

State funding boosts stem cell research in California, other states

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When federal funding regulations created limitations on human embryonic stem cell research, several states created their own funding programs. A new study analyzed stem cell funding programs in four states that provided their own funding and found that in both California and Connecticut, state programs have contributed to an increase in the share of publications in the field produced in these states.

The study provides early evidence that the distribution of stem-cell-related publications in the United States differs from the distribution of publications in fields not targeted by specific state [funding](#) policies. The study comes at a time when some of these state programs are nearing the final years of their initial funding commitments, so understanding the programs' influence on scientific research is important for policy makers and voters.

"These state programs have led to more stem cell papers - in some cases by a dramatic amount - coming out of these [states](#)," said Aaron Levine, an associate professor in the School of Public Policy at the Georgia Institute of Technology. "That's important for people to know as they are thinking about whether these programs were a good investment."

The study was started as a project in a class supported by the National Science Foundation (NSF) Stem Cell Biomanufacturing Integrative Graduate Education and Research Traineeship (IGERT) program. The study was published February 6 in the journal *Cell Stem Cell*.

California, Connecticut, Maryland and New York dedicate state funding to support basic and translational stem cell research, including research on human embryonic [stem cells](#). Similar stem cell funding programs in Illinois and New Jersey have ended, and were not analyzed in the study.

For the study, the researchers examined the share of U.S human embryonic and induced pluripotent stem cell research-related publications with at least one author from California, Connecticut, Maryland, or New York. Those publications were compared to the share of U.S. research papers in other research fields, such as cancer, with at least one author from each state.

Among the states studied, stem cell research in California benefited most from state funding.

California, already a leader in the field, began funding stem cell research in 2006, following a 2004 vote to commit \$3 billion to the field. In 2012-2013, 42 percent of U.S. human embryonic stem cell-related research articles had at least one author from California, compared to 18 percent of cancer-related articles and more than half of the human embryonic stem cell-related articles published with at least one California author acknowledged state funding.

"This funding has really established California as a leader in this emerging field," Levine said. "They have a noticeable, substantial improvement over the share of publications from California in other life science fields."

Connecticut had very little human embryonic stem cell-related research activity through 2005 before committing \$100 million over ten years to the field. Since state funding began in 2006, approximately 67 percent of research articles published by Connecticut authors on human embryonic stem cell-related topics acknowledged state funding.

In contrast to California and Connecticut, over-performance in stem cell research was not seen in Maryland and New York. State funding from each of these states was acknowledged in approximately 3 percent of the human embryonic stem cell-related publications in the study's data set between 2010 and 2013. State funding appears to have helped these states maintain a share of stem cell-related research similar to their share in the comparable fields.

"Given the competitive environment with other states investing heavily in [stem cell research](#), this may well be a successful policy outcome," Levine said.

The study provides a starting point for policymakers and, potentially, voters considering the future of state stem cell funding efforts, as well as others interested in state science and technology policy more generally, Levine said.

More information: Hillary B. Alberta, et al. "Assessing State Stem Cell Programs in the United States: How Has State Funding Affected Publication Trends?" (*Cell Stem Cell*, February 2015)
[dx.doi.org/10.1016/j.stem.2015.01.007](https://doi.org/10.1016/j.stem.2015.01.007)

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