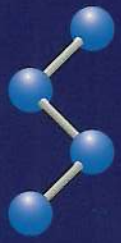


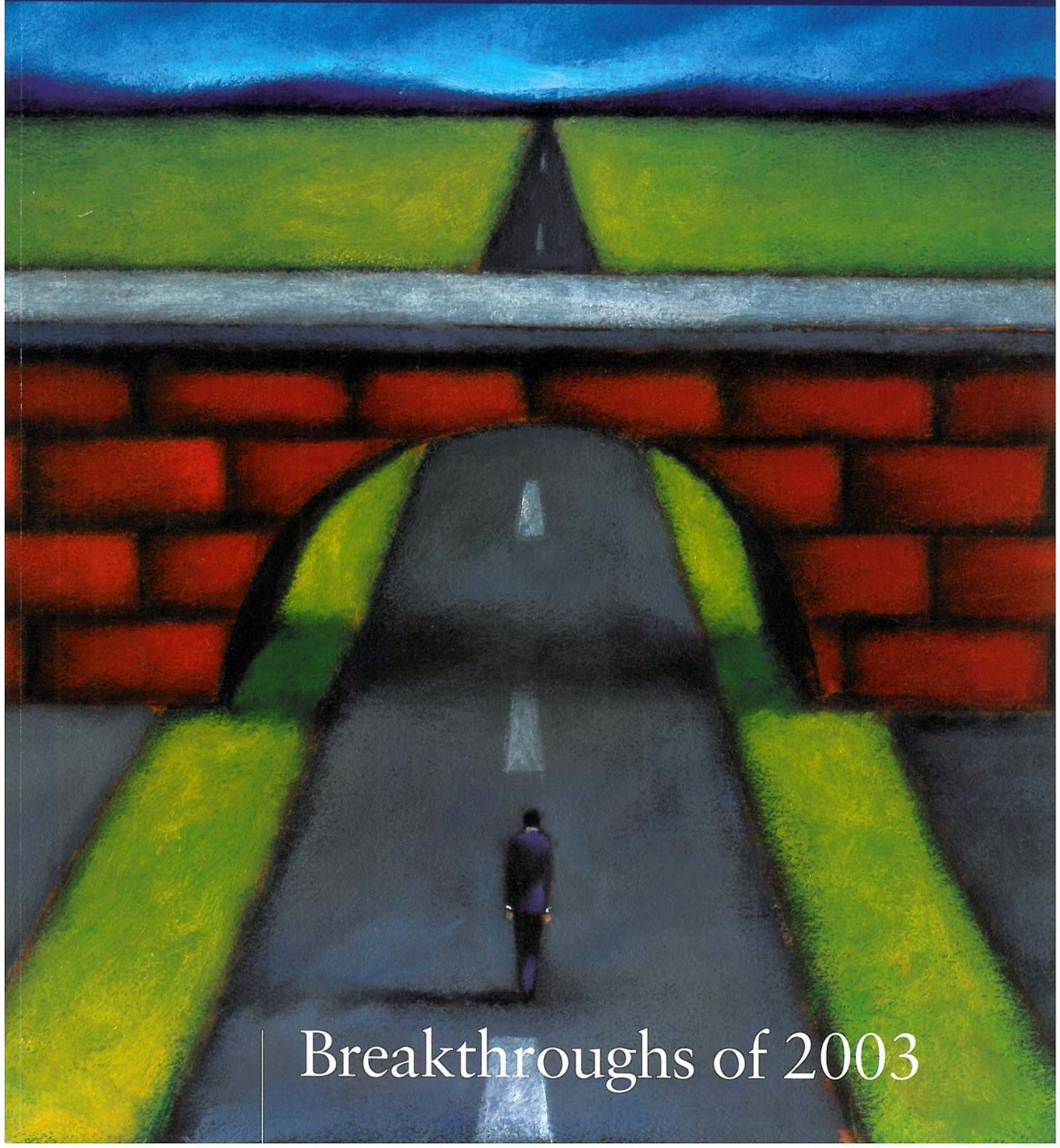
VOLUME SIX | NUMBER THREE



THE
SCRIPPS
RESEARCH
INSTITUTE

Endeavor

Winter 2003/04



Breakthroughs of 2003

Endeavor

VOLUME SIX NUMBER THREE

Winter 2003/04

This issue of Endeavor magazine features breakthroughs of 2003 at The Scripps Research Institute. Among many significant scientific milestones were the discovery of ozone in human biology, the solution of an unusual antibody to the virus that causes AIDS, and the first-ever creation of a 21-amino-acid organism. In addition, 2003 was marked by several historic turning points for the institute, including the establishment of a new campus in Florida and the launch of a joint doctoral program with Oxford University.

featured

page

Ozone at the Heart of Human Health

06

Basic Research Leads to a Surprising Discovery

Pushing the Limits of the Genetic Code

10

Biology Isn't What it Used to Be

It Had to Work

14

Determination Fuels Scripps Research
Scientists' Quest for AIDS Vaccine

also

President's Introduction

01

Campus News

18

"Riding the Tiger"

20

Excerpts from the 2003 Commencement Address

Financial Highlights

22

Development Report

24

ENDEAVOR IS A PUBLICATION OF
THE SCRIPPS RESEARCH INSTITUTE

Year in Review 2003

President's Introduction

Like many things in life, science is a serendipitous enterprise. Although we conduct experiments according to well-prescribed methods, the surprises that come to the diligent and the prepared are often those moments that yield the most unexpected and exceptional insights. And so it is this year in the life of The Scripps Research Institute that we find ourselves, somewhat serendipitously, in collaborations with two unique partners in what will be truly exciting and profoundly meaningful experiments.

After months of discussions with Florida Governor Jeb Bush, Scripps Research recently began negotiations that will lead to the establishment of a new research science center in Palm Beach County, with an emphasis on biomedical research, advanced technology, and drug discovery. I fully expect that the extension of Scripps Research's activities in this new scientific arena will increase the scope and depth of scientific inquiry in the biomedical sciences; the synergy between the two research centers most likely will lead to major new developments to improve human health.

"I have every hope that this initiative [to establish a Scripps Research center in Palm Beach County, Florida] will contribute not only to economic development, job creation, and educational enrichment but also to the overall growth of biomedical knowledge." — Richard A. Lerner



Scripps Research will establish a center in Palm Beach County, Florida, with an emphasis on biomedical research, technology development, and drug design.

This enterprise is expected to serve as a stimulus to Florida's economic development in biotechnology, because Scripps Research and other academic institutions have been the engine driving the burgeoning biosciences industry in San Diego County. Further,

Scripps Research will be involved with the business community, the university system, and school districts in the Palm Beach area.

We are particularly grateful to Governor Bush for his foresight, his confidence in Scripps Research, and this unprecedented opportunity to play an important part in creating and transforming the scientific landscape in South Florida. I have every hope that this initiative will contribute not only to economic development, job creation, and educational enrichment but also to the overall growth of biomedical knowledge.

In another development that simultaneously acknowledges the reputation of Scripps Research in the international scientific community and elevates it to the next level, Scripps Research and the University of Oxford Department of Biochemistry have announced the establishment of a joint graduate program to train young doctoral candidates at both acclaimed institutions. Named for supermarket and drugstore magnate L.S. Skaggs and his wife Aline, The Skaggs Oxford Scholarships Program will support the enrollment of 10 graduate students during the next five years. This collaboration is the first time in Oxford's 800-year history that the university has offered a degree jointly with another academic institution, and the new program is the first such venture for Scripps Research. Indeed, it is a distinct honor to be associated with Oxford University and to share a commonality in the pursuit of education at the highest level for the chemical biologists of the future.

CHANGES IN BOARD OF TRUSTEES

A change in board leadership in any organization is a double-edged sword. Although the change brings with it the opportunity for new ideas, a new perspective, and innovative thinking, it also acknowledges the closing of ►



Richard A. Lerner, M.D.,
president of The Scripps
Research Institute



The Hon. Alice D. Sullivan is now chair of The Scripps Research Institute Board of Trustees.

a chapter in the history of an institution. And so it is that we welcome the Honorable Alice D. Sullivan, a former Alameda County superior court judge, as chair of the Scripps Research Board of Trustees and thank John Diekman, former chairman of the board of Affymetrix and Bay City Capital, for his many years of extraordinary leadership. Judge Sullivan has served with distinction as a member of our board for the past several years and for the past decade has worked in private practice in the resolution of business disputes, particularly in the life sciences and technology fields.

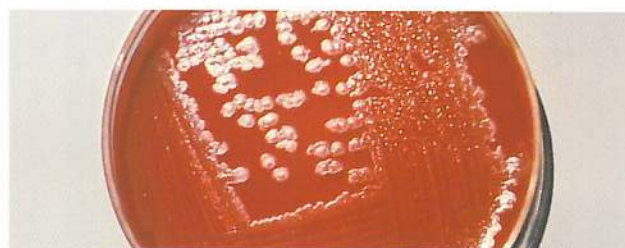
In addition, this year we welcomed the following new members to the Board of Trustees: Rod Dammeyer, president of CAC, L.L.C., a private company offering capital investment and management advisory services; Thomas Insley, former managing partner of the San Diego office of PricewaterhouseCoopers L.L.P., and current vice president and chief financial officer of SkinMedica, Inc., a specialty pharmaceutical company; Richard J. Elkus, Jr., an executive and entrepreneur whose career has been closely connected with the development and evolution of Silicon Valley; Warren Beatty, Academy Award-winning film actor, director, screenwriter, and producer; and Mervyn Morris, founder of Mervyn's chain of retail stores.

“Scripps Research continues to attract large-scale consortia grants from the National Institutes of Health, an accomplishment that reflects its leadership position in numerous fields of study in the biomedical sciences and its collaborative relationships with centers of scientific excellence throughout the United States.”

MAJOR RESEARCH GRANTS

Scripps Research continues to attract large-scale consortia grants from the National Institutes of Health, an accomplishment that reflects its leadership position in numerous fields of study in the biomedical sciences and its collaborative relationships with centers of scientific excellence throughout the United States. Early in 2003, the National Institute of Allergy and Infectious Diseases awarded a multiyear, \$24 million grant to a group of researchers at Scripps Research, the Institute for Systems Biology in Seattle, and Rockefeller University

in New York City. The group's charge is to create an “encyclopedia” of innate immunity, a comprehensive picture of this ancient, essential first line of defense against bacterial and fungal diseases that is mustered by all living creatures. The knowledge generated could help scientists develop treatments for septic shock, certain auto-immune disorders, and diseases caused by potential agents of bioterrorism.



Two new multi-million-dollar grants will fund studies at Scripps Research on anthrax toxins. (File photo courtesy of Centers for Disease Control and Prevention.)

Later in 2003, the National Institute of Allergy and Infectious Diseases awarded a \$9.2 million, multi-center program project grant to a team of scientists at Scripps Research, Harvard Medical School, and the

Salk Institute for Biological Studies to discover and develop novel anthrax antitoxins and ways of delivering them. The overall goal of the program is to design antianthrax nano-sponges, antitoxin particles that could be administered to someone who has been

exposed to anthrax. In addition, another government agency, the U.S. Centers for Disease Control and Prevention, awarded a group of Scripps Research investigators a multiyear, \$11.4 million grant to study the interaction of the human immune system with toxins of the microorganism that causes anthrax. The goal is to understand how these toxins suppress immune responses in humans, circumventing the usual mechanisms by which the body would destroy the bacterium.

