The Salk Cancer Center is tackling the deadliest forms of cancer.

Through foundational research, cutting-edge technology, and a holistic view, our scientists are leading the search for the next generation of targeted cancer therapies.

Message from the Cancer Center Director

In 2023, the Salk Institute celebrated its 50th anniversary as a National Cancer Institute (NCI)-Designated Cancer Center—the longest continuously running such center in California, and one of seven such centers in the United States that are dedicated entirely to cancer research. With this designation, NCI recognizes centers around the country that meet rigorous standards for transdisciplinary, state-of-the-art research focused on developing new and better approaches to preventing, diagnosing, and treating cancer. The NCI-Designated Cancer Centers are recognized for their scientific leadership in laboratory and clinical research, in addition to serving their communities and the broader public by integrating training and education for biomedical researchers and health care professionals.

In our unique research environment, world-renowned scientists are in constant conversation and collaboration. By combining their various perspectives and expertise, we have uncovered many fundamental molecular drivers of cancer over the last 50 years, paving the way for modern therapeutic approaches. In those decades, our science has inspired hundreds of new cancer medicines and continues to fuel numerous translational and clinical trials.

Our Conquering Cancer Initiative is the engine that drives that work. The purpose of this Initiative is to support and enhance Salk's life-changing research capabilities. I'm excited about the Initiative because it will allow us to further expand our leading-edge technologies and add computational biologists, engineers, and other unique experts to our teams.

Teams of interdisciplinary scientists have always worked together at Salk to address complex health issues from many angles. One example is a team we've assembled to tackle pancreatic cancer, which brings together expertise in metabolism, cancer genes, 3D organoid modeling, drug discovery, and more. Our Salk approach is leading to transformative discoveries, resulting in new diagnostics and therapies. As the speed of science accelerates, I can see that more breakthroughs are just around the corner.

I hope you are as optimistic about the future of cancer research as I am. We appreciate your partnership and thank you for your support.

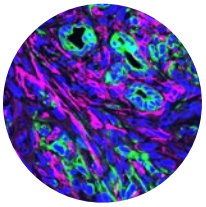
REUBEN SHAW
Professor
Director of the Salk Cancer Center
William R. Brody Chair

Support the Conquering Cancer Initiative

The Conquering Cancer Initiative is a scientific and philanthropic initiative that brings scientists from more than 30 Salk labs together to harness new strategies against deadly cancers: pancreatic, ovarian, lung, brain (glioblastoma), colon, and triple-negative breast cancer. As part of the Initiative, Salk researchers are uncovering vulnerabilities in these cancers and developing novel methods to attack tumors while leaving healthy tissues alone.

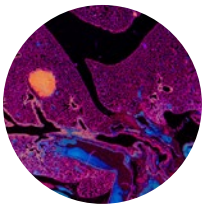
Taking on the Big Six

Salk takes aim at the six deadliest cancers



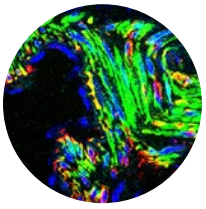
PANCREATIC CANCER

Approximately 12% of pancreatic patients survive more than five years. Part of the problem is late diagnosis. Pancreatic cancer presents indistinct symptoms, such as abdominal pain, jaundice, and weight loss. But the biggest issue is that pancreatic tumors build a shell to protect themselves. Similar to scar tissue, this shell thwarts the immune system, and unfortunately also prevents chemotherapy and other treatments from accessing the tumor. Salk scientists have been attacking pancreatic cancer from different angles, including new therapies in clinical trials that break the tumor's shell to allow for much more effective treatments across the board.



