2 in Renal Injury and Repair.
The University of Louisiana at Monroe, Monroe, LA.
- 2006 A Microbead Based Assay to Quantitate Urinary KIM-1 as a Biomarker for Acute Kidney Injury in Preclinical and Clinical Studies.
Luminex corporation and Bio-Rad laboratories, Philadelphia, PA.
- 2006 Kidney Injury Molecule-1: An Early and Sensitive Biomarker of Kidney Injury Useful in Drug Screening and Predictive Toxicology.
27th Annual meeting of American College of Toxicology, Palm Springs, CA.
- 2007 Novel Methods to Quantitate Urinary Biomarkers for Early Detection of Nephrotoxicity
46th Annual Meeting of Society of Toxicology, Charlotte, NC.
- 2008 Translational Biomarkers for Early Detection of Kidney Toxicity.
US Food and Drug Administration (FDA) Critical Path Initiative, Bethesda, MD.
- 2008 Translational Biomarkers for Kidney Toxicity.
Biomarker Discovery Summit 2008, Philadelphia, PA.
- 2008 Biomarker Discovery in Nephrotoxin-Induced Acute Kidney Injury.
41st Annual Meeting of American Society of Nephrology, Philadelphia, PA.

- 2009 Translational Biomarkers for Kidney Toxicity
48th Annual Meeting of Society of Toxicology, Baltimore, MD.
- 2009 Validation of Novel Biomarkers.
27th Annual Midwest Regional Chapter's Society of Toxicology Meeting, Lincolnshire, IL.
- 2009 Validation of Novel Biomarkers of Kidney Injury.
Midwestern University, Downers Grove, IL.
- 2009 Science and Technology of Kidney Injury Molecule-1 as a Safety Biomarker.
American Association for Clinical Chemistry Annual Meeting, Chicago, IL.
- 2009 KIM-1: From Discovery & Mechanisms to Point of Care Applications.
Yale University School of Medicine, New Haven, Ct.
- 2009 KIM-1: A Qualified Safety Biomarker in Drug Development.
Pfizer St Louis Labs, Chesterfield, MO.
- 2010 Bench to Bedside Detection of Kidney Toxicity (Invited lecture and Co-Chair).
American Association for the Advancement of Science Annual Meeting, San Diego, CA.
- 2010 Next-generation tools to detect kidney damage.
Kidney Research Institute, University of Washington, Seattle, WA.
- 2011 Kidney Toxicology: At the Interface of Science and Technology for Biomarkers.
Department of Pharmacology & Toxicology, Rutgers University, Piscataway, NJ.
- 2011 Kidney Toxicology: Biomarkers to the Rescue
Department of Environmental Health, University of Washington, School of Public Health, Seattle, WA
- 2011- Lecture in "Understanding Biomarker Science: From Molecules to Images" Course
Harvard Clinical and Translational Science Center (Harvard Catalyst), Boston, MA
- Note:** *This course has been offered since 2011, and I give a lecture every year. National attendees include students, fellows, residents, professors, and professionals from the pharmaceutical and biotechnology industries, as well as entrepreneurs. The faculty also included individuals from across the U.S.*
- 2012 Kidney Safety Signal: From Identification to Point of Care Testing
51st Annual Meeting of Society of Toxicology, San Francisco, CA.
- 2012 Fibrinogen in Acute and Chronic Kidney Damage
Outstanding New Environmental Science (ONES) Awardee Symposium, National Institute of Environmental Health Sciences, Research Triangle Park, NC.
- 2012 Kidney Disease Biomarkers
National Center for Advancing Translational Sciences, Bethesda, MD
- 2012 KIM, KIM's friend and a New KIM
National Center for Toxicological Research, Pine Bluff, AR