SIGNIFICANT SCIENTIFIC DISCOVERIES

As is the norm, the institute's researchers this year contributed a prodigious volume of work to the body of scientific knowledge in a broad range of disciplines, work that changes the way we think about biological mechanisms and the course of human disease. The following merely skims the surface of knowledge they created and the importance of their discoveries.

Work in the laboratory of Peter Schultz, professor of chemistry and Scripps Family Chair of The Skaggs Institute for Chemical

Biology, effectively removed a billion-year constraint on the ability to manipulate the structure and function of proteins. Dr. Schultz and his research group completed the synthesis of a form of the

bacterium *Escherichia coli* with a genetic code that uses 21 basic amino acid building blocks to synthesize proteins, instead of the 20 found in nature. This creation was the first one of an autonomous organism that uses 21 amino acids and has the metabolic machinery to build those amino acids. Further, the group introduced revolutionary changes into the genetic code of organisms such as yeast that allow the mass production of proteins with unnatural amino acids. By so doing, Dr. Schultz and his team set the stage for an entirely new approach to applying the same technology to other eukaryotic cells, and even to multicellular organisms. Simply stated, these scientists have opened up the whole pathway to higher organisms.

Researchers in the laboratory of Stephen Mayfield and in my laboratory used algae to express an antibody that targets herpesvirus. The usefulness of the antibody lies not only in the potential production of an antiherpes topical cream or treatment but also in the development of technology that could facilitate the production of multiple human antibodies and other proteins on a massive scale. This technology enables the generation

"As is the norm, the institute's researchers this year contributed a prodigious volume of work to the body of scientific knowledge in a broad range of disciplines, work that changes the way we think about biological mechanisms and the course of human disease."

of antibodies, soluble receptors, and other proteins so much more cheaply than previous technology that an entire new class of therapeutic agents may become available.

Jeffery Kelly and his colleagues in the Department of Chemistry and The Skaggs Institute for Chemical Biology discovered a new approach for treating amyloid diseases, particularly transthyretin amyloid diseases, which are similar to Parkinson's and Alzheimer's diseases. Amyloid diseases are caused by misfolding

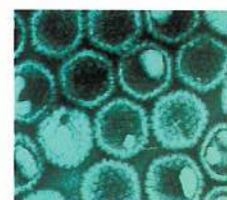
of proteins into a structure that leads the proteins to cluster, forming microscopic fibril plaques that are deposited in internal organs and interfere with normal function. Dr. Kelly and his team showed the efficacy of using small

molecules to stabilize the normal fold of transthyretin, preventing this protein from misfolding. By so doing, they were able to inhibit the formation of fibrils by a mechanism that can ameliorate disease.

In what was a first for biology, researchers in my laboratory, including Paul Wentworth in collaboration with Bernard Babior, reported that the human body makes ozone. Ozone appears to be produced in a process involving human immune cells known as neutrophils and human antibodies. The presence of ozone in the body may be linked to inflammation, and the research may have important ramifications for treating inflammatory diseases. In addition to killing bacteria, the neutrophils feed singlet oxygen to the antibodies, which convert it into ozone.

Carlos Barbas, Janet and W. Keith Kellogg II Chair in Molecular Biology, designed a hybrid anticancer compound that combines the efficacy of a cancer cell-targeting agent with the long-lasting dose of an antibody. This potent combination has a profound effect on the size of tumors in animal models, shrinking both Kaposi sarcomas and colon cancers in preclinical studies. The ►

Using a promising new method to produce antibodies on a massive scale, Scripps Research scientists used algae to express an antibody that targets herpesvirus, pictured in an electron micrograph, below.



approach is general enough to be used to design hybrids against numerous different cancers; a single antibody can be mixed with multiple small molecules, resulting in a multiplicity of therapeutic agents.

A group of researchers led by Immunology Professor Bruce Beutler discovered rare genetic mutations in a subset of patients who have a severe form of sepsis, an acute and often deadly disease. These mutations, in a gene called *Tlr4*, predispose persons to susceptibility to meningococcal sepsis, which strikes more than 2,500 persons each year in the United States and has an overall fatality rate of 12 percent. Besides indicating the increased risk of severe sepsis in patients with these mutations, the results suggest that protection of patients at risk may be possible. Eventually, persons with these mutations might be given prophylactic treatment, for example, before undergoing surgery or traveling to a location where exposure to meningococcal bacteria is likely.

Scientists led by Kim D. Janda, Ely Callaway, Jr., Chair in Chemistry and an investigator in The Skaggs Institute, designed a new way to make a vaccine against nicotine that could become a valuable tool for treating addiction by helping the body clear the drug from the bloodstream. The vaccine, which eventually would be given to persons in smoking cessation programs, greatly suppresses the reinforcing aspect of nicotine. The researchers used an “immunopharmacotherapy” approach, by designing a drug that stimulates the immune system to clear the nicotine from the body.

In a related research study, Dr. Janda and his group discovered that a chemical called nornicotine, a major metabolite of nicotine, modifies proteins that misfold and form the fibril plaques found in abundance in the brains of patients who have Alzheimer’s disease. Simply stated, this process physically inhibits the formation of the fibrils. The research is promising—not because nornicotine likely would be an effective therapeutic agent, but because it shows how a single molecule can cause a chemical interaction that may alter a mechanism

important in Alzheimer’s disease. This research could lead to the development of small molecules similar to nornicotine that are not toxic but could interact in a similar fashion, preventing the aggregation of amyloid- β protein and perhaps Alzheimer’s disease.

A group of scientists including John Tainer, Lisa Craig, Mark Yeager, and Mike Pique solved two key structures of a bacterial protein called pilin, which is required for infection by pathogens that cause diseases such as meningitis, gonorrhea, pneumonia, and cholera. The members of the group think that the research provides essential knowledge to help scientists develop novel antibiotics and vaccines against these deadly and emerging bacterial diseases. Because the structures are too large and flexible to be solved by using the traditional techniques of structural biology, the team used both x-ray crystallography and electron microscopy to build a model of the pili that would have otherwise been impossible at that level of molecular detail.

In another structural achievement, a multi-institutional group of researchers led by Ian Wilson and Dennis Burton solved the structure of an antibody that effectively neutralizes HIV, an important step toward the goal of designing an effective vaccine against HIV and a new means by which scientists may design antibodies in general. The structure of the antibody has never been seen before, prompting the scientists to speculate on whether they can use this knowledge to engineer antibodies with higher affinity against other antigens.

In a development that could improve the prospects for designing new ways to fight malaria, a group of researchers led by Elizabeth Winzeler described a comprehensive global profile of genes in the parasite that causes malaria, associating the function of a few such known genes with the thousands that have no known function. The researchers think that these data will accelerate our understanding of the malaria parasite and its interaction with humans and should provide new avenues for more effective drugs and



Research on a chemical called nornicotine may have implications for the treatment of Alzheimer’s disease.

vaccines. In collaboration with researchers at the Genomics Institute of the Novartis Research Foundation, Dr. Winzeler created a malaria-specific gene chip with probes specific for the entire genome of the malaria parasite, enabling her to examine the expression of genes at each stage of the parasite's life cycle. This accomplishment should accelerate the pace of research on the parasite by categorizing uncharacterized genes in functional ways.

Using a new technique known as subtractive proteomics, Larry Gerace and John Yates recently identified more than 50 previously unknown proteins, several of which are associated with rare human muscle and nerve degenerative diseases. Recognizing the proteins that may cause or contribute to diseases such as congenital muscular dystrophy and spinal muscular dystrophy is a first step in the long process of looking for ways to detect, prevent, or treat diseases. The study may clarify a significant number of the more than 300 human dystrophies for which a causative gene has not been identified. The researchers think understanding how these diseases occur requires understanding more about the network of interlinked proteins.

FACULTY HONORS AND AWARDS

Many Scripps Research scientists, at various stages of their careers, were honored by their peers this year with awards for achievement in numerous areas of scientific endeavor. Dale L. Boger and Bernard Babior were elected to membership in the American Association for the Advancement of Science, Francis Chisari and Peter Vogt were elected to the Institute of Medicine of the National Academies, and Michael B.A. Oldstone won the Pioneer in NeuroVirology Award of the International Society for NeuroVirology. Ernest Beutler was awarded the E. Donnell Thomas Lecture and Prize of the American Society of Hematology,

Tamas Bartfai received a Distinguished Investigator Award from the National Alliance for Research on Schizophrenia and Depression, Eng Tan was selected for the Japan Rheumatism Foundation/Wyeth Lederle Japan International RA Award, and Ben Cravatt won the Eli Lilly Award in Biological Chemistry from the American Chemical Society. Clare Waterman-Storer was awarded a Keith Porter Fellowship of the Porter Endowment for Cell Biology and Erica Ollman Saphire won the Burroughs Wellcome Fund Career Award in the Biomedical Sciences.

The events of this year have been nothing short of extraordinary, with profound and far-reaching implications for the future of Scripps Research. In an organization that often exceeds expectations on multiple levels and whose faculty and staff remain at the leading edge of science in an era in which the pace of discovery accelerates on a continual basis, these new developments will provide greater impetus for Scripps Research to play an even larger role on the international stage of scientific discovery. I could not be more proud of our faculty, employees, trustees, donors, and friends, all of whom make me grateful to have the opportunity to work with them every day.

"The events of this year have been nothing short of extraordinary, with profound and far-reaching implications for the future of Scripps Research."



Richard A. Lerner, M.D.



A group of researchers described a comprehensive global profile of genes in the malaria parasite, which is transmitted through mosquitoes. (Photo courtesy of Centers for Disease Control and Prevention.)



“Could we have found ozone in the human body?” [Richard] Lerner asked himself at the time. Ozone had never been considered a part of biology before.

Ozone at the Heart of Human Health

Basic Research Leads to a Surprising Discovery

Basic science is like the Tour de France. It takes place in many different stages with teams of scientists enduring long uphill climbs, weathering lengthy plateaus, and sprinting to the finish line amid cheering crowds. Not surprisingly, a story about a basic science discovery often ignores the climbs and focuses on the finish line—the publication in *Science* or one of the other top research journals.

This is a story about a basic science discovery in chemical biology that is still an event in progress. The team players include Scripps Research President Richard A. Lerner, M.D., Associate Professor Paul Wentworth, Ph.D., and several other members of The Skaggs Institute for Chemical Biology. Their discoveries in basic chemical biology may eventually lead to important changes in the way we diagnose and treat heart disease.

In the laboratory, Lerner and Wentworth were working with a protein known as a catalytic antibody, a special version of the antibodies the immune system generates to fight infections. What makes catalytic antibodies special is that they have the ability to chemically react with other molecules in the body and in the test tube in ways that might one day make them useful for everything from synthesizing cancer drugs to delivering them to a tumor.

Lerner, who is Lita Annenberg Hazen Professor of Immunochemistry and holds the Cecil H. and Ida M. Green Chair in Chemistry at Scripps Research, discovered catalytic antibodies several years ago with Peter Schultz, who was then an investigator at the University of California, Berkeley and is now the Scripps Family Chair and member of Scripps Research’s Skaggs Institute.

