HTRS MEMBER SPOTLIGHT:

Q&A with Dr. Evi X. Stavrou

Dr. Evi X. Stavrou is the Oscar D. Ratnoff Professor of Medicine and Hematology at Case Western Reserve University, and Staff Hematologist and Director of Anticoagulation Clinic at the Louis Stokes Cleveland VA Medical Center. She received her MD degree summa cum laude from Semmelweis University in Budapest, Hungary. On completion of her medical school training, Dr. Stavrou completed her Internal Medicine residency at Johns Hopkins University-Sinai program and Hematology-Oncology fellowship at University Hospitals Case Medical Center. Presently, Dr. Stavrou's work is focused on the Factor XII – uPAR interactome and neutrophil cell biology in health and disease. Her work has been published in premier journals including *Blood*, the *Journal of Thrombosis and Haemostasis*, *Nature Communications* and the *Journal of Clinical Investigation*. She serves as associate editor of the journal *Frontiers in Hematology* and is a Co-Chair of *Thrombosis Research* Publications Committee. Dr. Stavrou's work was funded initially through an HTRS Mentored Research Award and subsequently from the American Heart Association. Presently, Dr. Stavrou is funded by the National Institutes of Health, VA Research & Education Foundation, and VA Advanced Platform Technology Center. Her clinical duties are focused solely on patients with hemostatic and thrombotic disorders.

Q&A: GETTING TO KNOW YOU

Q: Outside of medicine, what other interests or hobbies do you pursue?

A: I am a classically trained violinist so I like to keep up, perhaps not as much as I'd hope. I also like to keep my orchids alive.

Q: If you could bring one book and one movie to a desert island, what would each be and why?

A: For a book, I would choose "The Undoing Project" by Michael Lewis because it illustrates how opposite geniuses attract and is a fantastic example of complementary collaboration among individuals. Amos and Danny completed each other scientifically to introduce the concept that psychology can be applied to Economics and human

decision-making. They are a prime example that collaboration can lead to innovative thinking and a new field of science. It is also a wonderful testament to ever-lasting friendship and a sad story, as Amos passed away before receiving the Nobel Prize that he so much deserved.

For a movie on a desert island, I would have to pick "The Sound of Music." I grew up watching it and I would need the happiness and music to remind me there are things to live for.

Q: If you could invite three people, living or dead, to dinner at your house, who would you invite?

A: I would invite people whom I admire and had an impact on me. To start with, I would invite Maria Callas (one of the great legends of 20th Century opera) for the stories she could tell and the beauty she would bring. Second, I would invite Dr. and Mrs. Oscar Ratnoff; I understand they always attended together. Dr. Ratnoff was a man of the world, an accomplished physician-scientist for whom I would have many questions about my research. Finally, I would invite Terry Gross from NPR because of her capability of coming up with the most insightful questions that spark a conversation among diverse people.

Q: A genie in a bottle gives you three wishes…what would you wish?

A: Other than wish for continuous funding for my lab, I would wish for a) professional fulfillment, b) happiness, and c) universal health care for all!

YOUR CAREER

Q: Who are the mentors who first inspired you to choose non-malignant hematology as a career?

A: My biochemistry professor at Semmelweis University Medical School, Dr. Krasimir Kolev, is the epitome of a basic scientist who at the time introduced me to a relatively new concept of fibrinolysis, studying the non-covalent modifiers of fibrinogen function. Gábor Tarkovács, my Internal Medicine Professor in medical school, was the consummate clinical hematologist, who sparked my interest in non-malignant hematology and the work-up of patients with complex diagnostic and therapeutic challenges.

Q: What do you enjoy most about your career today?

A: Research-wise, I think what I enjoy the most is the pursuit of developing novel experimental strategies to answer key research questions. I have been fortunate to establish fruitful collaborations with experts across many disciplines, which has elevated the quality of our research and has enriched our research portfolio.

On the clinical side, I enjoy "connecting the dots," immersing in investigative work to identify what may have caused or contributed to a patient's bleeding, acute drop in blood counts or thrombosis. There are no society guidelines for most of the patients we

deal with, in contrast to oncology. I think I am analytical and very detail-oriented and enjoy applying my basic science knowledge on hemostasis and thrombosis to solve complex cases.

Q: A highlight of your career to date?

A: I honestly cannot say that my career is advanced enough to claim a specific highlight. I have been fortunate to present our work at major meetings and have the privilege to meet, interact and collaborate with brilliant scientists who are also extraordinary people. Through these informal and formal collaborations, my research has matured and advanced in new directions. We have obtained considerable funding to continue to investigate our scientific questions. I find this to be the highlight of my career and I wish to repeat it many times.

Q: What scientific or clinical publication in your field has been most influential to your clinical practice and/or research?

A: I would have to point to two publications, as they were equally influential in my career development:

1) The 2005 *Journal of Experimental Medicine* paper by Thomas Renné's group, characterizing the first murine knockout animal for Factor XII. The notion that FXII deletion is inconsequential for hemostasis but protective from thrombosis has resulted in a renewed interest in FXII and revived the contact system field.

2) Similarly, a 2012 paper published in the *Journal of Experimental Medicine* by Steffen Massberg's group, was the first murine model of venous stenosis that mimics, and is reflective of human deep vein thrombosis. In this study, the authors show for the first time the critical role of inflammatory cells (monocytes and neutrophils) in the development and propagation of DVT and introduce the concept of "thromboinflammation." They elegantly show that targeting the inflammatory component of these developing clots (by eliminating neutrophils or dissolving NETs) alone is beneficial at preventing thrombus propagation.

Both of these papers had a significant impact in my research. We are presently studying zymogen FXII functions as they relate to neutrophil cell biology and strategies to specifically target primed neutrophils in sterile inflammatory diseases.

Describe why you are a member of HTRS and how you think the Society can continue to evolve:

A: HTRS has a unique dedication to the hemostasis and thrombosis field, which is my career focus. I was fortunate to receive funding from HTRS at a critical point in my career and at a time when, due to my J1 Visa status, I was not eligible for NIH career development grants. I believe it was this funding from HTRS that allowed me to start and continue my career as a physician-scientist. The hemostasis and thrombosis field has widespread applications, far beyond what is imaginable. Therefore, support from HTRS must continue for early stage and also mid-career individuals.

What words of guidance would you give trainees contemplating a career in non-malignant hematology?

A: Practice, persevere and work hard. Identify mentors who are willing to invest the time and effort to train you…mentors who are generous with their knowledge and research…individuals that one day, you aspire to become. Do not get discouraged by the tough realities of academic work, negative results or unfunded proposals. Continue to look for the truth in your research, persist and stay committed. On the clinical side, I find it very gratifying to be able to make a difference in the management of complex patients with hemostatic and thrombotic disorders. There never is a dull day in this line of work and I would not trade it for anything.