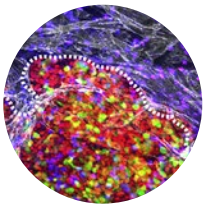
LUNG CANCER

Lung cancer is the #1 cause of all cancer deaths in the US annually, killing more patients than breast, prostate, and colon cancer combined. Its overall 5-year survival rate is less than 20%. On the plus side, lung cancer stands as a testament to the power of research in driving the development of new powerful therapies, as around 25% of lung cancer patients can now be treated with personalized therapies against the specific genes mutated in their cancers. Salk scientists are contributing to the development of these novel approaches to fighting lung cancer.



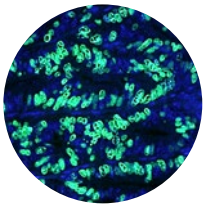
OVARIAN CANCER

Like pancreatic cancer, ovarian cancer is often diagnosed late. Early-stage ovarian cancer clinically looks a lot like irritable bowel syndrome. By the time many patients are diagnosed, the cancer has usually already spread. The 5-year survival rate is less than 50%, but Salk scientists are working on new therapeutic targets for specific subsets of ovarian cancer patients.



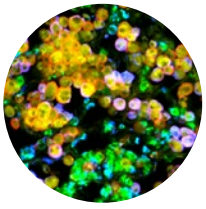
TRIPLE-NEGATIVE BREAST CANCER

While many forms of breast cancer are quite treatable, triple-negative breast cancer remains a huge challenge. These tumor cells lack estrogen, progesterone, and HER2 receptors, which are often targeted in standard breast cancer therapies. Without these targets, patients have fewer therapeutic options. In addition to being more difficult to treat, triple-negative breast cancer can be more aggressive, rapidly spreading to other tissues. Salk scientists are developing new therapies based on distinct aspects of how breast cancer cells engage with the immune system.



COLORECTAL CANCER

Like lung cancer, colorectal cancer is a very common cause of cancer deaths per year, and the incidence of colorectal cancer in young adults has been on the rise in the last decade for unknown reasons. Late diagnoses are giving colorectal cancer a reputation as "the silent killer." Colon and rectal cancers have been associated with diabetes, inflammatory bowel disease, alcohol consumption, and the typical Western diet. Salk scientists are studying multiple aspects of colorectal cancer to inform new treatment plans.



GLIOBLASTOMA

The deadly brain cancer glioblastoma has an abysmal 5-year survival rate of less than 10%. Brain surgery for glioblastoma multiforme has been likened to lifting a spider web off wet leaves—small pieces stay behind. New metabolism-based therapeutics have been shown to help some patients with specific genetic mutations, an approach Salk scientists hope to expand and combine with new immunotherapies.

Our Funding Priorities

EMERGING RESEARCH

In science, the most important discoveries are often not the more obvious or predictable ones, but the unexpected observations that deserve further exploration. Salk is uniquely equipped to make these new discoveries, but research funds are needed to allow our scientists to follow up on their findings and see them to fruition. By investing in these new ideas, our supporters help Salk scientists obtain the equipment, seed funding, and bridge funding needed to explore new creative strategies to tackling cancer.

RECRUITMENT

To attract and retain the world's top cancer researchers, we must be able to continue supporting their innovative research. New endowed faculty chairs and postdoctoral fellowships will enable us to recruit the best scientists to build the bridge between basic research and clinical application. As proven by our ongoing recruitment of senior faculty, endowments ensure the long-term sustainability of science innovation for our researchers and their teams.

TRANSLATION

Translational initiatives help us convert our basic research discoveries into meaningful clinical impact for cancer patients. To build a translational culture at Salk, we plan to bolster patentable discoveries into de-risked, valuable assets, and work with our partners in the biotechnology industry to see them through. This pipeline will be applied to the development of new cancer therapies and diagnostic tools, as well as new approaches to cancer prevention and public health.

EDUCATION AND TRAINING

To inspire the next generation of cancer researchers and clinicians, we host a number of critical training programs and symposia for high school and college students interested in science and medicine. Funds are used for a wide variety of activities, including our summer internship program that gives undergraduates hands-on research experience, and our program that sends trainees to learn and network at cancer conferences. These programs make the difference in turning an initial interest in science into a productive and impactful career.