Wentworth was working with an antibody that was designed to bind to a chemical called stilbene. These antibodies had the unusual property of displaying blue fluorescence when irradiated with ultraviolet light. It was a neat trick, but Lerner, Wentworth, and their colleagues wanted to find applications. “We were

simply asking,” says Wentworth, “what chemistry can we do with this system?”

That’s when they made their discovery.

They found that this antibody had the unusual ability to generate hydrogen peroxide—the familiar antiseptic and bleaching agent—under UV light. Moreover, they were surprised to discover that all antibodies have this ability.

This led them to ask if antibodies produce hydrogen peroxide under normal conditions in the body. In fact, Lerner, Wentworth, and their colleagues found that antibodies did indeed generate hydrogen peroxide when fed another form of oxygen, called singlet oxygen, which is available in the body because it is produced by cells of the immune system as part of our mechanism for defense.

Singlet oxygen is an electronically excited and highly reactive form of oxygen that can potentially destroy any cell, making it dangerous to an organism. Throughout evolution, animals have developed various mechanisms for removing singlet oxygen in order to survive.

In their 2001 *Science* paper, Wentworth, Lerner, and their colleagues suggested that ancient antibodies may have once played a role in biology by controlling the release of this potentially dangerous singlet oxygen. Moreover, the scientists postulated that this process may be part of a previously unrecognized mechanism

that enhances the defensive role of antibodies by subjecting pathogens to hydrogen peroxide and killing them.

For the last hundred years, immunologists have firmly believed that the sole purpose of antibodies was to recognize pathogens and trigger cells in the immune system to kill the pathogen. This previously unrecognized ability of antibodies to kill pathogens directly offered exciting possibilities for new antibody-mediated therapies for conditions ranging from bacterial and viral infection to cancer. Furthermore, this process could be linked to a number of other diseases. ▶

[These] discoveries in basic chemical biology may eventually lead to important changes in the way we diagnose and treat heart disease.

The researchers decided to investigate further.

ANTIBODIES MAKE OZONE AND KILL BACTERIA

To further explore the mechanism of how antibodies produce hydrogen peroxide, Lerner and Wentworth collaborated with Skaggs Institute investigator Albert Eschenmoser, Ph.D., and the group of William A. Goddard III, Ph.D., at the California Institute of Technology.

A completely unexpected discovery from the quantum mechanics calculations by the Goddard group was that the antibodies reacting with singlet oxygen could generate a product with the chemical signature of ozone.

Ozone is a particularly reactive form of oxygen that exists naturally as a trace gas in the atmosphere, constituting on average fewer than one part per million air molecules. The gas plays a crucial role in protecting life on earth from damaging solar radiation by concentrating in the upper reaches of Earth's stratosphere—about 25 kilometers above the surface—and absorbing ultraviolet radiation. Ozone is also a familiar component of air in industrial and urban settings where the highly reactive gas is a hazardous component of smog in the summer months.

“Could we have found ozone in the human body?” Lerner asked himself at the time. Ozone had never been considered a part of biology before.

By the summer of 2002, the work of the Scripps Research scientists really began to heat up. Not only had they started to refine the approaches and the experiments to demonstrate how and where the ozone is produced in the human body, but they had begun to get a sense for what it was doing there—that it was involved in the immune response.

This conviction grew with the discovery they published late last year in *Science* that antibodies specific to *E. coli* bacteria could kill those bacteria when fed singlet oxygen, which the antibodies would catalyze into hydrogen peroxide. Because the amount of hydrogen peroxide the antibodies generated was not enough to kill the bacteria alone, ozone became implicated as a mediator in killing the bacteria. Ozone together with hydrogen peroxide destroys bacteria by poking holes in their cell walls.

The Scripps Research team also established a new and fruitful collaboration with Scripps Research Professor Bernard M. Babior, M.D., Ph.D., to explore a potential source of the singlet oxygen—a type of white blood cell

called a neutrophil, a key cellular component in the inflammatory response. In a study published in early 2003, the team suggested that during the inflammatory process, neutrophils and antibodies work together to produce human ozone. The neutrophils feed singlet oxygen to the antibodies, which convert it into ozone, enhancing the antibacterial effect of the neutrophils.

But the team wanted to know more.

For instance, if ozone is generated in the body's inflammatory response, could it also be involved in any of the human diseases in which inflammation plays a role—such as lupus, multiple sclerosis, rheumatoid arthritis, and atherosclerosis?

If so, this discovery would open up exciting possibilities for new therapies. Lerner, Wentworth, and their colleagues immediately began thinking of ways to look for ozone in inflammation—perhaps even in a clinical setting.

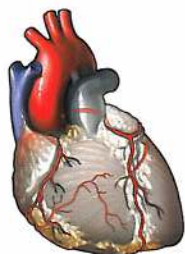
WHAT'S IN AN ARTERY?

Says Wentworth, “Given that atherosclerosis is an inflammatory disease, we asked the question, ‘Is ozone generated in atherosclerosis?’”

Atherosclerosis is a common vascular disease that increases the risk of heart attacks and strokes. In fact, heart disease is the most common cause of death in the United States. The Centers for Disease Control and Prevention statistics for 2000 list 878,471 deaths from heart disease and stroke, followed by 553,091 for cancer. Over the last few years, evidence has been accumulating that the process of atherosclerosis has a significant inflammatory component. Given this evidence, Lerner, Wentworth, and their colleagues thought they might look at tissue involved in the disease for evidence of ozone.

The name of the disease comes from the Greek *athero* (which means gruel or paste) and *sclerosis* (which means hardness). And, as the name implies, it is a disease that is characterized by a hardening of the arteries over time due to the buildup of hard plaques—fibrous tissue, calcium, fat, cholesterol, proteins, cells, and other materials—on the inner “endothelial” walls of an artery. These plaques feel something like cartilage to the touch, which explains why atherosclerosis is commonly called hardening of the arteries.

The open cross-section of the artery shrinks as this buildup occurs, and the reduction in blood flow can



Atherosclerosis is a common vascular disease that increases the risk of heart attacks and strokes.

become so significant that a thrombus or blood clot can form at the site. When this process occurs within the coronary arteries that provide the blood supply to the heart, the result is a myocardial infarction, a so-called heart attack. Heart attacks can also result from rupture of the plaque and obstruction of blood flow.

When the carotid arteries are involved, patients may often be asymptomatic, in which case the atherosclerotic plaques are discovered during a physical examination and confirmed by ultrasound. Symptomatic patients may experience lightheadedness and fainting, transient loss of vision in one eye or the other, weakness of the hands, transient loss of the ability to speak, or even stroke. In either case, patients who have their blood flow reduced by 60 to 70 percent or more are good candidates for an operation to remove the plaques from the inner walls of arteries. Known as an endarterectomy, this is a time-tested procedure performed by vascular surgeons that has been around since the 1950s, and it is a common procedure for patients in their 60s and beyond.

Atherosclerotic plaques have all the ingredients needed to make ozone. They contain white blood cells, which have the ability to generate the singlet oxygen that the antibodies need to produce ozone—and plenty of antibodies passing by in the blood stream.

Mix antibodies with singlet oxygen in the test tube and you get ozone. But does it really happen *in vivo*?

THE DISCOVERY OF HUMAN OZONE

Lerner and Wentworth approached Giacomo DeLaria, M.D., who is a vascular surgeon at nearby Scripps Clinic, and asked if they could obtain samples of carotid atherosclerotic plaques. DeLaria provided a sample of plaque material from a patient who recently underwent an endarterectomy, generously enabling Wentworth, Lerner, and their colleagues to perform their studies.

“These are specimens we normally just inspect and throw away,” says DeLaria. “Within themselves, they have no diagnostic value, and they don’t change what we do after the procedure.”

Wentworth and Lerner tested this sample, and the results proved promising. They did find some abnormalities that could be associated with the presence of ozone in these plaques. But they wanted to be sure. So DeLaria and his fellow vascular surgeon Ralph Dilley, M.D., provided several more samples.

When Lerner, Wentworth, and their colleagues studied the atherosclerotic plaque samples, they found evidence that ozone had been generated. Chemicals that would be produced when the highly reactive ozone mixed with the other components of the plaque were evident.

The researchers also found in the atherosclerotic plaques a completely new class of dangerous steroids never before found in human tissue. These are believed to be generated only when cholesterol is exposed to ozone. They may be a good specific marker for late-stage arterial inflammation, enabling doctors to determine how life-threatening a patient’s plaques are.

Moreover, these findings are highly suggestive of a role for ozone in the pathology of atherosclerosis. These newly identified compounds are toxic to white blood cells, smooth muscle cells, and cells from the arterial walls—all the major types of cells in and around the plaques.

“The fact that [these toxins] are generated in proximity to cells that are destroyed I think is going to prove critical to part of the pathogenesis of atherosclerosis,” says Wentworth. “We’re going to pursue a hunt, now, for all these [toxins] and what they do.”

Currently, physicians rely on easily measurable risk factors to identify patients who are more likely to suffer from vascular disease: elevated cholesterol, hypertension, diabetes, smoking, obesity, and a family history of vascular disease at an age less than 55. Nevertheless, there is a substantial fraction of patients who do not have these risk factors and yet who develop atherosclerosis. There is considerable interest in developing other sensitive markers that would allow early identification of patients at risk.

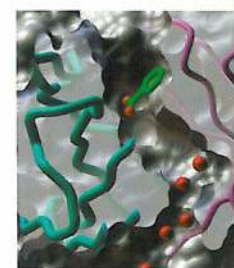
Could ozone or one of its side products be such a marker?

Lerner, Wentworth, and their colleagues found that one of the toxic steroids is present in the blood of patients who have late-stage atherosclerosis, but not in healthy individuals.

