New studies conducted at the Salk Institute show that the only largely successful human gene therapy treatment to date is, in fact, riskier than realized.

Salk Institute researchers, led by Inder Verma, professor in the Laboratory of Genetics, discovered that the healthy copy, which replaces the defective gene, can itself promote cancer development. Their findings appeared in the April 27 issue of *Nature*.

Niels-Bjarne R. Woods, a post-doctoral researcher on Verma’s team, followed mice treated with the IL2RG gene three times longer than any study had ever before and found that one-third of the animals developed lymphoma later in life. This is the same gene being given to patients with X-linked severe combined immune deficiency (X-SCID) – commonly known as the “bubble boy” syndrome – in small clinical trials conducted in France, the United States, the United Kingdom, and Australia.

Gene therapy is a technique for correcting defective genes responsible for disease development. In most studies, a functional gene is inserted into the genome to replace a defective, disease-causing gene. Although replacement of *IL2RG* can cure X-SCID, the Salk scientists urge caution in the use of such therapy on the basis of their new findings.

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“We were surprised by the strength of the association between IL2RG gene therapy and development of lymphoma,” Woods says. “These results suggest that curing X-SCID by replacing IL2RG in the manner it is currently being done puts patients at an increased risk of developing cancer.”

Woods adds that the study could explain why one of three children in the French trial developed T-cell leukemia. Two developed the disease because IL2RG inserted itself into the cellular genome next to a known cancer-causing gene and activated it, but the cause of the third cancer case has not been solved.

The French trial is the largest to date to test IL2RG gene therapy, and of the 10 children treated, nine were successfully cured of X-SCID – although cancer was diagnosed in three of the children. Halted for a time, the trial is now continuing on a case-by-case basis, Woods says.

In the studies leading up to the human clinical studies, mice were studied post-transplant for less than six months, which is a traditional research protocol. The Salk research team, however, studied the mice throughout their natural life span, which is about one-and-a-half years. Mice that developed lymphoma did so at an average of 10 months of age. In the human gene therapy trials, leukemia did not appear until 2-3 years after treatment, Woods says.

“This indicates that preclinical experimental treatments involving transgenes should include long-term follow-up before entering a clinical trial,” Woods says.

But, more fundamentally, the Salk study suggests that replacement of a gene that serves multiple functions in the body may be much more problematic than therapy to replace a gene serving a single function, Verma says.

“The bottom line here is that if you replace a gene that has multiple effects, you have to know more about its regulation and its ability to affect other genes, and that requires extensive preclinical work and a much more careful analysis,” he says.

X-SCID is caused by mutations in IL2RG, which provides instructions for making the common gamma chain protein. This powerful protein, found on the surface of immature bone marrow blood cells, works with other proteins to direct the growth and maturation of different immune system cells, including T cells, B cells, and natural killer cells. The immune system cells, which kill invading viruses and bacteria, produce antibodies and help regulate the entire immune system. Without the common gamma chain, the cells cannot develop normally and are unable to protect the body.
For the first time, cell biologists at the Salk Institute have watched as nuclear pore structures form, connecting the interior of the nucleus with the rest of the cell. The funnel-like nuclear pores are important because they allow an orderly flow of molecules. New pores are needed each time a cell divides, and new nuclear membranes form to safeguard the new cells’ DNA. Until now, no one had seen how the pores assembled from scratch and insert themselves into the nuclear envelope, according to the study published in the April 21 issue of *Science*.

“This issue [genesis of new nuclear pores] is as important to understanding the cell cycle as is the question of how DNA replicates,” says Molecular and Cell Biology Laboratory Assistant Professor Martin Hetzer, who led the study, together with co-first authors Maximiliano D’Angelo and Daniel Anderson.

To form the transport channels that span the nuclear membrane, 30 different proteins, called nucleoporins, come together in an orderly fashion and insert themselves into the nuclear envelope, according to the study published in the April 21 issue of *Science*. Fully assembled, these proteins form a compact, eight-fold symmetrical nuclear pore complex with several-hundred protein molecules in all.