- 2012 Career Development Panel in “Introduction To Translational Medicine” (ITTM) Course
Harvard Clinical and Translational Science Center (Harvard Catalyst), Boston, MA
- Note:** *National attendees included students, fellows, residents, professors, and professionals from the pharmaceutical and biotechnology industries, as well as entrepreneurs. The faculty also included individuals from across the U.S.*
- 2012, Lecture on “Biomarkers” in the ITTM course
2013 Harvard Clinical and Translational Science Center (Harvard Catalyst), Boston, MA
- Note:** *National attendees included students, fellows, residents, professors, and professionals from the pharmaceutical and biotechnology industries, as well as entrepreneurs. The faculty also included individuals from across the U.S.*
- 2013 Fibrinogen: A New Kid on the Block of Translational Biomarkers
52nd Annual Meeting of Society of Toxicology, San Antonio, TX.
- 2013 Fibrinogen: A Biomarker and Therapeutic Candidate in Kidney Damage
Experimental Biology 2013 meeting, Boston, MA. (national attendees)
- 2013 Non-Invasive Micro-Markers in Kidney Disease
Gordon Research Conference: Cellular and Molecular Mechanisms of Toxicity, Proctor Academy, Andover, NH. (national attendees)
- 2013 Micro RNAs: New Frontiers in Kidney Disease
Arnold O. Beckman (AOB) conference by American Association for Clinical Chemistry (AACC) and the American Society of Nephrology (ASN): “Novel Biomarkers of Kidney Disease: False Dawn or New Horizon?” Atlanta, GA.
- 2013 MicroRNAs for Diagnosis and Therapy of Kidney Disease
Annual meeting of American Society of Nephrology, Atlanta, GA.
- 2014 A Two-Pronged Approach To Modernize Toxicology
Annual meeting of Society of Toxicology, Phoenix, AZ.
- 2014 Mechanistic Biomarkers in Drug Safety
Gordon Research Conference: Drug Safety, Stonehill College, Easton, MA (national attendees)
- 2014 Translational Toxicology in the Twenty-First Century
Keynote Presentation, Annual Meeting of the Ohio Valley Society of Toxicology, Dayton, OH
- 2014 Lecture on “Biomarkers” in the course titled “Introduction to Clinical Investigation”
Harvard Clinical and Translational Science Center (Harvard Catalyst), Boston, MA
- Note:** *National attendees included students, fellows, residents, professors, and professionals from the pharmaceutical and biotechnology industries, as well as entrepreneurs. The faculty also included individuals from across the U.S.*
- 2015 Translational Biomarkers of Kidney Injury
Medical University of South Carolina, Charleston, South Carolina

- 2015 Detecting Drug Nephrotoxicity: The Kidney on a Chip
Acute Kidney Injury Symposium by University of Alabama and University of California at San Diego's joint O'Brien Center for Acute Kidney Injury Research, San Diego, CA.
- 2015 MicroRNA Profiling: Insights into AKI
Acute Kidney Injury Symposium by University of Alabama and University of California at San Diego's joint O'Brien Center for Acute Kidney Injury Research, San Diego, CA.
- 2015 Mechanistic and Translational Biomarkers of Kidney Disease
Renal Research Conference, Icahn School of Medicine at Mount Sinai, New York, NY.
- 2015 Mechanistic and Translational Biomarkers of Kidney Disease
Renal Research Conference, Stony Brook University Medical Center, Stony Brook, NY.
- 2015 A Multi-Factorial, Quantitative Approach that Integrates Diverse Data to Advance Molecular and Translational Toxicology.
Quantitative Systems Pharmacology (QSP) Congress, Boston, MA
- 2015 Micro-Markers for AKI
Annual meeting of American Society of Nephrology, San Diego, CA.
- 2016 Biomarker Science to Predict and Prevent Kidney Damage.
Alpert Medical School, Brown University, Providence, RI.
- 2016 Biomarkers and High Throughput Screening Approaches for In Vitro to Animal to Human Extrapolation of Renal Toxicity.
40th Annual Winter Meeting of The Toxicology Forum, Washington, DC
- 2016 Biomarker Science to Predict and Prevent Kidney Damage.
School of Pharmacy, University of Connecticut, Storrs, CT.
- 2016 Non invasive MiRNA Biomarkers for Kidney Disease
Cambridge Healthtech Institute's "microRNA as Biomarkers & Diagnostics meeting", April 4-5, Cambridge, MA
- 2016 Systems and Translational Approach to Understand Toxicology
Systems Pharmacology and Toxicology Keynote Speaker, T32 Systems Pharmacology and Toxicology (SPaT) Symposium, University of Arkansas for Medical Sciences, Little Rock, AR.
- 2016 Predictive Models for Kidney Toxic Compounds
Gordon Research Conference "New Frontiers for Predicting Renal Toxicity and Clearance and Applications in Precision Medicine", July 10-15, Holderness School, NH