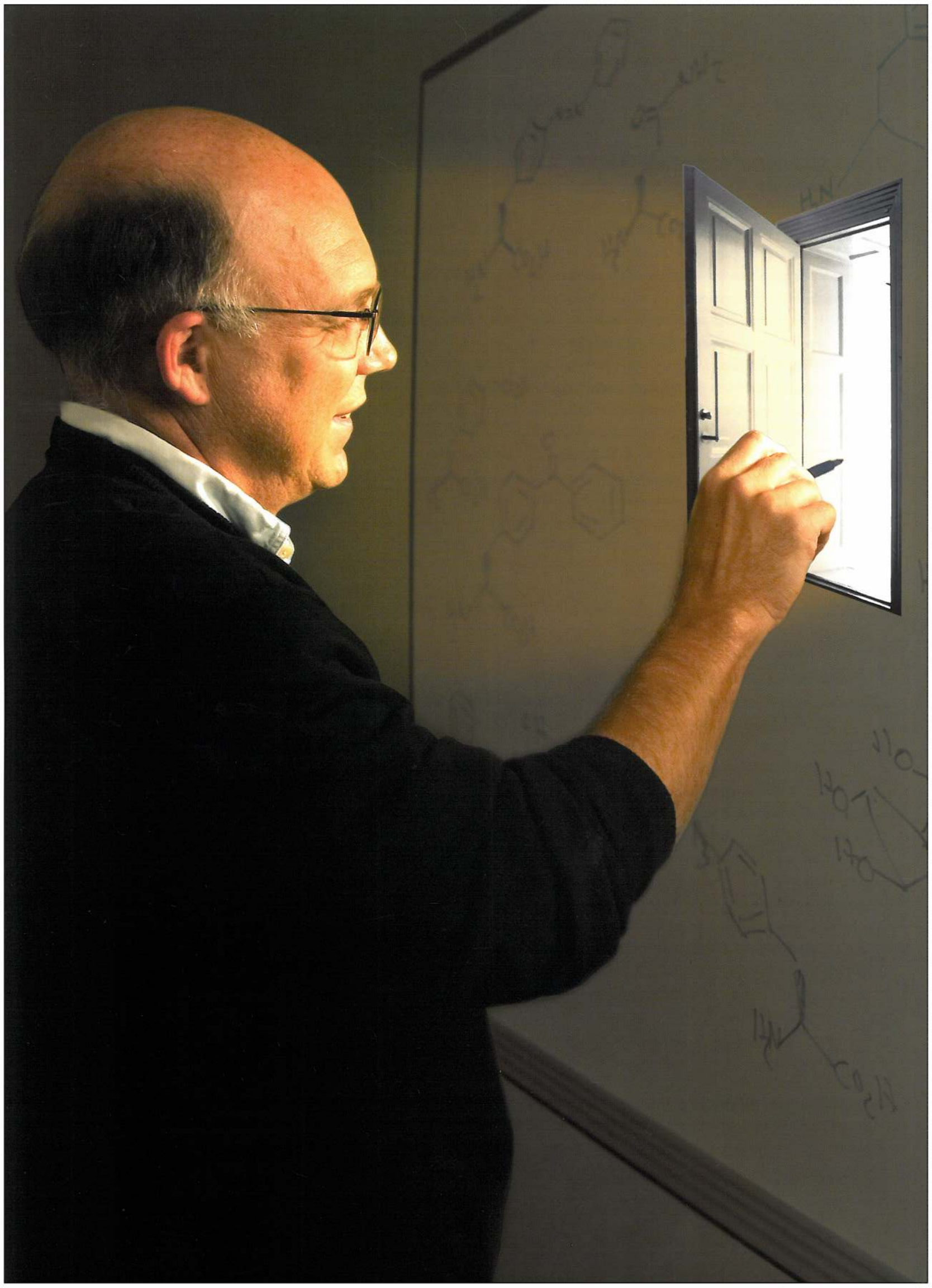
Are the toxins just bystanders or are they linked to the progression of the disease? If ozone and its byproducts are linked to the disease, then how can they be reduced or eliminated? Could the research come full circle by pointing to a therapeutic role for catalytic antibodies?

As in the Tour de France, each stage of this story has its own finish line. And with each exciting finish grows the anticipation of what’s to come.

■ *Jason Socrates Bardi*



An illustration of the channel through which ozone travels from one side of an antibody, where it is made, to the other side, where it is released.



Pushing the Limits of the Genetic Code

Biology Isn't What it Used to Be

The King of Sardis, who lived roughly 2,500 years ago, was once visited by a wise man named Solon, and he treated Solon to a tour of his immense palaces and fabulous treasures that lasted several days. At the end of this opulent display, he asked Solon one question: who is the happiest man alive? To the chagrin of the King of Sardis, Solon named an obscure character, Tellos of Athens.

Why? demanded the King of Sardis, *Why is Tellos so happy?*

According to Herodotus, who tells this story in his famous *Histories*, Tellos was the happiest man alive because he lived in Athens, had a long life, did well in business, had healthy children, achieved glory in battle, and won the honor of his peers. Tellos had lived his life to its fullest potential.

Herodotus's story is rich with ancient Greek moral subtext about accepting limitations, but does this mean that all limitations are good and all attempts to surpass them are bad?

Much in the modern world depends on using science to improve our lives, and change is at the heart of science. The basis for experimentation, after all, is to change one variable while keeping the others constant and observing the effect. There are whole scientific disciplines, like physical organic chemistry, devoted to making changes to molecules and observing what effects these changes have on molecular structure and function. For chemists, these are powerful tools. Chemists routinely change the structure of small organic molecules to enhance the activity of that chemical—to turn something found in a mold or tree bark, for example, into a powerful drug.

But physical organic chemistry has its limitations.

It is not easy to do physical organic chemistry on certain large biological molecules, such as proteins. While chemists have a huge diversity of building blocks to work with, biologists—like nature—have made proteins with 20—and only 20—amino acids. Almost without exception, life as we know it is composed, at the molecular level, of the same basic building blocks.

"Limiting [chemists] to only 20 synthetic building blocks would bring most labs to a grinding halt," says Peter G. Schultz, who holds the Scripps Family Chair and is a member of The Skaggs Institute for Chemical Biology at The Scripps Research Institute.

Schultz was not one to be satisfied with such limitations. To him, the answer was clear.

"One has to figure out how to add amino acids to the genetic code," says Schultz. In the late 1990s, while still a professor at the University of California at Berkeley, Schultz began working out how to do this.

TWENTY-ONE UP

Schultz was not the first scientist to think of adding unnatural amino acids to proteins. Through the years, scientists have looked for chemical methods to incorporate them into proteins, and they have been successful in the synthesis of peptides and small proteins that contain novel amino acids. Proteins have been chemically synthesized step by step in the test tube, for instance, with unnatural amino acids inserted where desired—like a chain of silver paper clips with an occasional green one.

Incorporating unusual amino acids into polypeptides has turned out to be a powerful research tool and has allowed chemists to synthesize important therapeutic peptides. The technique provides a way of studying and controlling the biological processes that form the ►

"Limiting [chemists] to only 20 synthetic building blocks would bring most labs to a grinding halt."

— Peter Schultz

basis of some of the most intriguing problems in modern biophysics and cell biology, like signal transduction, protein trafficking in the cell, protein folding, and protein–protein interactions. The more scientists can control proteins in the cell, the more information they can get about what proteins are doing in their natural environment, and the more they can use proteins to affect biological processes in both natural and unnatural ways.

However, Schultz was not aiming to make unnatural amino acid proteins in the test tube. His goal was to be able to incorporate unnatural amino acids *in vivo*—which in Latin literally means “in the living.” Instead of simply making proteins with unnatural amino acids by chemical synthesis in the laboratory, Schultz and his colleagues desired to generate organisms with expanded genetic codes so that living cells would themselves make proteins with unnatural amino acids.

That, Schultz knew, would open up whole new avenues of research. He began working on this project in 1996 and continued this effort when he came to Scripps Research in 1999. It was not the easiest exercise in the world.

“The strategy was rather pie in the sky and involved the evolution of new components of the cellular biosynthetic machinery,” says Schultz. He admits that he had his share of critics who doubted whether it could be done. But he proved them wrong.

Schultz’s team had its first real breakthrough in 2001, when lab members managed to get a strain of the bacterium *Escherichia coli* to incorporate the unnatural amino acid O-methyl-L-tyrosine into its proteins when fed a supply of it. This was more than a proof-of-principle, as derivatives of O-methyl-L-tyrosine can be used to study protein folding in nuclear magnetic resonance studies—a method for imaging proteins based on the same technology as the familiar hospital MRI.

In 2003, the work to expand the genetic code *in vivo* really took off.

FROM BACTERIA TO YEAST

In January, Schultz and his colleagues published a paper describing their synthesis of a form of the bacterium *E. coli* with a genetic code that uses 21 amino acids. It had

the metabolic machinery to build all 21 amino acids, and did not need to be fed any. This was the first time that anyone had created a completely autonomous 21-amino-acid organism.

“We have effectively removed a billion-year constraint on the structure and function of proteins and perhaps even whole organisms,” Schultz said at the time.

Then, in August, Schultz and his laboratory published a paper describing a general method for adding unnatural amino acids to the genetic code of a type of yeast called *Saccharomyces cerevisiae*. They incorporated five different unnatural amino acids into the yeast, a “eukaryotic” organism that has cells with membrane-bound nuclei, rather than the “prokaryotic” bacterial cells, which lack membrane-bound nuclei. This was an important step because it set the stage for applying the same technology to other eukaryotic cells.

“Yeast is the gateway to mammalian cells. We’ve opened up the whole pathway to higher multicellular organisms,” says Schultz.

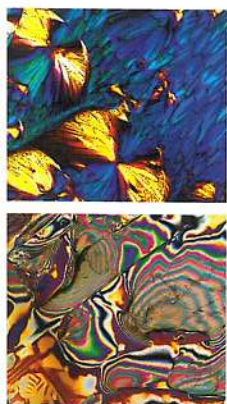
In another line of research, Schultz has developed a system that uses four-base codons. A codon is a combination of RNA bases (in nature, three bases) that are used by all biological systems to translate genes into proteins. Since there are four types of RNA bases, there are 64 three-base codons ($4 \times 4 \times 4$).

The way that Schultz inserts unnatural amino acids into proteins is by subverting one of these 64 codons to encode for his unnatural amino acid. But the three-base system only lets him use one or potentially two different amino acids per protein.

The advantage of using the longer codon is diversity. The four-base system would read out four bases at a time, and this would mean that there would be 256 four-base codons possible ($4 \times 4 \times 4 \times 4$). Many of these additional codons could be re-assigned to a new unnatural amino acid, potentially creating a technology where one organism could make proteins with several unnatural amino acids.

In fact, as 2003 came to a close, Schultz was in the process of writing a manuscript that details the successful use of four-base codons to expand the genetic code of *E. coli*.

“There are a number of things we can do that go far beyond what anybody thought we could do five years ago.”— Peter Schultz



Almost without exception, life as we know it is composed of 20 amino acids, among them valine (top), and arginine, shown above through microscopic images of crystals.

THE UNNATURALS

In 2003, Schultz and his laboratory found a number of unnatural amino acids that can be inserted into proteins *in vivo*, with a wide variety of uses in chemistry and biology. These amino acids include:

- A dihydroxy-phenylalanine amino acid. This provides an effective way to perform powerful redox reactions in proteins. Redox reactions, in which electrons are transferred from one atom to another, form the basis of everything from the combustion of gasoline to the action of household bleach. Natural amino acid side chains generally lack the ability to perform redox reactions.
- An “iodo” amino acid. This unnatural amino acid contains a heavy atom, which is useful for x-ray crystallography—a standard technique used to probe the structure of proteins.
- “Benzophenone” and “azide” containing amino acids that can be used as photo crosslinkers. These could be used for studying protein–protein interactions inside cells. Purifying these linked proteins would enable scientists to see what proteins interact with in living cells—even those with weak interactions that are difficult to detect by current methods.
- A “ketone” amino acid and an “acetylene” amino acid, both of which provide a molecular hook to which other molecules, like sugars or dyes, can be attached. This will provide tools for basic research and may allow the production of therapeutic proteins with improved pharmacological properties, selectivities, and potencies. For example, these amino acids can be used to cross-link a protein with a toxin to target cancer cells.

MAKING THERAPEUTIC PROTEINS

Also important for therapeutics is the work that Schultz and his laboratory have been doing with unnatural amino acids with “glycosylated” side chains. In nature, proteins are often glycosylated—a string of sugar molecules is attached to them—and chemists would like to be able to reproduce these sorts of sugary proteins in the laboratory. Therapeutic proteins often need to be glycosylated.



