

Stem cell science gets new home in La Jolla

Scientists from three San Diego research institutions will combine forces at new center

Written by

[Gary Robbins](#)

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The quest to figure out the nature of stem cells and how to use them to treat disease will greatly



expand Tuesday with the opening of the [Sanford Consortium for Regenerative Medicine](#), a \$127 million center in La Jolla that will draw scientists from five major research institutions.

The 150,000-square-foot complex will be the largest of its kind in California, housing 335 people, including such eminent scientists as Salk Institute geneticist Fred Gage and biologist Martin Friedlander of The Scripps Research Institute.

The \$127 million Sanford Consortium for Regenerative Medicine, located immediately north of the Salk Institute, will house 330 workers and provide space for such renowned scientists as Fred Gage and Martin Friedlander. — K.C. Alfred

Scientists from the University of California San Diego, Sanford-

Burnham Medical Research Institute and the La Jolla Institute for Allergy and Immunology.

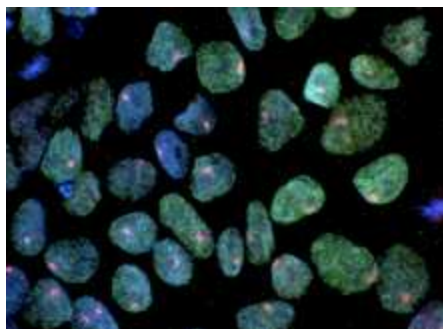
[\(Stem cell glossary\)](#)

The Consortium is part of a long-term, multibillion-dollar attempt by scientists to find ways to do everything from repairing spinal cord injuries to growing healthy heart tissue to preventing Alzheimer's disease.



The new building has been nicknamed the “Collaboratory” for its emphasis on teamwork. The center’s interior features almost 3,000 square feet of glass so that scientists from different disciplines will regularly see one another. Laboratories are linked by informal meeting areas. And seating in the auditorium was limited to 150 in the belief that crowds bigger than that discourage people from being social.

“The design means that you can’t walk from spot A to B to C without meeting other people,” said Alan Trounson, president of the [California Institute for Regenerative Medicine](#) (CIRM), a state agency that provided \$43 million in public funds for the project. “This is not a conventional building. The idea is to integrate people from various places. Instead of taking a year and a half to meet, they’ll have done so in three months.”



The Sanford Consortium for Regenerative Medicine will work on all types of stem cells, which includes so-called induced pluripotent stem cells, which CIRM as a cell "taken from any tissue from a child or adult that has been genetically modified to behave like an embryonic stem cell." This image depicts iPS cells. — California Institute for Regenerative Medicine

The Collaboratory is one of a dozen new research institutions that CIRM has been helping to create throughout California to promote the study of stem cells. Special attention is being paid to human embryonic stem cells, which can turn into any type of cell in the body.

Scientists have made significant advances in many areas, notably in approaches to diabetes and heart disease. But the work on embryonic stem cells has yet to lead to widespread breakthroughs and lots of clinical trials. The field also suffered a major setback as the Geron Corp. in Menlo Park recently ended its work with embryonic cells to save money for other research. Geron had been conducting the world’s first clinical trial that involved a therapy based on embryonic cells.

“I do not think that (Geron’s) decision takes away from the promise of stem cell research, but it does point out that new therapeutic strategies such as stem cells and gene therapy may well be more challenging to bring to the clinic than the use of small molecules or biologics,” said Edward Holmes, president of the Sanford Consortium.

Key scientists who'll use the Collaboratory

Fred Gage, geneticist, Salk Institute: Searching for stem cell-based therapies to treat psychiatric disorders and neurodegenerative diseases, such as autism, schizophrenia and Parkinson’s disease. Gage is using stem cells from Parkinson’s patients to try to replicate the disease in a lab while also studying the role inflammation plays in the disorder.

Anjana Rao, geneticist, La Jolla Institute for Allergy and Immunology: Exploring what happens in embryonic stem cells as they turn into different types of cells. Such information could prove valuable in efforts to coax stem cells into becoming liver, heart and other organ cells for transplant purposes.

Catriona Jamieson, University of California San Diego: Directs stem cell research at the Moores Cancer Center, where she also treats patients with blood disorders, such as leukemia. She studies early cells that give rise to cancer stem cells, hoping to develop more personalized and less toxic cancer therapies. She led the first human clinical trial for a cancer therapy developed through CIRM-funded stem cell research

Robert Wechsler-Reya, cancer biologist, Sanford-Burnham Medical Research Institute: Studies how normal stem cells make decisions, including when to divide and when to develop into other cell types. He identified a new type of stem cell that can give rise to medulloblastoma, the most common malignant brain cancer in children.

Martin Friedlander, cell biologist, The Scripps Research Institute: Conducts stem cell research that focuses on the eye and potential treatments for a range of retinal vascular and degenerative diseases, including diabetic retinopathy, age-related macular degeneration, glaucoma, retinitis pigmentosa.



Martin Friedlander, The Scripps Research Institute — The Scripps Research Institute

The cost and financing of the building

The cost to build and equip the Sanford Consortium for Regenerative Medicine building is being shared by taxpayers (through the California Institute for Regenerative Medicine), philanthropy and a license fee or rent for the share of the building that the five local research institutions occupy.

The Sanford Consortium for Regenerative Medicine building

Key features of the building

Glass walls: The Collaboratory features almost 3,000 square feet of glass, some of which was used to create fishbowl-like



The Sanford Consortium for Regenerative Medicine features almost 3,000 square feet on interior glass to make it easier for scientists to see each other, a design meant to promote collaboration. — Fentress Architects

offices in the building. The heavy uses of glass enables people to see each other, encouraging collaboration and socialization.

Medical cyclotron: The Consortium is trying convince the private sector to build and operate a medical cyclotron, a particle accelerator that produces radioisotopes. Scientists need the isotopes for Positron Emission Tomography scanning, high resolution imaging that is essential in drug discovery research. It's important to have a cyclotron on site because many isotopes have a very short half-life (a matter of minutes). There is only one other medical cyclotron in San Diego County. It is located in Sorrento Valley, too far away to be of regular use in La Jolla. Estimated cost of a cyclotron: \$2 million.

11.7 Telsa magnetic resonance imaging machine: The high-powered machine will enable scientists to clearly see where cells are located and how they're behaving and changing inside research mice. Such images help scientists understand the nature of stem cells, and how they might behave if they were turned into therapeutic drugs. The machine is one of only four 11.7 Tesla MRIs in the country. The sort of MRI machines used on humans are 3 Tesla in power. The new MRI cost \$3 million.

Main auditorium: The auditorium was limited to 150 seats due to Dunbar's law, the belief that the level of socialization among people declines if the crowd gets much higher than that figure.

StarBoard whiteboards: The building will have 12 interactive StarBoard whiteboards to promote collaboration and efficiency. A person can use his finger, instead of a marker, to write on the board, which automatically fixes bad handwriting. The whiteboards also allow users to better display graphics and videos. And with the tap of a finger, a user can email everything on the whiteboard to as many email addresses as desired.

The architects

The Sanford Consortium building was designed by Fentress Architects in Denver, Colorado in association with Davis Davis Architects in San Diego.

Story sources: UC San Diego, Salk Institute, The Scripps Research Institute, Sanford-Burnham Medical Research Institute, La Jolla Institute for Allergy and Immunology, National Institutes of Health, California Institute for Regenerative Medicine, New York Times, Wikipedia.org