International Invited Presentations

- 2008 Renal Toxicologic Pathology – At the interface of science and technology for biomarkers.
Society of Toxicologic Pathology India, Bangalore, India.
- 2010 Biomarkers and Biosensors to Detect Kidney Damage.
Annual Meeting of Mexican Institute of Nephrology, Acapulco, Mexico.
- 2011 Kidney Exposure Biology: Biomarkers and Biosensors to the Rescue.

Indian Institute of Technology, Mumbai, India.

- 2011 Mechanisms of Kidney Exposure Biology.
National Center for Cell Science, Pune, India.
- 2016 Biomarker Science to Predict and Prevent Kidney Damage.
Giovanni Armenise-Harvard Foundation's 16th Symposium "From Molecular Mechanisms to Precision Medicine", Italy.
- 2016 Novel approaches to predict and detect human kidney toxicity
XIV International Congress of Toxicology (ICT), Merida, Mexico.

Report of Technological and Other Scientific/Clinical Innovations

1. Methods for the treatment of kidney fibrosis. Vishal S Vaidya, Florin Craciun, Amrendra Ajay
US Patent Application
PCT/US2015/019830 pending (filed on 3/12/2015)

The team in my laboratory has discovered a panel of genes, which are upregulated at very early stages of kidney fibrosis (a central pathology in chronic kidney disease (CKD)). The increase expression of candidate proteins is detectable in urine. Accordingly, described in this patent application are methods of diagnosis and prognosing kidney fibrosis (e.g. CKD) by detecting expression of one or more of these biomarkers. Further provided herein are methods of treating kidney fibrosis (e.g., CKD) by modulating the expression of these genes.

2. Novel target for kidney fibrosis. Vishal S. Vaidya, Casimiro Gerarduzzi
US Patent Application pending (BWH-23857; filed on 2/29/2016)

The team in my laboratory has designed an RNA-based therapeutic to target SMOC2 in the kidney that results in protection from fibrosis development and progression.

3. PLD4 and its binding partner SEL1L as a novel target for fibrosis. Vishal S. Vaidya, Priyanka Trivedi
US Patent Application pending BWH-24008; filed on 05/18/2016

The team in my laboratory has designed an RNA-based therapeutic to target PLD4 in the kidney that results in protection from fibrosis development and progression.

Report of Education of Patients and Service to the Community

No materials below were sponsored by outside entities.

Educational Material for Patients and the Lay Community

- 2002 Be careful of Ephedra complications. **Vaidya VS**, Mehendale HM
The News-Star (newspaper), Monroe/West Monroe, LA. Accent on health section, p.2B.

Report of Scholarship**Peer reviewed publications in print or other media**Research Investigations