Incorporating unusual amino acids into polypeptides enables chemists to synthesize important therapeutic peptides.

It’s not easy, however, to make glycosylated proteins in the test tube, and Schultz’s technology may give scientists the tools they need to be able to do this more readily. Earlier this year, Schultz and his Scripps Research colleagues showed that glycosylated amino acids could be incorporated site-specifically to make glycosylated proteins—an important step in the preparation of some medicines.

“This will have a huge impact on the use of proteins as therapeutics,” says Schultz.

Recently, Schultz co-founded a company called Ambrx, Inc. in La Jolla that seeks to apply his technologies and engineer proteins with new

biological, physical, and chemical properties. Schultz is hoping that the technology will open up

new opportunities for making human therapeutics—longer-lasting medicines as well as entirely new ones with activities that cannot be had by other means.

“There are a number of things we can do that go far beyond what anybody thought we could do five years ago,” says Schultz. All told, they have added some 15 different amino acids to the genetic code of *E. coli* and yeast, and are beginning to tackle multi-cellular organisms such as *C. elegans*.

“Five years from now,” he adds. “We’d basically like to be able to say, ‘The genetic code is obsolete.’”

■ *Jason Socrates Bardi*

“This [work] will have a huge impact on the use of proteins as therapeutics.”— Peter Schultz



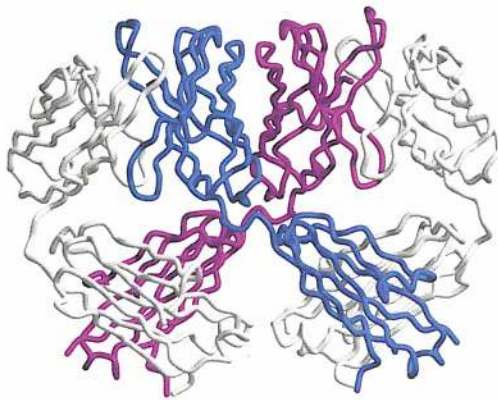
“We always have to remember that there is a major health issue here, a vaccine for AIDS. For me, that’s the acid test.” — Dennis Burton

It Had to Work

Determination Fuels Scripps Research Scientists’ Quest for AIDS Vaccine

The Dennis Burton-Ian Wilson research collaboration that solved the structure of a unique antibody that effectively neutralizes HIV, the virus that causes AIDS, and made headlines around the globe began long before the groundbreaking announcement last June. Burton and Wilson, both veteran members of The Scripps Research Institute faculty—Burton is a professor of immunology, Wilson a professor of molecular biology—have worked together since the early 1990s.

In an age when everyone wants everything to work on media time—that is, instantaneously—the Burton-Wilson discovery began to bear fruit after what one researcher described as yet another last resort, which opened the door to a clearer understanding of the structure of the neutralizing HIV antibody 2G12. Given the goal of their work, the length of time it took to unravel the structural mystery of 2G12 doesn’t seem all that surprising.



Of all the known antibodies, this was the first seen with such a structure.

“Nobody has come up with a vaccine candidate that will trigger neutralizing antibodies in animals or people,” Burton says, describing what is perhaps the world’s most elusive scientific goal. “But there is a small group of monoclonal antibodies that are neutralizing. It shows that such antibodies do exist and gives some hope for a future HIV vaccine. Our approach was to say, ‘Well,

we don’t have a good candidate for a vaccine, but we have these antibodies that do what we want. Can we work backwards from that?’”

For Burton and Wilson, the path to the 2G12 antibody led directly through the human monoclonal antibody b12, one capable of broad and potent neutralization of different HIV-1 strains. To crystallize the antibody, Wilson turned to one of his graduate students, Erica Ollmann Saphire, who now heads her own lab at Scripps Research.

“Crystallography is tough. It can look hopeless, but you just have to keep beating on it.”

— Erica Ollmann Saphire

LAST RESORT NUMBER 128

She began work in December 1994—with the sobering knowledge that several people had tried to crystallize b12 before, but had given up. It wasn’t until nearly four years later, in August 1998, that she actually succeeded, but only after trying “last resort number 128” out of what she described as “sheer desperation.”

Up until that moment, Saphire had been using the classic antibody approach—breaking the antibody into fragments and trying to crystallize the fragments. But that approach had proved frustratingly futile.

“That’s when we suggested trying to crystallize the *whole* antibody,” Burton says, “which was kind of a crazy idea because no one had ever crystallized a whole human antibody before. We all thought she would have had more problems with the bigger molecule, but it worked. And that just cracked open the whole problem. It was an amazing feat of perseverance that she stuck with it.”

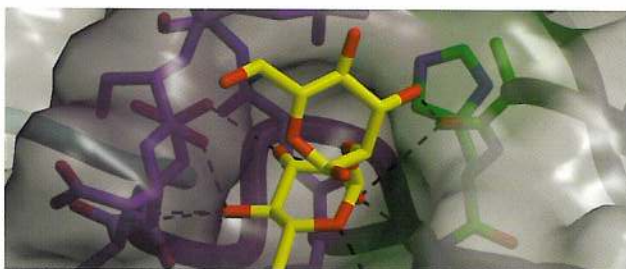
As Saphire explains it, there was no other alternative: “Crystallography is tough. It can look hopeless, but you just have to keep beating on it. It had to work. We had to have the b12 structure to see how it interacted with HIV.”

With the initial crystallization complete, it took another year and a half to complete the work on b12. Shortly thereafter, Burton and Wilson moved on to ►

Main photo: Scripps Research Professors Dennis Burton (left) and Ian Wilson have collaborated on research projects for a decade.

2G12, a unique antibody taken from an HIV-positive individual a decade earlier by Hermann Katinger, a doctor at the Institute for Applied Microbiology of the University of Agriculture in Vienna, Austria.

Unlike b12, it took only a few months to crystallize 2G12, Sapphire says. But then the real mystery began. Dan Calarese, another of Wilson's graduate students, noticed something odd about the molecule itself. What they eventually discovered was a structural anomaly. The Fab, or antigen recognition arms, of the 2G12 antibody were interlocked to form multiple binding sites capable of recognizing the sugars that cover the surface of HIV, something it should not have been capable of doing because the sugars were human. However, their arrangement was foreign, and it was this arrangement that the antibody recognized as part of an alien pathogen.



A molecular detail of the novel antibody.

Of all the known antibodies in the world, this was the first the researchers had seen with such a structure.

For his part, Wilson wondered if they weren't looking at some anomaly associated with the crystallization process. He and his colleagues spent the next year making sure they weren't.

"After we took a good look at its structure," Wilson says, "we spent a year making certain it wasn't a crystallization artifact. That was the painful part, verifying what we believed to be true—that the antibody had multiple binding sites that allowed it to bind to HIV with such high avidity."

During that year, Burton and his colleagues collected biochemical and biophysical data to support their belief in its unusual structure. Burton was largely convinced from the start: "What Ian was doing was good science. While I was somewhat surprised by the structure, I did think it was probably right. So many things fell into

place with that explanation—that it could recognize these sugars so effectively. Also, the mapping that we'd done suggested that the footprint of the antibody was bigger than a normal antibody and that made sense given this extended array of binding sites."

"Our approach was to say, 'Well, we don't have a good candidate for a vaccine, but we have these antibodies that do what we want. Can we work backwards from that?'" — Dennis Burton

The announcement of their discovery, and the surrounding media coverage, brought comments from friends, colleagues, and even rivals.

All praised Burton and Wilson's work as a milestone in HIV research. The scientists, especially Wilson, worried that even the most legitimate publicity would get blown out of proportion and ultimately hurt the entire HIV research effort by raising false hopes.

Because the truly difficult work lies ahead.

THE ROAD AHEAD

The trouble lies with the nature of HIV itself.

"The real problem with HIV is that it has taken the evolutionary process and speeded it up," Burton says. "Evolution generally occurs over thousands of years, but HIV evolves in days and that is hard to deal with. It's a dead piece of genetic material that can't survive outside of living cells, but it incorporates all kinds of evolutionary tricks to survive in the human body."

What usually happens over the course of evolution, Burton explains, is that a virus will adapt to its host. That seems to be what happened with monkey viruses similar to HIV, but when HIV jumped species it turned deadly and it will remain so for quite awhile. "Perhaps HIV will reach an evolutionary compromise with its human host," Burton says, "but we're not at that stage yet."

So, the search for a vaccine against the virus goes on. The public seems to understand the strengths and weaknesses of anti-viral drugs against HIV but perhaps not the magnitude of the vaccine challenge. "In HIV research, there's enormous pressure to come up with a vaccine," Wilson says, "because of the widespread belief that vaccines are not that difficult to make. But the classic approaches that work so well in polio and influenza don't work with HIV."

An HIV vaccine, by definition, will have to be completely different. The influenza virus mutates

almost as quickly as HIV but doesn't integrate with human DNA. HIV does, so what may be needed is sterilizing immunity—the absence of any infection of a human host cell by the virus. In other words, HIV is best combated outside the cell. Once it invades, HIV goes about eliminating T helper cells, immune cells that are needed to fight infections. As these helper cells die, even common pathogens can turn lethal.

Now with a neutralizing antibody like 2G12 as a template, vaccine development may be accelerated. But this is by no means the whole answer. The 2G12 antibody, while remarkable, appears to neutralize only 25 to 50 percent of the known strains of HIV, so it could contribute only part of any viable vaccine solution.

“With 2G12, we have a new paradigm for recognizing molecular clusters, a new prototype,” Wilson says. “Now that we know the arrangement of sugars that the antibody recognizes, perhaps we can find the clues we need to decide how to proceed with a vaccine.”

Both Burton and Wilson underscore the desperate need to solve the mystery of how this particular neutralizing antibody developed and the incredible difficulty of this task.

MOVING AS QUICKLY AS POSSIBLE

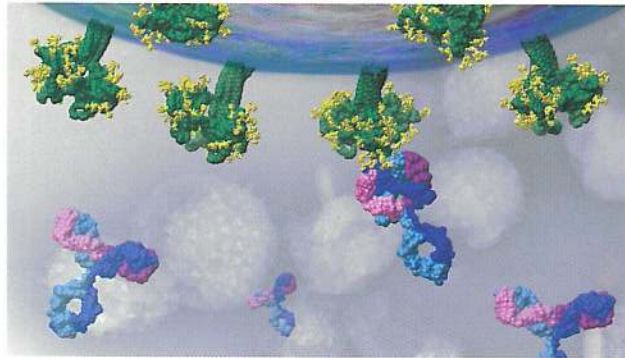
Perhaps the mystery could be solved more quickly if more people were working on these antibodies, Burton argues thoughtfully. Despite the fact that interest in HIV antibodies has risen over the past few years, antibody research is still a slow process, as the crystallization of b12

shows. Burton says, “You can't always go as fast as you'd like because there are certain things that have to be done before you can move to the next step. You can't solve the structure until you crystallize the protein. Our first antibody took five years.”

The task may be helped by a new group, the International AIDS Vaccine Initiative (IAVI), a consortium that combines the world's leading antibody experts with the financial resources and project management skills to get the job done. One of the primary goals of the consortium's five-year, multi-million dollar undertaking is to make sure that research moves as quickly as possible through cooperation and collaborative action.