To study this process, the Salk researchers created a cell-free system based on a frog’s eggs that was able to recapitulate the insertion of the nuclear pore complex into the nuclear membrane. Using advanced real-time imaging tools, the scientists watched as a nuclear membrane – pores and all – formed.

Salk research reveals new circuits for putting color into motion perception

Neurobiologists have long known that different neural pathways in distinct parts of the brain process varying information. New evidence from Salk Institute researchers indicates that the brain integrates color information into motion pathways at an earlier point than previously suspected.

In a study published in the April issue of *Neuron*, co-lead authors Jonathan J. Nassi and David C. Lyon, together with Edward Callaway, senior author and professor in the Systems Neurobiology Laboratory, show that a neural pathway that is sensitive to color and fine detail is connected to the motion processing areas of the cortex, likely helping the brain detect moving objects.

When our eyes break down incoming images into color, position and brightness, the individual pieces of information are channeled along the parvocellular (P) and magnocellular (M) pathways to the brain. The visual cortex then uses the pathways’ information to compute further details on motion, shape, and color.

Previous studies had shown a strong M input and also suggested the possibility of a connection from the P pathway to the cortical motion processing area called MT. But there was no definitive evidence for P input.

The researchers re-examined this connection by infecting the MT area with a strain of rabies virus that labels connected neurons. The distribution of the virus allowed them to trace the neural circuits in the tissue and show that cells in the primary visual cortex, which connect to MT, receive input from both the P and M pathways. Thus, the M and P pathways merge before they enter the MT area.

Further studies will be required to fully understand the functional implications of this new circuit. Research may include an investigation on how MT neurons take advantage of color signals and fine spatial information to extend the range of visual cues that they can use to detect motion.
Neurons find their place with the help of a sticky molecule

As the human brain develops, nerve cells (neurons) need to travel from their birthplace to sites elsewhere in the brain. Researchers at the Salk Institute have now pinpointed one essential molecule, the adhesion protein MDGA1, that helps guide the cells toward their destination.

Dennis D.M. O’Leary, professor in the Molecular Neurobiology Laboratory, led the work published in the April 26 issue of Journal of Neuroscience. The study shows that decreasing levels of MDGA1 protein on the surface of certain neurons keep these cells from assuming their proper position.

Neuron migration is particularly important for development of the cerebral cortex. The neocortex is recognized anatomically by its six horizontal layers. It develops outward from an underlying zone of cells. Neurons forming layers 2 and 3, the focus of the study, are born last and must elbow their way to the surface. Without MDGA1, these neurons begin to migrate, but get stuck before they reach their normal destination.

To test this hypothesis, O’Leary and first author and postdoctoral fellow Akihide Takeuchi used a powerful new molecular technique called RNA interference to prevent the neurons in embryonic mice from making MDGA1 protein.

When the mice were born, Takeuchi and O’Leary saw that nearly all neurons containing the interfering RNA were stalled at deeper locations in the brain, indicating that loss of MDGA1 had stymied the cells’ attempt to migrate. The goal now is to determine how MDGA1 controls neuronal migration and the long-term consequences of its loss.

New proposed model of p53 regulation suggests novel anticancer strategy

Widely held beliefs about how tumor suppressor p53 is controlled in cells may be in for an overhaul. Work from professor Geoffrey M. Wahl’s group in the Salk Institute’s Gene Expression Laboratory suggests a new model of p53 regulation that holds important implications for anticancer drug development.

Published in the April issue of Cancer Cell, the new model emphasizes the independent role of two proteins, Mdm2 and Mdm4. Both are part of the tightly controlled system that ensures p53 keeps tumor cell growth in check. p53, which normally acts as a brake on all proliferation, is disarmed in more than half of all cancers, while the cancer-causing genes Mdm2 and Mdm4 are over-expressed in most of the others.

The link between p53 and these Mdm proteins has been clear, however, researchers were uncertain about Mdm4’s function and primarily focused on Mdm2. The study suggests that the two proteins play roles with important differences for p53 regulation: Mdm2 mainly controls the amount of p53 in the cell, while Mdm4 regulates the activity of the p53 protein that is produced. The new findings suggest that cancer drugs, now being developed to activate p53, need to target both Mdm2 and Mdm4 for optimal effect.

