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.
**Held in the Pathology Conference Room—BSB 414**

**Every Wednesday at 1:00 pm**

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<td>Paul Arnaboldi, PhD</td>
<td>Microbiology and Immunology, NYMC</td>
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<td>6-Feb</td>
<td>Zhaohui Feng, PhD,</td>
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<td>13-Feb</td>
<td>Marcello Cassini, MD, PGY1</td>
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<td>20-Feb</td>
<td>Dr. Yibing Qyang, PhD</td>
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<td>27-Feb</td>
<td>Sarwat Gilani, MD, PGY3</td>
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<td>6-Mar</td>
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<td>20-Mar</td>
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<td>27-Mar</td>
<td>Shamima Sultana, MD, PGY3</td>
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<td>3-Apr</td>
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<td>Raj Tiwari, PhD</td>
<td>Interim Chair Microbiology, NYMC</td>
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<td>24-Apr</td>
<td>Haiyan Li, MD, PGY1</td>
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<td>1-May</td>
<td>Rebecca Wilcox, MD</td>
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<td>15-May</td>
<td>Austin Guo, PhD</td>
<td>Pharmacology, NYMC</td>
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<td>Special Seminar on Global Health</td>
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<td>5-Jun</td>
<td>Joann Sweasy, PhD</td>
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<td>12-Jun</td>
<td>Malini Harigopal, MD</td>
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<td>19-Jun</td>
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<td>26-Jun</td>
<td>Kumarasen Cooper, MBChB, DPhil, FRCPath</td>
<td>UPenn</td>
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*REDCap Cloud is here! Contact redcapcloud@nymc.edu with questions.*

**Contact Us:**

**John T. Fallon III, M.D., Ph.D.**  
Professor and Chairman of Pathology  
[john_fallon@nymc.edu](mailto:john_fallon@nymc.edu)  
(914) 594-4150

**Kathy Woodley**  
Department Administrator  
[kathy_woodley@nymc.edu](mailto:kathy_woodley@nymc.edu)  
(914) 594-3084

Department of Pathology—Basic Science Building  
New York Medical College  
Valhalla, NY 10595