“In HIV research, there's enormous pressure to come up with a vaccine... But the classic approaches that work so well in polio and influenza don't work with HIV.” — Ian Wilson

As director of IAVI's Neutralizing Antibody Consortium, Burton sees his position as a catalytic one, helping to accelerate the whole field by encouraging the sharing of data and information on a global scale.



A model of how HIV-1 neutralizing antibody 2G12 is capable of recognizing a cluster of carbohydrate on envelope glycoprotein gp120. (Image courtesy of Dan Calarese.)

“A lot of individual researchers are trying to make things go more quickly,” Burton says of his consortium colleagues. “What you're seeing now is a sense that the problem is bigger than any of us. We need to share and get things to move more quickly.”

The Scripps Research collaborative model may be a prototype for antibody research, the kind that both men want to see expanded.

“There are a lot of good ideas out there,” Wilson says. “Dennis and I have a lot of ideas; our colleagues in the consortium have got good ideas as well. If you're

collaborating with experts in all areas, you can move the research along. For example, there were direct benefits of Dennis and I seeing the problem of 2G12 from different

angles. Working together, we can start to tackle the really difficult problems that lie ahead.”

For Burton, the urgency of what he's doing is something palatable, a presence that he seems to carry around with him.

“We always have to remember that there is a major health issue here,” he says, “a vaccine for AIDS. For me, that's the acid test. We can do a lot of nice science but we don't have time to sit around admiring our antibodies. We have to turn these antibodies into a vaccine. That's what I think about all the time so we keep pressing on.”

You just have to keep beating on it because in the end, it *has* to work. ■ *Eric Sauter*

Scripps Research Plans to Open Major Science Center in Palm Beach County, Florida

The Scripps Research Institute has announced plans to establish a major science center in Palm Beach County, Florida, focusing on biomedical research, technology development, and drug design.

The announcement comes after months of discussions with Florida Governor Jeb Bush and state and local leaders. The facilities and initial staffing for the new center will be supported by Florida state and local government.

Scripps Research will continue to operate and expand its activities and programs at its campus in La Jolla, California.

“Based on our history and experience in La Jolla, the extension of Scripps activities will increase the scope and depth of significant research in biomedical science,” says Scripps Research President Richard A. Lerner, M.D. “The synergy between Scripps biomedical research in California and Florida is expected to lead to major new developments to improve human health.”

The expansion is expected to boost Florida’s economic development in biotechnology, just as the Scripps campus in La Jolla has served as the seeding ground and economic stimulus for the burgeoning bioscience industries in Southern California. Approximately 40 companies have grown out of the institute’s research and technology developments.

Governor Bush says, “Scripps is the brand name in biomedical research and we are honored they have chosen Florida to expand their current research facilities. Already known for breakthroughs for cancer and Alzheimer’s disease, this new bi-coastal presence will bring even greater opportunities for life-saving and life-enhancing research.”

Scripps Research will also collaborate with and support local industry and businesses, the university

system, and school districts in the region, as it has done in San Diego.

Beginning in 2004, Scripps Research expects to occupy temporary laboratory space while it constructs a state-of-the-art, 364,000-square-foot facility to be occupied in 2006.

Scripps Research and Oxford University Establish Joint Doctoral Program

Scripps Research and the University of Oxford have announced a joint graduate program in biology, chemistry, and biochemistry, named the Skaggs Oxford Scholarships Program.

This is the first time in its 800-year history that Britain’s Oxford University has offered a degree jointly with another institution of higher learning. It is also the first such degree offered by Scripps Research.

The Skaggs Oxford Scholarships Program, named for supermarket and drugstore leader L.S. Skaggs and his wife, Aline, will support 10 students during a five-year program of study. Upon completion of the program, Skaggs Oxford Scholars will receive a doctoral degree from Scripps Research and Oxford University.

“It is an honor to be associated with Oxford University and its Department of Biochemistry,” says Lerner. “Despite having quite different histories, our two institutions will now share a common path in this one regard—the education of the chemical biologists of the future.”

“The Skaggs Oxford Scholarships create unique opportunities for multidisciplinary research and learning at the highest level,” says Oxford University Professor Raymond A. Dwek, D.Phil., “The Department of Biochemistry at Oxford is one of the largest in the world with outstanding scientists in structural biology, cell biology, and molecular genetics, who welcome



On November 3, Florida Governor Jeb Bush signed a bill into law appropriating \$310 million to fund the opening of a Florida branch of The Scripps Research Institute. The Palm Beach County government will provide an additional \$200 million for the project.

Campus News

these ties with Scripps Research and believe that many important research collaborations will result from these scholars having access to faculty on both campuses.”

Chemical biology is an emerging interdisciplinary field that combines specialties including organic chemistry, biology, and biophysics. It seeks to find answers to some of the most pressing scientific questions of our day—such as discovering the identities, structures, and mechanisms of proteins and genes implicated in human health and finding ways to exploit this knowledge to develop drugs and treatments to alleviate human suffering.

Doctoral candidates selected as Skaggs Oxford Scholars will be enrolled at both institutions and spend two to three years studying biochemistry at Oxford University in the United Kingdom and two to three years exploring chemistry or biology at Scripps Research in La Jolla, California.



Oxford University and Scripps Research will offer a joint doctoral degree—a first in Oxford's 800-year history.

Kellogg School Launches Restructured Graduate Program

The Kellogg School of Science and Technology at Scripps Research launched a restructured graduate program—the Scripps Research Doctoral Programs

in Chemical and Biological Sciences. The new program will offer Ph.D. candidates a wide range of courses and increased flexibility in course selection.

“[This program] will take advantage of Scripps Research's scientific strengths and will position our students to be leaders in science now and a decade from now,” says Jeffery Kelly, dean of the program and vice president for academic affairs. “The new curriculum prepares students for a scientific environment that is ever-changing, fast-paced, and integrated across disciplines.”

Previously, Scripps Research offered two largely independent graduate programs: Chemistry, and Macromolecular and Cellular Structure in Chemistry, which were ranked sixth and ninth in the nation, respectively, by *U.S. News & World Report*. In addition, Scripps Research's graduate programs were ranked second in the specialty of organic chemistry. Students who came to Scripps Research prior to 2003 will continue to fulfill these programs' requirements.

Beginning with the entering class, however, students will participate in the new Scripps Research Doctoral Programs in Chemical and Biological Sciences. In the new program, students will select from among four curricular tracks: Chemistry, Chemical Biology, Biology, and Biophysics. In addition, the students will meet new requirements designed to raise academic standards and further promote a well-rounded scientific education.

The review of the graduate program began about a year ago and involved input from more than 20 Scripps Research faculty and 170 graduate students. Student input was also sought and received in a town meeting format. Three meetings of the faculty group and four subcommittee meetings resulted in a proposal that was presented to the entire student body and faculty.

The proposal for curriculum changes was endorsed by a vote of the Scripps Research faculty and students and approved by the Western Association of Schools and Colleges.



Jeffery Kelly, dean of the Kellogg School of Science and Technology.

“Riding the Tiger”

Excerpts from the 2003 Commencement Address



Twenty-nine young men and women of The Scripps Research Institute Kellogg School of Science and Technology were awarded Ph.D.s on May 16 in the institute's 11th commencement ceremony. Also receiving honorary degrees were businessman, philanthropist, and trustee John Moores and distinguished scientist Daniel E. Koshland, Jr., of the University of California at Berkeley, who gave the keynote address.

Following are excerpts from Koshland's remarks:

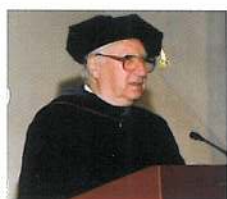
“It was the best of times; it was the worst of times.” Those sentences in a Charles Dickens novel might well be applied to science today. Never have the frontiers of science been more extensive and more exciting, and never more relevant to our daily lives. Yet to read some headlines, all is gloomy.

Scientists are, from one point of view, the heroes who have brought us television, automobiles, modern medicine, and modern agriculture. From another point of view, scientists are the villains who have

brought us television, automobiles, modern medicine, and modern agriculture. So today, at this memorable graduation, I'd like to discuss the fears, the fantasies, and the future of science.

There are stories on the oversupply of scientists and fraud in high places, and the accusations that scientists are cruel to animals and that they are responsible for pollution, cloning, and oat bran. That accumulation of horrors reminds me of a similar construction by a neighbor of Charles Darwin. A little boy who lived down the block decided he would fool the great naturalist. So he constructed with paste and scissors a bug with the body of a beetle, the legs of a spider, and the wings of a butterfly, and brought it to Darwin for identification. Darwin looked at it for quite a while, and then said to the boy, “I'm puzzled—does this bug hum?” The little boy was taken aback at the question, but said, “Oh, yes, it hums. I heard it myself.” “Then,” said Mr. Darwin, “I know what it is. It's a humbug.”

And I believe the gloomy construction of the future



Distinguished scientist Daniel E. Koshland, Jr., Ph.D., gave the 2003 commencement address.

of science is also humbug. The funding of chemical sciences has never been higher; the number of problems that need solutions has never been greater; the amount of technological unemployment among chemists is less than one percent. It is true that society has funding problems, environmental problems, ethical problems, and medical problems. But the really terrible state, from the point of view of this class, would be if there were no problems. Then we wouldn't need you at all. So my generation has been kind enough, not only to give you an education, but also to produce problems for you to solve, and we expect you to be more productive and more effective than your parents or your faculty in solving them. Why do I say that? Because you are smarter or more diligent or wiser than we are? Certainly not. But you are certainly just as good, and you will have more powerful tools to work with—better computers, better combinatorial chemistry, better molecular biology, and better nanotechnology....

But some of you will ask if we scientists are causing pollution and pesticides and increasing percentages of cancer are we really making progress or just replacing old problems with new ones? The answer is that we

are replacing old problems, but in solving old problems we are producing solutions that are so popular that we create new ones. There is an old Indian proverb: "He who rides the tiger can never get off." Society has been riding the tiger of science and it can never get off.

The automobile is such a good replacement of the horse and buggy, there are now too many of them and we have traffic congestion and air pollution. The miracles of modern medicine are saving so many lives and the miracles of modern agriculture are feeding so many people that we have an overpopulation problem. Those are big problems and more science is going to be needed to solve them....

Similarly, improved agriculture by genetic engineer-

ing, which was called "crop selection" in previous eras, has many more people living healthier and longer. Today, we are providing food on an acreage one sixth of that we would have required with the old fashioned crops before genetic selection—extra land that can be used for habitats and parks or houses and high rises,



Koshland called on members of the Class of '03 to do their part in making the world better than it is today.

but nevertheless extra land provided by science which society must decide how to use....