The researchers observed that a partial decrease in Mdm2 or Mdm4 activity only marginally affects p53 function, but a combined decrease of Mdm2 and Mdm4 dramatically increases the ability of p53 function to prevent the formation of tumors, say Wahl and lead author Franck Toledo, a former Salk scientist now at the Pasteur Institute in Paris, France.
Salk scientists Tony Hunter and Inder Verma have been elected to the American Philosophical Society (APS). Modeled after the Royal Society of London, the APS was the first organization in America to promote scientific endeavors and knowledge.

Verma and Hunter join a distinguished group of former members who include Albert Einstein, Charles Darwin, Thomas Edison, past and present Salk faculty members Renato Dulbecco, Sydney Brenner, Francis H. C. Crick, and former Salk president Augustus B. Kinzel.

There are more than 900 members worldwide, 80 percent of whom are from the United States and 250 have received the Nobel Prize. Election to the APS is recognition of the outstanding academic accomplishments. Verma, a professor in the Laboratory of Genetics and American Cancer Society Professor of Molecular Biology, is one of the world’s leading authorities in the development of viruses for gene therapy vectors.

Hunter, a professor in the Molecular and Cell Biology Laboratory at the Salk Institute and an American Cancer Society Research professor, has done extensive research on the molecular basis of cancer that has led to the development of innovative cancer therapies.

The APS promotes knowledge in the sciences and humanities. It is scheduled to host a public symposium on stem cell research in San Francisco Nov. 10-11.

Former Salk executive receives honorary degree

Concordia University in Irvine, CA., awarded Del Glanz, former Salk Institute executive vice president and CFO, with an honorary doctor of laws degree during its graduation ceremony May 13. Glanz served as a regent of Concordia University for nine years and Chairman of the Board of Regents for four years.

He retired in 2004 after 36 years at the Salk Institute where he was highly regarded for his skills in operations and financial management, and was seen as an invaluable advisor to the Institute’s presidents, faculty members and Board of Trustees.
Salk Board of Trustees names Dr. Irwin Jacobs chairman-elect

Dr. Irwin Jacobs, QUALCOMM co-founder, has been named chairman-elect of the Salk Institute’s Board of Trustees. Dr. Jacobs will assume his new role in November when current chairman Jerry Kohlberg retires.

The decision was made during the Board’s semi-annual meeting in April. His appointment comes on the heels of the Institute’s announcement in March when the Board of Trustees elected Dr. Jacobs to the position of vice chair, along with Richard Freeman, president and chief operating officer of the San Diego Padres; and Ted Waitt, chairman, Avalon Capital Group, Inc. and The Waitt Family Foundation California.

“I am delighted the Trustees unanimously agreed that Irwin is the right successor to lead the Board,” Kohlberg said. “With his commitment to the Institute’s basic biological research and success in business, I’m confident he will serve the Salk well in the future.”

Salk Institute President Richard Murphy said: “The naming of Dr. Jacobs to chairman-elect reflects the growing importance of the San Diego business and volunteer communities in the Salk’s operations. He is one of the few people who can compare with Jerry Kohlberg in business success, commitment to basic biomedical research, and high ethical principles.”

Dr. Jacobs and his wife, Joan, first became involved with the Salk Institute in 2004 when they helped establish the Crick-Jacobs Center for Computational and Theoretical Biology, which uses sophisticated computation-based modeling methods to understand how the brain processes information.

The couple is well known as major supporters of the San Diego Symphony, the Museum of Contemporary Art, the La Jolla Playhouse, and the University of California, San Diego (UCSD). Business Week magazine ranked the Jacobs as the country’s 22nd most generous philanthropists in 2005.

A leader in wireless communications, Dr. Jacobs is credited with the commercialization of Code Division Multiple Access (CDMA) technology after co-founding QUALCOMM in 1985. CDMA is the basis for all third-generation (3G) wireless networks, which now carry the voice and data traffic of more than 273 million subscribers worldwide.