1. Apte UM, Limaye PB, Ramaiah SK, **Vaidya VS**, Bucci TJ, Warbritton A, Mehendale HM. Upregulated prometogenic signaling via cytokines and growth factors: potential mechanism of robust liver tissue repair in calorie-restricted rats upon toxic challenge. *Toxicol Sci*. 2002;69(2):448-59.
2. Anand SS, Soni MG, **Vaidya VS**, Murthy SN, Mumtaz MM, Mehendale HM. Extent and timeliness of tissue repair determines the dose-related hepatotoxicity of chloroform. *Int J Toxicol*. 2003;22(1):25-33.
3. **Vaidya VS**, Shankar K, Lock EA, Bucci TJ, Mehendale HM. Renal injury and repair following S-1, 2 dichlorovinyl-L-cysteine administration to mice. *Toxicol Appl Pharmacol*. 2003;188(2):110-21.
4. Shankar K, **Vaidya VS**, Wang T, Bucci TJ, Mehendale HM. Streptozotocin-induced diabetic mice are resistant to lethal effects of thioacetamide hepatotoxicity. *Toxicol Appl Pharmacol*. 2003;188(2):122-34.
5. Shankar K, **Vaidya VS**, Apte UM, Manautou JE, Ronis MJ, Bucci TJ, Mehendale HM. Type 1 diabetic mice are protected from acetaminophen hepatotoxicity. *Toxicol Sci*. 2003;73(2):220-34.
6. **Vaidya VS**, Shankar K, Lock EA, Bucci TJ, Mehendale HM. Role of tissue repair in survival from s-(1,2-dichlorovinyl)-L-cysteine-induced acute renal tubular necrosis in the mouse. *Toxicol Sci*. 2003;74(1):215-27.
7. Anand SS, Murthy SN, **Vaidya VS**, Mumtaz MM, Mehendale HM. Tissue repair plays pivotal role in final outcome of liver injury following chloroform and allyl alcohol binary mixture. *Food Chem Toxicol*. 2003;41(8):1123-32.
8. Shankar K, **Vaidya VS**, Corton JC, Bucci TJ, Liu J, Waalkes MP, Mehendale HM. Activation of PPAR-alpha in streptozotocin-induced diabetes is essential for resistance against acetaminophen toxicity. *FASEB J*. 2003;17(12):1748-50.
9. **Vaidya VS**, Shankar K, Lock EA, Dixon D, Mehendale HM. Molecular mechanisms of renal tissue repair in survival from acute renal tubule necrosis: role of ERK1/2 pathway. *Toxicol Pathol*. 2003;31(6):604-18.
10. **Vaidya VS**, Ramirez V, Ichimura T, Bobadilla NA, and Bonventre JV. Urinary kidney injury molecule-1: a sensitive quantitative biomarker for early detection of kidney tubular injury. *Am J Physiol Renal Physiol*. 2006;290(2):F517-F529.
11. van Timmeren MM, Bakker SJ, **Vaidya VS**, Bailly V, Schuurs TA, Damman J, Stegeman CA, Bonventre JV, and van Goor H. Tubular kidney injuring molecule-1 (Kim-1) in protein-overload nephropathy. *Am J Physiol Renal Physiol*. 2006;291(2):F456-F464.
12. Duffield JS*, Hong S*, **Vaidya VS**, Lu Y, Fredman G, Serhan CN, Bonventre JV. Resolvin D series and protectin D1 mitigate acute kidney injury. *Journal of Immunology*. 2006;177:5902-5911. *Co-first author.
13. Perez-Rojas J, Blanco JA, Cruz C, Trujillo J, **Vaidya VS**, Uribe N, Bonventre JV, Gamba G, and Bobadilla NA. Mineralocorticoid receptor blockade confers renoprotection in preexisting chronic cyclosporine nephrotoxicity. *Am J Physiol Renal Physiol*. 2007;292(1):F131-F139.
14. de Borst MH, van Timmeren MM, **Vaidya VS**, van Dalen MB, Kramer AB, Schuurs TA, Bonventre JV, Navis G, van Goor H. Induction of kidney injury molecule-1 (Kim-1) in homozygous Ren2 rats is attenuated by blockade of the renin-angiotensin system or p38 MAP kinase. *Am J Physiol Renal Physiol*. 2007;292(1):F313-F320.
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- Renal Physiol. 2007;293(4):F1272-1281.
17. Prozialeck WC, **Vaidya VS**, Liu J, Waalkes MP, Edwards JR, Lamar PC, Bernard AM, Dumont X, Bonventre JV. Kidney injury molecule-1 (Kim-1) as an early biomarker of cadmium nephrotoxicity. *Kidney International*. 2007;72(8):985-993.
 18. Espandiari P, Zhang J, Rosenzweig B, **Vaidya VS**, Sun J, Schnackenberg L, Herman E, Knapton A, Bonventre JV, Beger R, Thompson K, Hanig J. The utility of a rodent model in detecting pediatric drug-induced nephrotoxicity. *Toxicological Sciences*. 2007;99(2):637-648.
 19. van Timmeren MM, **Vaidya VS**, van Ree RM, Oterdoom LH, de Vries AP, Gans OB, van Goor H, Stegeman OA, Bonventre JV, Bakker JL. High urinary excretion of kidney injury molecule-1 (KIM-1) is an independent predictor of graft loss in renal transplant recipients. *Transplantation*. 2007;84(12):1625-1630.
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 30. Prozialeck WC, Edwards JR, Lamar PC, Liu J, Waalkes MP, **Vaidya VS**, Bonventre JV. Expression of kidney injury molecule-1 (Kim-1) in relation to necrosis and apoptosis during the early stages of Cd-induced proximal tubule injury. *Toxicol Appl Pharmacol*. 2009;238(5):306-314.
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- induced injury prior to kidney transplantation. *Am J Transplant*. 2009;9(8):1752-1759.
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 36. **Vaidya VS**, Ozer JS, Dieterle F, Collings FB, Ramirez V, Troth S, Muniappa N, Thudium D, Gerhold D, Holder D, Bobadilla NA, Marrer E, Perentes E, Cordier A, Vonderscher J, Maurer G, Goering PL, Sistare F and Bonventre JV. Kidney injury molecule-1 outperforms traditional biomarkers of kidney injury in biomarker qualification studies. *Nat. Biotechnol*. 2010;28(5); 478-485.
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- Highlight:** Kelly Lenox, Kidney toxicity screening tool developed by grantee and NTP team. *Environmental Factor* 2015 September.
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Other peer-reviewed publications

