The Maryland Stem Cell Research Fund: Promoting Stem Cell Research and Cures

DAN GINCEL

INTRODUCTION

The development of new medical strategies through human stem cell research for the prevention, diagnosis, and treatment of human diseases and conditions is a high priority for the state of Maryland. Stem cell research offers immense promise for new medical therapies and a better understanding of debilitating human diseases and conditions.

There is currently a need for more investment in both basic and translational research to pursue the promise of stem cells. Insufficient funding at the federal level for all types of basic and translational human stem cell research prompted the governor and the Maryland General Assembly to establish the Maryland Stem Cell Research Act of 2006 and create the Maryland Stem Cell Research Fund (MSCRF). The fund continues through appropriation in the governor’s annual budget. It is administered by the Maryland Technology Development Corporation (TEDCO), an independent entity established by the Maryland General Assembly in 1998 to facilitate the creation of businesses and foster their growth in all regions of the state through the development and commercialization of technology.

The driving force behind this initiative is to leverage funding, increase research capacity and cutting-edge technologies, develop strong economic growth in the life sciences sector in Maryland, and develop future cures. The MSCRF does this by promoting state-funded stem cell research through grants to public and private entities in the state.

The MSCRF operates several different programs to address all levels of research and commercialization. To date, more than $100 million has been committed to the MSCRF, and 258 research projects have been supported.

The research ranges from basic and translational to preclinical and clinical. We have funded work on all types of human stem cells, including adult, embryonic, cancer, and induced pluripotent stem cells, and will continue to do so. Our research spans more than 40 different diseases and conditions. The diversity of these studies extends to areas including biomaterials, drug screening tools, and more, as they also influence the cell therapy and translational medicine fields.

To date, the research funded by the MSCRF has resulted in more than 30 patents and many more publications that position Maryland as a center of excellence in stem cell and translational medicine. More information can be found in our annual reports on our website (http://www.mscrf.org).

Like most others in the stem cell field, we are at the starting curve of the effect our funded research will have on patients. However, several phase I clinical trials are on their way, and many more will be able to be funded through our new initiative to support company-sponsored preclinical and clinical work (read on for more information) that must be cleared by the U.S. Food and Drug Administration before a clinical trial can start.

We also undergo institutional review board, ESCRO, and animal care and use committee reviews to be sure that we are funding only ethically responsible work. Several of our patient advocates sit on the Maryland Stem Cell Research Commission, and we maintain a strong connection to the different advocacy groups.

Upcoming Opportunities

The Maryland Stem Cell Research Commission, through the MSCRF, has set early goals to fund both basic and translational research to advance the knowledge in the stem cell field. Over the years we have been moving toward the translational and preclinical side of the scale, but we remain committed to supporting basic research as well.

The Maryland Stem Cell Research Commission, through the MSCRF, focuses on applications that promote translational research and encourage...
collaboration with other organizations in order to bring therapies and treatments to the marketplace. In fiscal year 2011 alone, the commission funded more than 30% of all awards to organizations that collaborated across institution lines and in some cases across state and country lines. With our new call for applications, we are for the first time moving to fund goal-oriented applications from companies outside of Maryland, as well as within it, to conduct clinical work in a Maryland site. We hope to attract good companies to the region, as well as providing potential therapy to Maryland residents.

We are currently soliciting applications for the following:

- **Postdoctoral fellowship grants** from exceptional late-stage predoctoral students and postdoctoral fellows nationwide who wish to conduct postdoctoral research on human stem cells in Maryland. Each fellowship will be up to $55,000 per year, for up to 2 years.
- **Exploratory research grants** designed for investigators new to the stem cell field and for exploratory projects without preliminary data. A single application for an exploratory research grant may request up to $100,000 of direct costs in any single year, for up to 2 years.
- **Investigator-initiated grants** designed for investigators with preliminary data supporting the grant application. A single application for an investigator-initiated research grant may request up to $600,000 of direct costs, for up to 3 years.
- **Preclinical and clinical grants** from companies to advance medical therapies in Maryland. A single preclinical application may request up to $500,000 of direct costs, and a clinical application may request up to $750,000 of direct costs. In both cases, the grants are for up to 3 years.

More information about these opportunities is given on our website at [http://www.mscrf.org/content/fundingopps/index.cfm](http://www.mscrf.org/content/fundingopps/index.cfm).

**Sharing Information**

We do not engage in fund-raising—all our funding is from the annual budget of the state of Maryland, proposed by the governor and approved by the legislators. However, we are very much involved in the state-level discussion and decisions regarding where stem cell research is heading. We testify and offer our professional opinions in several committee hearings every year.

This is important because the MSCRF positions Maryland as a center for stem cell research and a role model for the nation. In addition, all MSCRF awardees must present their findings at an annual research symposium, which provides a rare opportunity for investigators from the public and private sectors to share ideas and information. The fourth Maryland Stem Cell Research Symposium was held on October 5, 2011, at Towson University, in collaboration with Baltimore County. At this event, more than 20 speakers and 100 poster presentations showcased Maryland’s investment in stem cell research to more than 400 participants from academic institutions, biotech companies, state and federal agencies, patient groups, nonprofit organizations, and the general public. The fifth annual symposium will take place on October 4 and 5, 2012, in Annapolis, Maryland. We hope you will join us.

To learn more about the symposium and the MSCRF, visit the organization’s website at [http://www.mscrf.org](http://www.mscrf.org) or follow them on Twitter at [@mscrf](http://www.mscrf.org).

**Meet Dan Gincel, Ph.D.**

Dr. Dan Gincel is director of the Maryland Stem Cell Research Fund at TEDCO, the quasi-state agency charged with fiduciary and administrative responsibilities of the MSCRF. Dr. Gincel represents Maryland on the Interstate Alliance on Stem Cell Research, an organization that fosters effective interstate collaboration by assisting states in developing stem cell research programs. He has more than 12 years of extensive experience that spans various areas in biochemistry, cell biology, and stem cell research. Before joining TEDCO, Dr. Gincel completed 4 years of postdoctoral fellowships at Johns Hopkins University, researching the involvement of glutamate transporters in neurological diseases. Dr. Gincel has published his research in more than 10 peer-reviewed articles. Dr. Gincel earned his B.S. and Ph.D. degrees from Ben-Gurion University in Israel.
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Updated Information & Services

including high-resolution figures, can be found at:
http://stemcellstm.alphamedpress.org/content/early/2012/06/27/stcm.2012-0070.citation