Academy of Arts and Sciences elects Salk Chairman Jerome Kohlberg

Jerome Kohlberg, chairman of the Salk Institute’s Board of Trustees, has been elected to the American Academy of Arts and Sciences (AAAS), one of the country’s oldest honorary learned societies. He joins a distinguished group of new Fellows who include former U.S. presidents, Nobel Prize winners and artists.

Kohlberg is founder and special limited partner of the investment firm Kohlberg & Co. (KKR) from 1976–1987. Prior to that, Kohlberg was a senior partner and member of the executive committee at Bear, Stearns & Co., where he was in charge of the investment banking and corporate finance activities.

Also inducted into the AAAS this year were Presidents George H.W. Bush and William J. Clinton, Supreme Court Chief Justice John Roberts, Nobel Prize-winning biochemist and Rockefeller University President Sir Paul Nurse, and film director Martin Scorsese.

Founded in 1780 by John Adams, James Bowdoin, John Hancock and other scholars, the Academy has elected the finest minds and most influential leaders from each generation. George Washington, Ben Franklin, Albert Einstein and Winston Churchill are some of the inductees from the last three centuries. An independent policy research center, the Academy undertakes studies of complex and emerging problems.
Faculty promotions

- **Edward M. Callaway**, promoted to professor in the Systems Neurobiology Laboratory, primarily studies the organization and function of neural circuits in the visual cortex.
  
  Relating neural circuits to function in the visual system, where correlations between neural activity and perception can be directly tested, provides fundamental insight into the basic mechanisms by which cortical circuits mediate perception.

- **Kuo-Fen Lee**, promoted to professor in the Clayton Foundation Laboratories for Peptide Biology, studies the genes and molecules that guide brain cell development.
  
  His lab focuses on how disruptions in development and maintenance of nerve cells and their supporting cells can contribute to neurodegenerative diseases, such as Alzheimer’s, neuroendocrine and neuromuscular diseases.

- **Roland Riek**, promoted to associate professor in the Structural Biology Laboratory, studies protein structures, particularly the events that occur when they misfold. Such occurrences can result in malfunctions in the cellular machinery leading to Alzheimer’s and Mad Cow disease.

Developmental chairs update

The Salk Institute recently announced the names of faculty members selected for the Developmental Chair program, which provides a stable base to support young scientists who are beginning their independent scientific careers. It also funds their laboratories, postdoctoral researchers and graduate students until they establish support from grants. The new Developmental Chairs are:

- **Andrew Dillin** – Pioneer Fund Developmental Chair
  
  An assistant professor in the Molecular and Cell Biology Laboratory, Dillin focuses on understanding the process of aging and aging-related diseases by studying the small worm *Caenorhabditis elegans*. Aging co-factors, which – when missing – shorten the worm’s lifespan without disrupting other essential physiological functions, may one day enable researchers to influence the aging process in humans.

- **Jan Karlseder** – Hearst Assistant Professorship Endowment
  
  Karlseder, assistant professor in the Regulatory Biology Laboratory, focuses on understanding the functions of mammalian telomeres, the protein-DNA complexes at the ends of linear chromosomes crucial in DNA replication, tumor suppression, and aging.
  
  A better understanding of the telomere shortening process, which occurs each time a cell divides, will lead to the ability to influence the aging process, and possibly to the restriction of cancer cell growth.

- **Jeffrey A. Long** – Frederick B. Rentschler Developmental Chair
  
  An assistant professor in the Plant Molecular and Cellular Biology Laboratory, Long and his team take a genetic approach to study how a plant embryo develops its root/shoot system. By isolating mutants that are disrupted in this process and then cloning the genes responsible, they are gaining insight into the molecular mechanisms plants use to determine their polarity.

- **Roland Riek** – Helen McLoraine Developmental Chair in Neurobiology
  
  Riek, associate professor in the Structural Biology Laboratory, is also director of the NMR facility at the Salk Institute. He collaborates on projects using NMR spectroscopy to determine the structure and dynamics of proteins and their interactions with other proteins.