Reviews

1. **Vaidya, VS**, Bonventre JV. Mechanistic biomarkers for cytotoxic acute kidney injury. In: Expert Opinions on Drug metabolism and Toxicology. London, UK: Ashley Publications; 2006;2(5):697-713.
2. **Vaidya VS**, Ferguson MA, Bonventre JV. Biomarkers of acute kidney injury. *Annual Reviews of Pharmacology and Toxicology.* 2008;48:463-493.
3. Collings FB, **Vaidya VS**. Novel technologies for the discovery and quantitation of biomarkers of toxicity. *Toxicology.* 2008;245(3):167-174.
4. Ferguson MA, **Vaidya VS**, Bonventre JV. Biomarkers of nephrotoxic acute kidney injury. *Toxicology.* 2008;245(3):182-193.
5. Bonventre JV, **Vaidya VS**, Schmouder R, Feig P, Dieterle F. Next-generation biomarkers for detecting kidney toxicity. *Nat. Biotechnol.* 2010;28(5); 436-440.
6. Sabbahy, ME, **Vaidya, VS**. Ischemic kidney injury and mechanisms of tissue repair. *Wiley Interdiscip Rev Syst Biol Med*, 2011;3(5):606-618.
7. Champion S, Aubrecht J, Boekelheide K, Brewster DW, **Vaidya VS**, Anderson L, Burt D, Dere E, Hwang K, Pacheco S, Saikumar J, Schomaker S, Sigman M, Goodsaid F. The current status of biomarkers for predicting toxicity. *Expert Opinion on Drug Metabolism & Toxicology*, 2013;9(11); 1391-1408.
8. Saikumar J, Ramachandran K, **Vaidya VS**. Non-Invasive Micro-Markers. *Clin Chem*, 2014;60(9); 1158-1173.
9. Pavkovic M, Vaidya VS. MicroRNAs and Drug Induced Kidney Injury. *Pharmacol Ther*, 2016;163:48-57.

