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Podcast Transcript  
“A Closer Look” Podcast

Hello listeners and thank you for tuning into our podcast entitled “A Closer Look.” This episode happens to be our inaugural episode of “A Closer Look,” and this podcast is a supplementary, special podcast to the bio-medical journal, *Molecular Medicine*’s official podcast “Mollie Medcast.” The goal of this podcast is to strive to give you a closer look into the lives and work of researchers and scientists in order to enlighten you on the diverse nature of scientists today and the general scope of medical research today taking place at The Feinstein Institute for Medical Research. This is Matthew Shore, the summer editorial intern here at *Molecular Medicine* and your host for this podcast episode. In this episode of “A Closer Look,” we will be covering the work of a rising researcher in the Tracey Lab, but first let’s review the mission of *Molecular Medicine*. Our mission is to publish novel work that’s concerned with understanding the pathogenesis of disease at the molecular level. This may lead to the design of specific molecular tools for disease diagnosis, treatment, and prevention.

So, on to the podcast!

Physician-scientist, Mauricio Rosas-Ballina, M.D., Ph.D., is one of the researchers in the Tracey Lab. I sat down with Mauricio one afternoon and learned not only of his very interesting work, but also about his equally fascinating life and the story behind how he got to where he is today.

So, first let’s start off with Mauricio’s background, including his interest in science and his education:

Mauricio’s interest in science actually began after he became a Medical Doctor in his native country of Mexico. Mauricio became an M.D. because he was always curious about how the body works and because he liked helping people, and thus he practiced as a General Practitioner for one year upon graduation from medical school. Well, now I’m sure your wondering how Mauricio became involved in research if he was a General Practitioner interacting with patients! The answer is that after practicing medicine, Mauricio realized that while he enjoyed seeing patients, he preferred researching and developing treatments. This way he could help more patients than just those he saw on a daily basis. Thus, he pursued research. I know, I know . . . now you want to know if there are other reasons why Mauricio pursued research!

Well, you’ll be happy to hear that there are other reasons! Mauricio pursued research also because his mentor in Mexico instilled an interest in science in him. However, he did not know the key features of science, such as formulating questions and finding answers to those questions, but as he worked more closely with science over time in Mexico working towards his Master of Science degree, he increasingly developed and piqued his curiosity for science. Moreover, over time, Mauricio realized that in field of science, researchers do not just “read [about] knowledge,” but they also “generate knowledge.”

Mauricio’s background in science and his work in research in Mexico beg the question of how he became involved with research at The Feinstein Institute! Well, luckily I asked Mauricio just that, and I will summarize his response:

Well, upon receiving his Master of Science degree in Mexico, Mauricio worked in a lab studying inflammatory diseases. Soon after, his mentor instructed him to study sepsis, and gave him one of Dr. Kevin Tracey's papers to read. In case you are unsure or want further clarification, sepsis is a serious medical condition characterized by either the presence of a known or suspected infection or a whole-body inflammatory state (called a systemic inflammatory response syndrome or SIRS).<sup>1</sup> Upon reading the paper, Mauricio initiated a relationship with Dr. Tracey and was subsequently invited to work in the Tracey Lab. You probably are now recalling the fact that Mauricio has a Ph.D. Thus, I'm sure you want to know more about his doctoral work as he worked toward his Ph.D., and that is exactly what we will cover next!

Upon arrival at The Feinstein Institute, Mauricio felt it was a "necessary step" for him to pursue his Ph.D. degree after earning his Master of Science degree in order to continue to gain the experience necessary to hopefully get a lab of his own in the future. As a vehicle to earn his doctorate, Mauricio applied for a position as an Elmezzi Scholar in the Elmezzi Graduate School of Molecular Medicine. He was pleased to be accepted to the Elmezzi School because of the school's reputation in training physician-scientists.

For his doctoral research, Mauricio studied sepsis, which we said earlier was a serious medical condition caused by either the presence of an infection or a whole-body inflammatory state<sup>1</sup>. Mauricio is specifically interested in how multiple bodily systems, such as the nervous system, immune system, and endocrine system, are affected by sepsis. Since all of the bodily systems affected by sepsis interact and thus are "difficult to dissect," a cure has not yet been discovered for sepsis, which is sad because it is a major cause of death in intensive care units worldwide, with mortality rates that can climb all the way to more than 60 percent for septic shock<sup>1</sup>, and deaths resulting from sepsis occur every 2½ minutes, or 25 deaths per hour.<sup>2</sup> Wow, that's a shocking statistic! Thus, researchers have to figure out what is going on at the same time and how they interact with each other. Also, Mauricio feels that the study of sepsis is "interdisciplinary," and he feels that it is a good thing, too, because all of the various observations made by putting the clues together from the different systems affected by sepsis provide information that is not provided by specialists, like a cardiologist or dermatologist, for example, who only study one field of medicine or research.

As a professional researcher, Mauricio has sculpted his own feelings toward research in addition to what he likes about working in the Tracey Lab:

Mauricio has come to love the research process because of the "capacity to ask questions and to try to solve them with experiments" and because he feels it is a "powerful idea" because it can "generate knowledge." More specific to Mauricio's work, Mauricio likes the fact that health science is researched in the Tracey Lab and how "big" questions are asked and subsequently answered with experiments in the Tracey Lab. Moreover, Mauricio likes how researchers in the lab can pursue experiments that either "fill in the gaps" of someone else's prior experiment or that they can start a new experiment and hopefully discover a new field of immunology, research, or science in general.

Mauricio truly is a "man with a plan," as is evident by his thoughts and plans for the future, going forward.

As previously stated, Mauricio hopes to get his own lab someday. Once he gets his own lab, he hopes to continue to do research on fighting disease because he wants to help people and he wants to continue studying different bodily systems working together with regard to disease.

As this episode comes to a close, we will briefly discuss the impact Mauricio's work can have on those involved with the medical community:

Mauricio feels that his work with inflammatory diseases in the present and in the future upon receiving his own lab can help Physicians in the field because since he studies all diseases with an inflammatory component, he

is helping Physicians learn of new “hope” towards finding a cure for diseases such as “sepsis, arthritis, and Crohn’s Disease.” Also, since he studies the nervous system and the immune system and how they interact in connection with the nature of inflammatory diseases, Mauricio feels that his work can “create a path” for Physicians who consider multiple bodily systems together in order to know more about diseases in general. Lastly, Mauricio feels that understanding the nature of disease and subsequently asking questions about disease is “reductionist [or] narrow” because it takes a while to integrate all of the systems that work together with many diseases.

Well, unfortunately that’s all for this episode of “A Closer Look,” but if you have any questions, comments, or concerns about this podcast episode or the podcast in general, you may feel free to contact me, Matthew Shore, via email at [matthew.molmed@gmail.com](mailto:matthew.molmed@gmail.com). Thank you for listening to this inaugural episode of “A Closer Look,” a special supplement to *Molecular Medicine*’s regularly scheduled “Mollie Medcast” podcast!

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Produced by:

Margot Puerta, Managing Editor, *Molecular Medicine*

Written, and Edited by:

Matthew J Shore, Editorial Intern, *Molecular Medicine*

Podcast Consultants:

Veronica J Davis, Communications Editor, *Molecular Medicine*

Kevin M Heck, Video Production Editor, *Molecular Medicine*

Music: <http://www.podsafefaudio.com>

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