That brings us to the future, and that future belongs to you, the Class of '03. You won't solve all the problems, but we expect you to do your bit at making the

world better than it is today. There is a little matter, like getting a job. But what you will accomplish will largely depend on your own motivation. The optimist says, "This

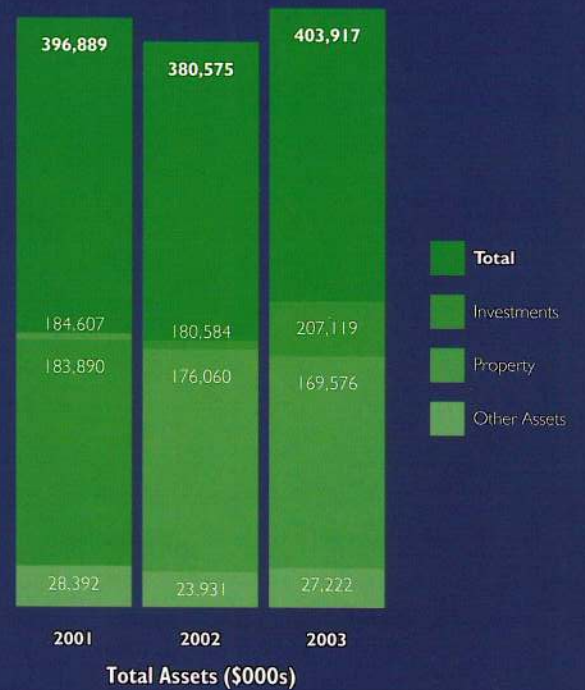
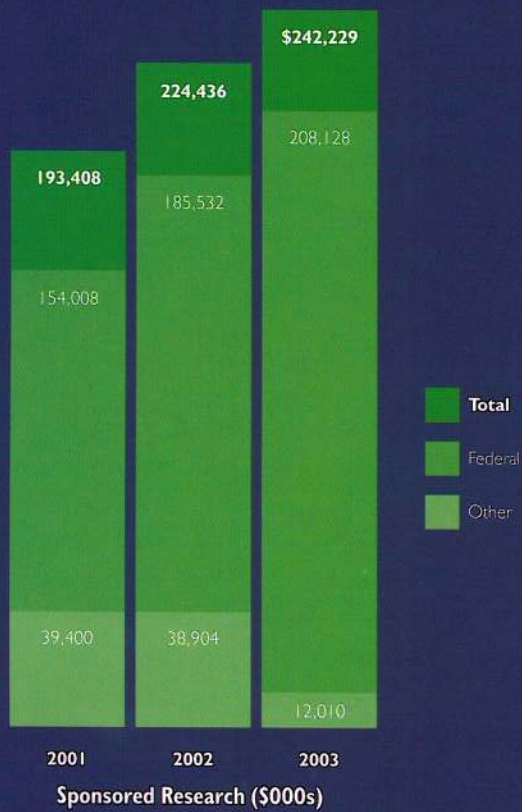
is the best of all possible worlds," and the pessimist says, "I'm afraid you're right." What we need is neither an extreme optimist who thinks all is well, nor an extreme pessimist who despairs, but a scientific activist who says, "Let's get going!"

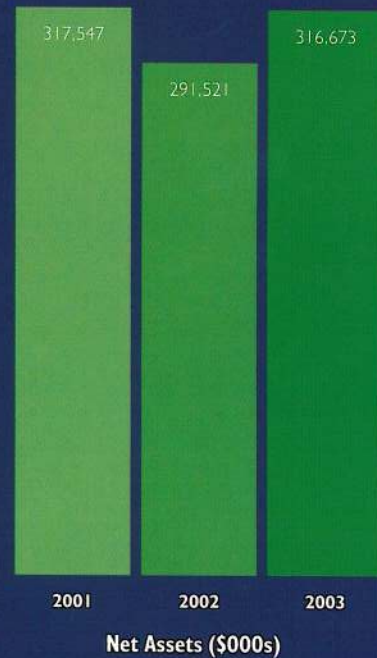
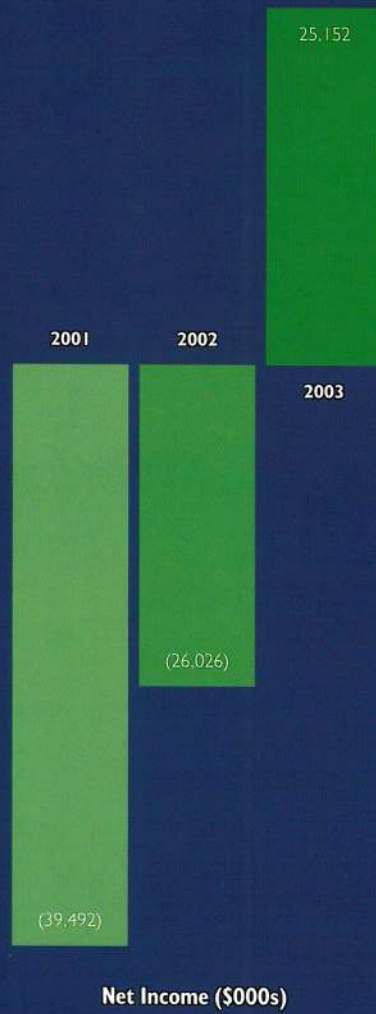
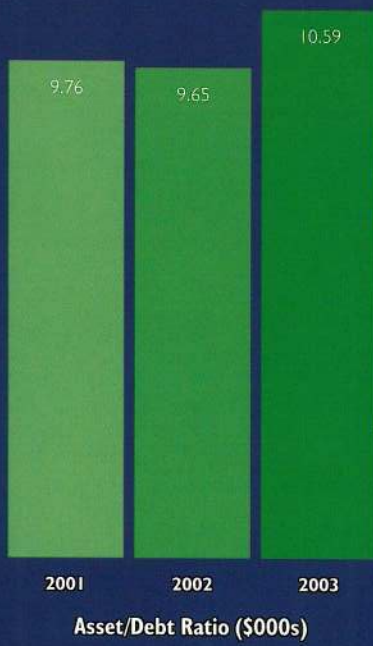
There are massive problems that need solutions—waste disposal, diseases of old age like arthritis and Alzheimer's, plagues like the Ebola virus, SARS, and AIDS—and more science is clearly needed for each of these. Society is not yet ready to get off the tiger of science and we will need the Scripps Class of '03 to help.

"What we need is neither an extreme optimist who thinks all is well, nor an extreme pessimist who despairs, but a scientific activist who says, 'Let's get going!'" — Daniel E. Koshland, Jr.

Financial Highlights

Years ended September 30





Development Report

Dear Friends,

The year 2003 marked a noteworthy collaboration that clearly demonstrates the importance of private philanthropy to The Scripps Research Institute. Scripps Research established a joint graduate program in biology, chemistry, and biochemistry with Oxford University. This Skaggs Oxford Scholarships Program marks the first time in its 800-year history that Britain's Oxford University has offered a joint degree with another institution of higher learning. It is also the first such degree offered by Scripps Research. This new initiative was made possible by the generosity of L.S. and Aline W. Skaggs.

The Skaggs Institute for Research, a charitable foundation created by the Skaggs in 1996, is Scripps Research's largest benefactor and to date has provided grants of more than \$75 million to fund the Skaggs Institute for Chemical Biology, as well as graduate, postdoctoral, and clinical research programs.

Creating new opportunities for collaboration and forging new areas of research require the spirit of innovation and funding. Private philanthropy provides a critical source of funding that fuels the entrepreneurial drive of scientists to constantly seek new directions in research.

The following pages reflect those who have contributed gifts supporting biomedical research or educational and community programs at Scripps Research in 2003, as well as individuals who have informed us they have included the institute in their estate plans.

We are indeed fortunate to have such committed partners who understand the value of basic scientific research and its application towards diagnosis, prevention, and treatment of disease. It is your support that makes breakthroughs in basic research and our innovative educational and community programs possible.

The support of our philanthropic community has always been a key element in our ability to rapidly respond to emerging priorities in science and medicine. You have our deepest gratitude for being a part of that philanthropic community.

Sincerely,



Charles C. Edwards, M.D.
Chair of the Development Committee
The Scripps Research Institute Board of Trustees

Friends of The Scripps Research Institute have demonstrated time and time again how their kind actions of generosity impact the institute's ability to remain at the forefront of cutting-edge basic biomedical research. On the following pages, we recognize those who have contributed to our success this year. We give special recognition on the sidebars to some of the people and organizations who have shown how private philanthropy carries forward the work of Scripps Research scientists and educational and community programs.

Major Donors to The Scripps Research Institute

SPECIAL ACKNOWLEDGMENT

The following are those individuals and organizations who, over the years, have given \$1 million or more in support of investigations at the research institute. We specially honor them and recognize their dedication to the advancement of medical science.

Aline W. and L. S. Skaggs/
The ALSAM Foundation –
The Skaggs Institute for Research
American Cancer Society, Inc.
American Heart Association
Anonymous (17)
Gordon M. Anderson
Charitable Lead Trust
Arthritis Foundation
Donald E. and Delia B. Baxter
Foundation
Dr. and Mrs. Arnold O. Beckman
Arnold and Mabel Beckman Foundation
Becton Dickinson and Company
Cancer Research Institute, Inc.
The Council for Tobacco Research
Mr. and Mrs. Richard A. Cramer
Cytel Corporation
Damon Runyon Walter Winchell
Cancer Research Foundation
Harold L. Dorris Neuroscience
Foundation
Helen L. Dorris Foundation
Ellison Medical Foundation
Mr. Walter Fitch III
Juanita Francis

Dr. and Mrs. Cecil H. Green
Mr. and Mrs. Ernest W. Hahn Ernest
W. and Jean Hahn Charitable Trust
Virginia Hale
Theodore Hart
Lita Annenberg Hazen
Juvenile Diabetes Foundation
W. M. Keck Foundation
Mr. and Mrs. W. Keith Kellogg II
Mr. and Mrs. Eugene V. Klein
Gladys Q. Knapp
Mr. and Mrs. Dirk C. Kok, Jr.
Leukemia and Lymphoma Society Inc.
Lucille P. Markey Charitable Trust
Mr. and Mrs. John D. Lusk
G. Harold and Leila Y. Mathers
Foundation
Mr. and Mrs. John Jay Moores
National Multiple Sclerosis Society
Pitman-Moore, Inc.
Mr. Melvin S. Reeves
The Rockefeller Foundation
Mr. and Mrs. Donald Roon
Mr. and Mrs. Leo Roon
Mr. and Mrs. John Safer
The E.W. Scripps Family
Donald P. and Darlene V. Shiley
Mrs. Betty L. Springer
Sam and Rose Stein Charitable Trust
Buddy Taub Foundation

OCTOBER 1, 2002

TO SEPTEMBER 30, 2003

The following list acknowledges the generosity of the many friends of The Scripps Research Institute who contributed during the past year.

\$100,000 OR MORE

American Cancer Society, Inc.
American Heart Association
Anonymous (2)
Arthritis Foundation
Mike and Stella Banich
Alma Lee Barker
Burroughs Wellcome Company
California Community Foundation
Cancer Research Institute, Inc.
CaP CURE
Damon Runyon Cancer Research
Foundation
Harold L. Dorris Neuroscience
Foundation
Ellison Medical Foundation
Fidelity Investment Charitable Gift Fund
Fletcher Jones Foundation
Mr. and Mrs. Thomas H. Foster
Hereditary Disease Foundation
Howard Hughes Medical Institute
Juvenile Diabetes Foundation
Mr. and Mrs. Eugene V. Klein
Susan G. Komen Breast Cancer
Foundation
Leukemia and Lymphoma Society Inc.
Lita Annenberg Hazen Foundation
Mr. David J. Lloyd
G. Harold and Leila Y. Mathers
Foundation
Mericos Eye Institute
Money/Arenz Foundation, Inc.
The James B. Pendleton Charitable Trust
Mrs. Helen E. Sachs
Dr. and Mrs. Paul Schimmel
Mr. and Mrs. Ralph J. Shapiro

Graduate Education | The Fletcher Jones Foundation has continued its tradition of philanthropy at Scripps Research by permanently endowing a second fellowship for a first-year graduate student enrolled in the Kellogg School of Science and Technology. The foundation was established in 1969 by Computer Associates founder Fletcher Jones just two years before his untimely death. Endowments for the graduate program are an important means of supporting future scientists during their first year of graduate studies.