Non-peer reviewed scientific or medical publications/materials in print or other media

Book Chapters

1. Sheridan AM, **Vaidya VS**, Mehendale HM. Cell cycle. In: Wexler P, editor. *Encyclopedia of Toxicology.* Oxford, UK: Elsevier; 2005. p. 490-495.
2. **Vaidya VS**, Nicholson JK, Mehendale HM. Metabonomics. In: Wexler P, editor. *Encyclopedia of Toxicology.* Oxford, UK: Elsevier; 2005. p. 41-46.
3. Ferguson MA, **Vaidya VS**, and Bonventre JV. Biomarkers in acute kidney injury. In: Rosner MH and Okusa MD, editors. *Biomarkers in Renal Disease.* New York: Nova Science Publishers, Inc; 2008. p. 43-74.
4. **Vaidya VS**, Ferguson MA, Bonventre JV. Biomarkers of acute kidney injury. In: Schnellmann RG, editor. *Comprehensive Toxicology: Renal Toxicology.* Oxford, UK: Elsevier. 2010; p. 197-211.
5. Ferguson, MA, **Vaidya, VS**. Biomarkers: An Evolutionary Perspective. In: Vaidya VS and Bonventre JV, editors. *Biomarkers: In Medicine, Drug Discovery, and Environmental Health.* Hoboken, NJ: John Wiley & Sons, Inc., 2010. p 1-4.
6. Bonventre JV, **Vaidya VS**. Qualification of urinary biomarkers for kidney toxicity. In: Goodsaid F and Mattes W, editors. *The Path from Biomarker Discovery to Regulatory Qualification.* Oxford, UK: Academic Press, 2013. p. 129-137.
7. **Vaidya VS**, Mehendale HM. S-(1,2-dichlorovinyl)-L-cysteine. In: Wexler P, editor. *Encyclopedia of Toxicology*, 3rd edition. Oxford, UK: Elsevier; 2014. vol 3, p. 189-192.
8. **Vaidya VS**, Mehendale HM. Mercuric chloride. In: Wexler P, editor. *Encyclopedia of Toxicology*, 3rd edition. Oxford, UK: Elsevier; 2014. vol 3, p. 203-206.
9. **Vaidya VS**, Mehendale HM. Ephedra. In: Wexler P, editor. *Encyclopedia of Toxicology*, 3rd edition. Oxford,

UK: Elsevier; 2014. vol 3, p. 426-430.

10. Conner MW, Dorian-Conner C, **Vaidya VS**, Green LC, Golan DE. Drug Toxicity. In: Golan DE, Tashjian AH, editors. Principles of Pharmacology: The Pathophysiologic Basis of Drug Therapy. Philadelphia, PA: Lippincott Williams & Wilkins. 2016; In Press.
11. Cardenas Gonzalez M, Pavkovic M, **Vaidya VS**. Biomarkers of acute kidney injury. In: Schnellmann RG, editor. Comprehensive Toxicology: Renal Toxicology. Oxford, UK: Elsevier. 2016; In Press.

Books/Textbooks

Vaidya VS, Bonventre JV. Biomarkers in Medicine, Drug Discovery and Environmental Health. Hoboken, NJ: John Wiley & Sons Inc; 2010.

Book Reviews

1. **Vaidya VS**, Shankar K, Apte UM, Sawant SP, Limaye PB, Mehendale HM. [Review of the book Introduction to Biochemical Toxicology, by Ernest Hodgson and Robert C. Smart, 2001.] In: Int. J. Toxicol. 2001; 20(5): 331-333.
2. Apte UM, Shankar K, **Vaidya VS**, Limaye PB, Sawant SP. [Review of the book Principles and Methods of Toxicology, by Wallace Hayes, 2000.] In: Int. J. Toxicol 2001; 20(5): 333-335.

Thesis

Vaidya VS. Mechanisms of Compensatory Tissue Repair following Nephrotoxicity [dissertation]. Monroe (LA): Univer. of Louisiana at Monroe; 2003.