- **James Umen** – Hearst Assistant Professorship Endowment
  
  Umen, assistant professor in the Plant Molecular and Cellular Biology Laboratory, and his team focus on two questions that are of universal importance for eukaryotic cells: How do cells regulate growth and division? How do those regulatory mechanisms evolve in more complex multicellular organisms? They use the unicellular alga *Chlamydomonas reinhardtii* as an experimental organism because it offers unique advantages for gaining insight into these questions.

A Royal Visit

The Queen of Spain with Salk scientists Fred Gage (from left), Inder Verma and Juan Carlos Izpisua Belmonte at the May inauguration of the Center for Regenerative Medicine in Barcelona.
Twenty-five students are waiting with anticipation as they keep track of time in their seventh grade classroom. They only have to count down five minutes, but it seems more like an eternity before they can pull their test tubes out of a hot water bath. When the time is up, they each pluck the plastic vials out and rush back to their desks and complete the final step in their science experiment – DNA extraction from raw wheat germ.

They started with a pinch of the wheat germ, to which they added water, shook it for a good minute, and added a little dish washing soap before letting it sit in the hot water. The final step, adding alcohol to the solution, reveals what they’ve been learning about a day earlier. As the wheat germ sinks to the bottom of the test tubes and the soapy liquid settles in the middle, DNA – the genetic code of instructions within a cell’s nucleus, is released and floats to the top.

The experiment at Mann Middle School is part of the Salk Institute’s Mobile Science Lab – a three-day educational program administered to schools throughout San Diego County. Each year, more than 3,000 students benefit from the volunteer-based, hands-on program that’s literally delivered to their school’s front door.

Education Specialist Dona Mapston loads the Institute’s science van with all the necessary equipment and visits about 15 middle schools each year along with a group of volunteer graduate and postdoctoral students who teach DNA structure, function and techniques used for DNA fingerprinting.

Ellen Potter, neurobiologist and Salk coordinator for Education Outreach, founded the program in 1998 in conjunction with the San Diego County Office of Education. Since then, the Mobile Science Lab has developed to fill the need for state-of-the-art laboratory activities at the middle school level. Its operating budget is completely reliant on private donations, which the Salk Institute actively solicits throughout the year.

Board of Trustee Richard Helmstetter and his wife, Jeannine, and the Weingart – Price Fund at the San Diego Foundation were among the program’s contributors last year. “This program is very hands-on and engages the students, which helps them learn better,” says Zamaria Rocio, science teacher at El Cajon’s Mann Middle School. “It’s also necessary because we don’t have funds [at the school] to provide students with the equipment used for the exercises.”

The Mobile Science Lab recently partnered with the Reuben H. Fleet Science Center to extend the program’s reach beyond the classroom and into the community. Visitors are able to participate in shortened variations of the Mobile Lab’s curriculum during the Center’s DNA Days. Similar partnerships are being forged with the Birch Aquarium in La Jolla and other San Diego educational organizations.

“My goal was to bring science to students and for the program to be self-perpetuating,” Potter says. “Now it is, and we’re meeting a need. Students really get to interact with researchers one-on-one. That’s the strength of this program.”

“I appreciate the way you taught us in a fun and easy way. Who knows? Maybe I’ll grow up to join Salk someday.” — Scott Allen, seventh grader
What started as an outreach event more than a decade ago is today recognized as a highlight to San Diego’s summer events calendar. Now in its 11th year, Symphony at Salk – A Concert Under the Stars is expected to once again draw some of the Institute’s closest supporters for an evening of culture and classical music on August 26.

Guest conductor Thomas Wilkins returns to raise his baton on stage and lead the San Diego Symphony, along with featured artist Irish Tenor Ronan Tynan. The announcement of Tynan’s participation in this year’s entertainment line up has already created a “buzz” in anticipation of his performance.

Tynan came to prominence in the operatic music scene when he joined the Irish Tenors in 1998. He has since embarked on a solo career and performs throughout the United States. Wilkins’ vibrant personality and warmth toward the Symphony at Salk audience is one reason he was invited back this year.

