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Pathology Department, New York Medical College

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The Path Report

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Spotlight on Research:

Sudhir Jain, PhD

The major objective of my work is to evaluate the contributions of genetic heterogeneity in pathological conditions associated with the cardiovascular-renal systems. In particular, we study single nucleotide polymorphisms in the renin-angiotensin-aldosterone (RAA) axis with an eye towards their impact in the genesis of hypertension; our long term goal being to identify novel molecular targets in this pathway so as to facilitate the development of a "tailored" drug therapy for hypertension and associated pathologies. We have cloned and generated mice models of human angiotensinogen gene and its receptor hAT1R gene variants. We employ these animal models to dissect differential regulation of these target genes whose polymorphisms have been reported in the human population. Apart from blood pressure regulation, we have proposed the use of these animal models, with appropriate modifications, to better understand the role of RAA axis in contributing towards metabolic syndrome and vascular lesions of the brain and the kidneys. We also aim to study the neural regulation of blood pressure by the RAAS in populations demonstrating polymorphic changes in the AGT and AT1R genes.

My recent RO1 proposal (percentile score: 6) titled "*Hypertension and inflammation: novel insights from human angiotensin type 1 receptor (hAT1R) variants*" is designed to analyze how diet and age affect the cellular gene regulatory networks and alter hAT1R expression using transgenic mouse lines expressing hAT1R variants, Haplotype-I and Haplotype-II. Genetic variations that increase AT1R can cause pathological outcomes associated with renin angiotensin system (RAS) over-activity. We have found that genetic variant Haplotype-I overexpress hAT1R and is associated with hypertension in Caucasians. Since AT1R up-regulation can worsen the pathological outcomes of physiological variables like age and diet, understanding its gene- regulation has high translational value with significant clinical impact. This can function as an "early warning" towards timely and directed therapeutic intervention in patients with Haplotype-I of the AT1R gene.

You're invited!

Held in the Pathology Conference Room—BSB 414

Every Wednesday at 1:00 pm

Date	Speaker	Affiliation
30-Jan	Paul Arnaboldi, PhD	Microbiology and Immunology, NYMC
6-Feb	Zhaohui Feng, PhD,	Rutgers
13-Feb	Marcello Cassini, MD, PGY1	Pathology, NYMC
20-Feb	Dr. Yibing Qyang, PhD	Yale Univ
27-Feb	Sarwat Gilani, MD, PGY3	Pathology, NYMC
6-Mar	Dariusz Galkowski, MD, PhD	Rutgers
13-Mar	Dana Razzano, MD, PGY3	Pathology, NYMC
20-Mar	Sudhir Jain, PhD	Pathology, NYMC
27-Mar	Shamima Sultana, MD, PGY3	Pathology, NYMC
3-Apr	Ximing J Yang, MD, PhD	Northwestern Univ
10-Apr	Rugved Pattarkine, MD, PGY2	Pathology, NYMC
17-Apr	Raj Tiwari, PhD	Interim Chair Microbiology, NYMC
24-Apr	Haiyan Li, MD, PGY1	Pathology, NYMC
1-May	Rebecca Wilcox, MD	Univ Vermont
15-May	Austin Guo, PhD	Pharmacology, NYMC
22-May	Dana Razzano, MD, PGY3 Special Seminar on Global Health	Pathology, NYMC
5-Jun	Joann Sweasy, PhD	Yale
12-Jun	Malini Harigopal, MD Title: "Breast Pathology Latest Research"	Yale
19-Jun	Laura Collins, MD	BIDMC
26-Jun	Kumarasen Cooper, MBChB, DPhil, FRCPath Title: "Global Health"	UPenn

REDCap Cloud is here! Contact redcapcloud@nymc.edu with questions.

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