Abstracts, Poster Presentations and Exhibits Presented at Professional Meetings

1. Ramm, S, Adler, A and **Vaidya VS**. A multiplexed approach to predict kidney toxicity in vitro using heme oxygenase-1 and quantitative phenotypic readouts. The Toxicologist 2016; In Press.
2. Pavkovic M, Chua AS, Bijol V, Nicoara O, Cárdenas-González MC, Ramachandran K, Himmelfarb J, Waikar SS, **Vaidya VS**. Early, Sensitive and Mechanistic Detection of Drug-Induced Kidney Injury in Humans using Urinary KIM-1, miR-21, -200c and -423. The Toxicologist 2016; In press.
3. Pellegrini KL, Gerlach CV, Craciun FL, Ramachandran K, Bijol V, Kissick HT and **Vaidya VS**. Application of Small RNA Sequencing to Identify MicroRNAs in Acute Kidney Injury and Fibrosis. The Toxicologist 2016; In press.
4. Cardenas Gonzalez M, Perez I, Barbier O, Gaspar O, Medeiros M, Sabbisetti V, **Vaidya VS**. Detection of Kidney Injury in Mexican Children Exposed to Environmental Toxicants. The Toxicologist 2016; In press.
5. Trivedi PP, Kumar RK, Huber C, Nemazee D, **Vaidya VS**. Mechanistic role of phospholipase D4 in regulating kidney fibrosis. The Toxicologist 2016; In press.

Narrative

My principal effort is in basic and translational research, with the remaining time devoted to teaching and administration. We use cellular systems and mouse models, as well as human biospecimens, and apply methodologies at the interface of cell and molecular biology, systems pharmacology, and translational science in understanding kidney disease. I lead the Systems Toxicology program within the Harvard Program in Therapeutic Sciences at HMS.

I have delivered more than 70 invited and keynote lectures and written more than 75 peer-reviewed publications, with ~ **5800 citations (h-index of 37)**. Our work supported by an **NIH/NIEHS Pathway to Independence grant** and, in collaboration with the Predictive Safety Testing Consortium, led to the first kidney toxicity biomarker (Kidney Injury Molecule-1) qualified by the US-FDA and the European Medicines Agency in 2008.

In 2011, I won the **NIH/NIEHS Outstanding New Environmental Scientist (ONES) award**. The ONES-funded project not only led to the identification of urinary fibrinogen as a biomarker for early detection of kidney damage but also demonstrated the therapeutic potential of fibrinogen-derived B β ₁₅₋₄₂ peptide, which elicits 50%

protection from kidney injury. In 2013, I was selected as one of six North American scientists to win the ***Innovation in Regulatory Science Award*** from the Burroughs Wellcome Fund. The goal of this project is to develop a high-throughput predictive kidney toxicity method by using tools and technologies at the forefront of quantitative systems pharmacology. We are currently using cutting edge technologies in genomics and proteomics coupled with computational modeling to understand the distinct and common pathways regulating kidney injury versus fibrosis. In recognition of the seminal scientific contributions from our laboratory that have made a significant impact on toxicology, I was awarded the ***Leading Edge in Basic Science Award in 2014*** by the Society of Toxicology (SOT). I was also the recipient of the ***2015 SOT Achievement Award***.

I am very passionate about mentoring students and postdoctoral fellows. Apart from winning several awards at national and international meetings, successful postdocs in my lab have also been awarded fellowship grants from Society of Toxicology (2012-2014) Harvard-Mexico Foundation (2014-2016), Consejo Nacional de Ciencia y Tecnología (CONACYT) (2014-2016), Deutsche Forschungsgemeinschaft (DFG) (2016-2018). I am also very committed to teaching. I direct the course "Understanding Biomarker Science: From Molecules to Images," offered through the Harvard Catalyst. The 6th iteration of this course offered over 4 days in April 2016 was attended by over 100 participants from academia, industry, the FDA, and NIH. I also direct a 5-credit course on Principles of Toxicology-Molecular and Translational Toxicology at HSPH in the Fall (EH504). Both of these courses are very popular and earn highly favorable reviews.

I plan on continuing my efforts in innovative research and education of the next generation of scientists, with the goal of preventing and predicting kidney disease, as well as identifying novel mitigation strategies.