Betty Vale organized the inaugural Symphony at Salk in 1996 and was the driving force behind the event’s success throughout its continuing 10-year history, says Symphony at Salk Artistic Director Mel Yoakum. It was volunteer-driven from the beginning and continues to be today, now under the direction of the event committee and members of the Institute Relations department.

“Symphony at Salk’s incredible growth is a tribute to Betty Vale’s dedication,” Yoakum says. “Betty was the keystone to the whole thing. She helped create what you see today.

“We take the empty courtyard at the Institute and within 48 hours we transform it into a theater where almost 1,000 patrons and supporters have dinner and enjoy a great evening of classical music,” he says. “It helps introduce community members to the Salk Institute and also has become an important source of funding for the Institute’s basic scientific research.”

Original artwork by artist and Honorary Chair Françoise Gilot-Salk anchors the Symphony at Salk theme, as it has done since its inception. Her oil on canvas, Full Moon and Comet (1999) is this year’s signature piece.

“Symphony at Salk – A Concert Under the Stars contributes to the fulfillment of Jonas Salk’s founding vision for the Institute, a place of interface for scientific research and the humanities,” Yoakum says.

Individual tickets and more information for Symphony at Salk are available at www.salk.edu or by calling Institute Relations at 858.453.4100 x1882.
International Council elects four new business executives to its membership

DAVID M. STONE
Chairman, Western National Group
A self-described “scientist at heart,” David Stone co-founded IPS, a real estate development and management company that evolved into the Western National Group (WNG). WNG currently manages more than 24,000 apartment units and is building 3,200 units in Southern California.

He and his wife, Sandra, became involved with the Salk Institute when they generously contributed $1 million to establish The Sandra H. and David M. Stone Endowed Fund in Cell Biology in 2005. The couple attended last year’s International Council meeting and are members of the Salk’s President’s Club.

The Stones are additionally affiliated with Chapman University, UCI Hospital, the Boys and Girls Club and several other philanthropic endeavors, but are passionate about all types of basic biological concepts.

“Sandy and I believe that the advancement of biological science, as furthered by the Salk Institute, will greatly enhance the human condition.”

GAD SHAANAN
President and CEO, Gad Shaanan Design, Inc.
Gad Shaanan’s business savvy has led to the success of his strategic product-consulting firm, Gad Shaanan Design, Inc. It holds more than 30 patents and has developed innovative goods ranging from medical products and cell phones, to products for the mass transit and military industries.

Trips to San Diego, where he landed a number of projects, inspired Shaanan to move there to better serve his clients and enjoy the weather with his family. Soon after, San Diego Magazine named Shaanan one of the “50 People to Watch in 2003” as a result of his impact on the local business community. In addition to leadership in business and the Salk Institute, Shaanan is on the board of the La Jolla Playhouse.

“Living in San Diego and being part of the Salk Institute is both educational and socially rewarding for my wife, Suzan, and me,” Shaanan said. “The Institute represents for us the ‘art of science’ and the people associated with it represent a treasured body of knowledge under a unique architectural roof.”

STEPHANIE SPERBER
Executive Vice President, Universal Studios Partnerships
Named one of the top 100 most-powerful women in Hollywood by The Hollywood Reporter in 2005, Stephanie Sperber currently serves as head of Universal Studios Partnerships (USP), a group she formed in 2004 to develop and manage all corporate, theatrical, and theme park strategic alliances with Universal Studios. Under Sperber’s leadership, USP has forged the company’s groundbreaking corporate alliances with MasterCard, Chase and Coca-Cola.

Prior to heading up USP, Sperber served as senior vice president, Universal Partnership Development, and cultivated some of the industry’s most lucrative and recognized partnerships.

Sperber joined Universal Studios in 1996 in the Corporate Marketing Group and worked on cross-divisional brand development and synergy teams for high-profile franchises, including Jurassic Park, The Grinch, and the Universal Monsters properties. She was executive director of Marketing at Turner Broadcasting where she oversaw the brand marketing for Hanna-Barbera Productions.