"The Salk Cancer Center aims to push back the boundaries of fundamental understanding of cancer and use that knowledge to develop new therapeutics. By being bold, by being innovative, and by being collaborative, we hope to turn the tide against cancer."

REUBEN SHAW

About the Salk Cancer Center

The Cancer Center at the Salk Institute for Biological Studies was established in 1970. Three years later, we became one of the first NCI-Designated Cancer Centers in the US. This designation recognizes the Institute's scientific rigor across its laboratory investigations, scientific discoveries, and therapeutic developments. The Salk Cancer Center, now led by Reuben Shaw, comprises more than half of the research at the Salk Institute, made possible by a diverse team of faculty members, postdoctoral researchers, graduate students, and research assistants.

Exceptional Science

At Salk, scientists explore unexpected areas of research and collaborate across fields to uncover foundational knowledge that can lead to new treatments. This culture of innovation and collaboration gives Salk scientists an unparalleled community in which to make life-changing discoveries. Here's a sampling of their recent successes from the past year.

A new combination of drugs reduced lung tumors in mice

Standard chemotherapy and immunotherapy treatments are ineffective against lung cancers that have an LKB1 genetic mutation, and little can be done to help these patients. A new study from Professor **Reuben Shaw** and team identified specific biochemical changes in LKB1-mutant lung cancer and showed that a combination of two existing FDA-approved drugs—trametinib and entinostat—could be given in tandem to produce fewer and smaller tumors in mice with LKB1-mutated lung cancers, a very promising step toward clinical use.

Using the body's "invisible scalpel" to remove brain cancer

Glioblastoma is the most common and deadly form of brain cancer, with no effective treatments currently available. Professor **Susan Kaech** and team have been working to change that. They recently found a novel immunotherapy treatment that increased survival rates in mice with glioblastoma by triggering the brain's own immune cells to destroy the tumor.

High-fat diets alter gut bacteria, boosting colorectal cancer risk

The prevalence of colorectal cancer has risen in recent decades, potentially due to high-fat diets. Professor **Ronald Evans** and team revealed how high-fat diets can affect gut bacteria and alter digestive molecules called bile acids that are modified by those bacteria, in turn predisposing mice to colorectal cancer.

A step toward clinic-ready patient-derived organoids

Pancreatic cancer strikes quickly, so there is rarely time to experiment with multiple treatments. Patient-derived organoids allow researchers to test various cancer drugs on the patient's pancreatic tissue before treatment begins. Professor **Dannielle Engle** and team recently performed critical experiments that show their lab-grown organoids are a reliable and robust clinical model of pancreatic cancer.

Our Team

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Janelle Ayres
Jesse Dixon
Joseph Ecker
Dannielle Engle
Ronald Evans
Leona Flores
Rusty Gage
Diana Hargreaves
Daniel Hollern
Tony Hunter
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Talmo Pereira
Samuel Pfaff
Deepshika Ramanan
Alan Saghatelian
Gerald Shadel
Reuben Shaw
Christina Towers
Geoffrey Wahl
Ye Zhang

For help with donations, or questions about supporting the Salk Institute, please contact **Kira Foody**, senior principal gifts officer, at **kfoody@salk.edu**.

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Salk Institute for Biological Studies
10010 N Torrey Pines Rd
La Jolla, California 92037-1002
Telephone: (858) 453-4100
www.salk.edu

Let's connect! **@salkinstitute**

Charity Navigator ✦✦✦✦ FOUR-STAR

For the twelfth consecutive time, the Salk Institute has earned the highest ranking—4 out of 4 stars—from Charity Navigator, America's largest independent evaluator of nonprofit charities. This exceptional designation highlights the Institute's attention to fiscal accountability, efficiency, and transparency, outperforming 75% of charities in the US.