

# In Conversation with Dr. David Mosser, Chair of the Maryland Stem Cell Research Commission

Welcome back to *In Conversation*, a series of conversations with thought leaders and disruptors in the BioHealth Capital Region. This week we're sitting down with Dr. David Mosser, Professor of Cell Biology and Molecular Genetics at the University of Maryland, College Park and Chair of the Maryland Stem Cell Research Commission (an independent commission that functions within the Maryland Technology Development Corporation - TEDCO).



## **BioHive: Tell us about your journey, and how you got involved in the Maryland Stem Cell Research Commission?**

David Mosser: I am a Professor of Cell Biology and Molecular Genetics at the University of Maryland, College Park. I teach a class in Immunology to undergraduate students, where we stress the origins of immune cells from hematopoietic precursors to their ultimate fate as mature immune effector cells. This gives me a natural interest in stem cells, and the enormous potential they possess to repopulate organs and repair damaged tissue. From a cell and developmental biology perspective, the recent lessons that stem cells have provided us would have been considered nothing short of miraculous as little as ten years ago. I feel privileged to have shared in the realization of some of these miracles.

## **BH: What inspires you about the work being done in the stem cell field in general?**

DM: Each year the Maryland Stem Cell Research Commission meets together to review grant applications and decide which exciting new projects will be supported by the MSCRF. We frequently see projects at their inception, and are able to support such 'high risk, high reward' proposals when there is sufficient funding. It is extremely rewarding to hear that, years later, one of our funded projects made a positive impact on the lives of patients receiving stem cell therapies. Projects with the potential to replace defective myocytes in injured human hearts, projects to improve the lives of veterans with prosthetic devices, projects to ameliorate sickle cell disease; these are the things that inspire me to learn more about the enormous potential of stem cells.

## **BH: What is your long-term pipe dream for this initiative?**

DM: I am encouraged to see that the Maryland Stem Cell Research Commission, under the guidance of Dan Gincel (Executive Director, MSCRF), is moving in a direction that will benefit not only the patients who rely on cutting edge stem cell technologies, but also the biotechnology industries in the state of Maryland who are developing these technologies. When I first joined this Commission, stem cell technology was in its infancy, and therefore the emphasis was on the development of new ideas and techniques. Many of these new ideas have come to fruition, so now the emphasis is moving toward the commercialization of these technologies to make them available to patients in need (bench to bedside). This transition will keep Maryland at the forefront of the stem cell field and encourage local companies to grow this technology in the State of Maryland.

## **BH: What excites you about the research being done in Maryland specifically?**

DM: The State of Maryland is a hotbed for bioscience research, given the combination of a great state university system, private institutions like Johns Hopkins University, the National Institutes of Health, and an extensive network of biotechnology companies. Geographical proximity of these diverse scientific establishments allows for seamless collaboration and synergy. For example, we all know about the engineering successes that have brought us 3-D printing, but who would have imagined 3-D printing with human pluripotent stem cells to give rise to new human organs? This futuristic idea is becoming a reality. It is the admixture of diverse scientific disciplines, all located together in the State of Maryland and centered around stem cell technology, that I find so exciting. The modest investment that the State of Maryland has made in stem cell biology has put the state in a position to discover and implement technologies we would not have dreamed about a few years ago.

## **BH: What advice do you have for teams thinking about competing for awards like these in the future?**

DM: My advice is "Go for it!" The website is [mscrf.org](http://mscrf.org) and the site can also be accessed through TEDCO ([tedco.org](http://tedco.org)). We support many different stem cell related activities ranging from discovery to validation, to commercialization, and to clinical applications. These projects are described under the "Funding Opportunities" heading at [mscrf.org](http://mscrf.org). The Discovery Research Program supports new and innovative ideas in the stem cell field. The Validation Program supports the transition from ideas to commercial application. The Commercialization Program supports Maryland-based start-up companies in the stem cell space. The Clinical Program supports clinical trials conducted in the state of Maryland. We also have a Post-doctoral Program for postdoctoral trainees interested in stem cell research. Contact us. We're here to help!

## **A little more about Dr. David Mosser:**

Dr. David M. Mosser is a Professor of Cell Biology and Molecular Genetics at the University of Maryland, College Park, and the Founding Director of the Maryland Pathogen Research Institute. Research in his laboratory has described a class of macrophages which are important regulators of inflammation, but which can also contribute to the progression of neoplasia and susceptibility to infectious diseases. Dr. Mosser received his Ph.D. from North Carolina State University and did his postdoctoral training at Harvard Medical School. He has published more than 125 peer-reviewed papers about leukocytes and their roles in host defense and homeostasis. Dr. Mosser is a previous member of the NIH, NIAID Board of Scientific Counselors, a past-president of the Society for Leukocyte Biology, and a past Chair of an NIH Study Section. He recently served as Chair of ASM Division E (Immunology). He succeeds Avram I. Reisner as the Chair of the Maryland Stem Cell Research Fund.

*Thanks for joining us for this week's In Conversation! Check back soon for the next installment of In Conversation and, in the meantime, join the conversation with David below in the comments.*