JEAN BURELLE
Chairman & CEO, Burelle SA
Jean Burelle is at the helm of Burelle SA, a company founded by his father, Pierre Burelle. Burelle SA is an industrial holding company controlling four subsidiaries: Compagnie Plastic Omnium, a tier-one supplier to car manufacturers; Compagnie Signature, producer of signage for roads and motorways; Sofiparc, manager of the company’s non-industrial real estate holdings; and Burelle Participations, an investment company focusing on medium-sized companies through minority or majority interest holdings.

Burelle SA operates in 27 countries across Europe, North America, South America, South Africa, and Asia. Burelle assumed the chairmanship of the holding company from his father in 2001 after serving as CEO of the Burelle subsidiary Plastic Omnium since 1987.

He earned an MBA from Harvard University and received the Chapital Medal for Mechanical Arts in 1999. Burelle currently serves as president of Medef International, the international arm of the confederation of French businesses.
“Those who stand still fall behind.” This adage not only applies to countries, businesses, and people, but also to research institutes. For that reason, the Salk Institute carried out a comprehensive strategic planning exercise in 2001 that resulted in the hiring of 15 next-generation faculty members, the development of new scientific programs, and reorganization of our administrative services. Five years later, we’re doing it again. At the request of its Board of Trustees, the Salk Institute will scrutinize all aspects of its operations, define future goals, and devise ways to achieve them. Together, members of the administration and faculty are charged with sketching out the Institute’s future research endeavors and planning how best to support them.

Any plan for the future of science, by nature, is destined to be a work in progress. Discoveries are made daily, and they often provoke innovative ideas and opportunities that lead researchers in new directions. Moreover, Salk faculty and their trainees are independent entrepreneurs driven by their curiosity and with significant freedom to pursue problems of their choice. Sometimes our scientists change course quickly, and oftentimes take chances. This nimbleness has long enhanced the ability to transform their fields.

Nevertheless, by broadly viewing some key scientific questions, we can better predict the Institute’s needs for new people, programs, equipment, administrative support, and financial resources. Planning, both scientific and financial, is especially important in the face of today’s shrinking federal-government support for research. With cutbacks continued to be forecast for National Institutes of Health research grants (presently nearly 70 percent of the Institute’s budget), the Institute simply must identify alternative funding sources.

The Institute will also develop mechanisms to assess the effectiveness of our administrative support units. Each department will be evaluated annually on performance, and occasional external evaluations will be undertaken to recommend improvements. We will establish a formal code of conduct policy to ensure all employees are dealt with respectfully and professionally and that the Institute’s work environment is unparalleled in its support for employees. We will also assess the Institute’s governance structure to be certain our bylaws optimally serve tomorrow’s needs.

All of us – Board members, faculty, administration, staff, trainees, and supporters – are today’s trustees of the Institute Jonas Salk envisioned 45 years ago to explore the frontiers of biology and to serve humanity. We have a collective responsibility: always improve, never be satisfied, and reach for the stars. We are at an exciting moment in our history that brings together all parts of the organization in a common effort of planning and self-assessment. But our goal is neither common nor humble. Eleanor Roosevelt once said, “The future belongs to those who see the beauty of their dreams.” Creating those dreams is the task before us.

Richard Murphy
President and CEO
In 1960, just five years after developing the first safe, effective vaccine against polio, Jonas Salk, M.D., founded the institute that today bears his name. Home to 11 Nobel Laureates since its founding, the Salk Institute for Biological Studies is a world leader in basic research on the biological principles governing life at all levels, from the individual cell to an entire population. For more information: www.salk.edu.

A newborn brain cell (stained green) reaches out to neighboring cells with its long, hair-like extensions. Fred Gage, professor in the Laboratory of Genetics, discovered that our brains sprout new neurons throughout life, particularly in the hippocampus – the region associated with memory and learning. The nuclei of other brain cells are shown in red.

AUGUST 26
Symphony at Salk

Please note: The above represents a selected event. For additional information about this and other Salk events, please contact Institute Relations at 858.453.4100 x1200.

Sign up for update

Richard Murphy, Ph.D., Salk Institute’s president and CEO, has launched a free electronic newsletter, called Update for Salk Institute Friends, that briefly describes recent research discoveries and upcoming public events. To sign up, email: update@salk.edu.