\$50,000-\$99,999

Anonymous (2)
 ARCS Foundation, Inc.
 Mr. and Mrs. E.T. Gravette, Jr.
 William and Sharon Bauce Family Foundation
 Blasker-Rose-Miah Fund/The San Diego Foundation
 Cystic Fibrosis Foundation
 Mr. Stanley H. Gist
 Life Science Research Foundation
 March of Dimes Birth Defects Foundation
 McManus Charitable Trust
 Miramar & Company
 National Foundation for Cancer Research
 Dorothy Louise Nichols
 Novartis Agricultural Discovery
 Lorraine and Barton M. Palmer
 Mr. and Mrs. Robert G. Park
 The San Diego Foundation
 Mr. Robert P. Scripps, Sr./
 Miramar & Company

\$25,000-\$49,999

American Diabetes Association
 Bristol-Myers Squibb Company
 Christopher Reeve Paralysis Foundation
 Elizabeth Glaser Pediatric AIDS Foundation
 J.H. Tharp TUM Charitable
 Maxygen
 Muscular Dystrophy Association, Inc.
 Myasthenia Gravis Foundation, Inc.
 National Alliance Research Schizophrenia & Depression Foundation
 National Multiple Sclerosis Society
 Mrs. Frank C. Owen
 Rett Syndrome Research Foundation
 Mrs. George E. Richardson
 Torrey Mesa Research Institute
 W.E. Walker Foundation
 Estate of Jewel Wilpan

\$10,000-\$24,999

Agouron Pharmaceuticals, Inc.
 Alpha 1 Foundation
 American Parkinson Disease Association
 Anonymous (1)
 Arthritis National Research Foundation
 Mr. and Mrs. Harry J. Cebon
 Jane Coffin Childs Memorial Fund
 Mr. Clarence L. Conzelman
 John G. Davies, Esq.
 Mr. and Mrs. Thomas E. Dewey, Jr.
 Dr. and Mrs. John D. Diekman/Fidelity Investment Charitable Gift Fund
 Mr. Richard J. Elkus, Jr./Peninsula Community Foundation
 Estate of Elizabeth J. Fernald
 The H. Fort Flowers Foundation, Inc.
 Mr. and Mrs. Eugene M. Foster
 Drs. Ernie and Su Huang
 Max Kade Foundation, Inc.
 Norman and Margaret Lassey
 Ms. Claudia S. Luttrell
 Mellor Family Foundation
 Multiple Sclerosis of Canada
 National Gaucher Foundation
 Peninsula Community Foundation

Joseph J. Pertusati
 Florence Riford La Jolla Fund
 David E. Shaw, Ph.D.
 Mr. and Mrs. Mace Siegel
 Signal Pharmaceuticals, Inc.
 William G. Sommerville
 Dr. and Mrs. Richard J. Ulevitch

\$5,000-\$9,999

Altria Group, Inc.
 Anonymous (4)
 Array BioPharma, Inc.
 Mr. Louis L. Borick
 Mr. Paul J. Bowron
 Mr. and Mrs. Alfred L. Brosio
 Mr. and Mrs. Gary N. Coburn
 James W. and Kathleen J. Dennis
 The Ray Thomas Edwards Foundation
 Robert and LaDorna Eichenberg
 Richard and Jeane Erley
 Mr. and Mrs. Carl E. Frahm
 Mr. Brad Friedmutter
 Mr. and Mrs. Jack W. Greening /
 Rolling Ridge Ranch
 Mr. Wayne R. Green
 Honeywell Hometown Solutions
 Mr. and Mrs. Oliver B. James
 Mr. and Mrs. Robert W. Kerney
 Mr. Hector V. Leon
 Professor James O. McCaldin
 National Multiple Sclerosis Society
 PARAID
 Philip Morris Foundation
 Mrs. Jack T. Sakioka
 Mrs. Lesly Starr Shelton
 Estate of Anna Mary Sherman
 Mr. and Mrs. V. DeWitt Shuck
 Mr. and Mrs. David S. Tappan, Jr.
 Mrs. Gemma Jean Venard
 Albert L. Weickert

\$1,000-\$4,999

Gene and Elaine Allen Foundation
 Mrs. Elizabeth S. Alvarez
 Bank of America Corporation
 Anonymous (4)

Mr. and Mrs. Robert L. Beck
 Bette J. Becker
 Mrs. Alan Beerbower
 Carol and Charles Berney
 Mr. Jerry Best
 Jack and Katherine Bevash Family Trust
 Bill's Trailerland Sales Co.
 Mrs. Catherine McCormick Blair
 Mr. and Mrs. H. G. Bouris
 Mr. and Mrs. Robert K. Break
 La Verne and Blaine Briggs
 Buck Family Foundation
 Calneva Development Company, Inc.
 Jacqueline Cannon
 Mr. Thomas L. Carlson
 Carlton Forge Works
 Mr. David B. Carmel
 Major and Mrs. Manuel L. Carrasco
 Cars 4 Causes
 Mr. and Mrs. Andrew Cianciotto
 Mr. William G. Clapp
 Mr. and Mrs. Benjamin Coates
 The Cohen Family Foundation
 Mr. and Mrs. Howard I. Cohen
 Mr. and Mrs. Shelby Collinsworth
 Heidi Marie Conlan
 Mrs. Nancy A. Connell
 Mr. Charles R. Cono
 Mrs. Van Blackie Cooke
 Mr. and Mrs. Frank J. Cosenza
 Mr. and Mrs. Moody Covey
 Wilene and Richard Coyle
 Mr. And Mrs. J.S. Danny Danenberg
 Mr. Glen Daugherty
 Mr. and Mrs. Bruce B. Dayton
 Mr. and Mrs. Robert de Rose
 Mr. and Mrs. Raymond L. deKozan
 Mr. and Mrs. Robert William Deruntz
 Dr. Thomas F. Deuel
 Mrs. Ralph Dexter
 Dr. and Mrs. Frank J. Dixon
 Robert L. Donley
 Mr. and Mrs. Richard K. Eckert, Sr.
 Sue K. and Charles C. Edwards, M.D.
 Charles C. and Sue K. Edwards
 Foundation

Mr. and Mrs. Ronald C. Erbetta
 Helen Trahan Farschon
 James and Louise Farschon
 Mr. and Mrs. Willis L. Fehlman
 Mr. and Mrs. Joseph Feigenbaum
 Ms. Joan R. Fisher
 Mr. and Mrs. Stanley Fishfader
 Mrs. Ward Fitzpatrick
 Mr. and Mrs. Standish M. Fleming
 Mr. Henry J. Frabotta
 Robert E. Francis
 Mr. Mark P. Freeman
 Dr. and Mrs. Sherley Freudenberger
 C. Hugh Friedman and Lynn Schenk
 Friendship Foundation, Inc.
 Mr. James Gagan
 Mrs. Lourdes A. Garcia
 Mrs. Roger T. Gilmartin
 Goodes Family Foundation
 Mrs. Michelle Goodes
 Howard L. Gosch
 Mr. and Mrs. Arthur V. Grimes
 Mrs. Sybille Wyman Hargis
 Salah M. Hassanein
 Dr. and Mrs. Lawrence V. Hastings
 Mrs. Bruce A. Hecker
 Mr. and Mrs. William J. Hefner
 Cdr. Harry E. and Dr. Anna P. Helgeson
 Mr. Fred N. Hellmann
 Mrs. Julie Hill
 The Hoag Foundation
 Mr. and Mrs. Jerry Hollander
 Mr. and Mrs. John P. Howe
 Mr. and Mrs. Roger Howe
 Mr. and Mrs. Robert E. Huisken
 Mr. Alan R. Hunter
 Mr. F. Robert Insinger
 Lawrence and Elaine Smith Irell
 Foundation
 Mrs. Rebecca J. Irwin
 Mr. and Mrs. Floyd Isley
 Jewish Community Foundation
 Mr. and Mrs. Lloyd L. Johnson
 Mrs. Virginia K. Karnes
 Mr. and Mrs. Rexford P. Kastner
 Mr. and Mrs. Henry G. Kohler

Mr. and Mrs. Richard L. Kole
 Mr. and Mrs. Robert C. Kyle
 Ms. Sharon Labovitz
 The Ladd Foundation
 Mr. J. B. Ladd
 Arnold LaGuardia and Susan Mazza
 Mr. and Mrs. Patrick H. Laing
 Mr. and Mrs. W. R. Lake, Jr.
 Mr. Clyde M. Langston
 Mark and Julie LeDoux
 Mr. Robert M. Loch
 Mr. Leslie R. Loveday
 Mr. and Mrs. William Low
 Mrs. Ermina S. Makle
 Mr. and Mrs. William J. Mason
 Mr. and Mrs. Patrick W. McNamara
 Mr. and Mrs. Roy K. Mitsuuuchi
 Mrs. Helen V. Moisesku
 Mr. and Mrs. Donald E. Moran
 Judith and Neil Morgan
 Ms. Kathryn A. Morrow and
 Mr. Lenard Nissenson
 Messrs. Ben and Clifford Motoike
 Mr. and Mrs. Nejat Munisoglu
 Mr. Jerry E. Myers
 Mr. and Mrs. Martin Nash
 Mr. and Mrs. Floyd Nelson, Jr.
 Mr. and Mrs. George K. Nervig
 Mr. and Mrs. Winston B. Newell, Jr.
 Northern Trust Bank

Tradition | Claudia Skaggs Luttrell continues the tradition her family established at Scripps Research by serving as a member of the Board of Trustees. Her belief in the efficacy of the Skaggs Oxford Scholarships Program is demonstrated by her willingness to serve as the board's chair for this newly established and historic program supporting the education of the chemical biologists of the future.

Legacy | Donors Jack and Deanna Hanes and the late Robert Kahse and Virginia Kahse made noteworthy decisions long ago to designate proceeds from their estates to fund basic scientific research at the institute in perpetuity, making a difference for the betterment of health and the human condition for generations to come. The Hanes and the Kahses are recognized as members in the Scripps Heritage Circle who have arranged for the future philanthropic support of the institute as part of their estate plans.

Mr. and Mrs. David Oliver
 George and Barbara Philips
 Ms. Mildred Pilot
 Mr. and Mrs. Spelman Prentice
 Ms. Edna F. Pulver
 Mr. and Mrs. James L. Ramsay
 Paul C. Ressler, Jr.
 Dr. Norman C. Roberts
 Mr. and Mrs. Paul G. Rogers
 Mrs. Louis Roripaugh
 RPH Investments, Inc.
 Mr. Thomas Ryan and Frances Osborn
 Mr. and Mrs. John A. Sage
 The Salah M. Hassanein Foundation
 Mrs. Helen E. Saville
 Schlanger Charitable Foundation
 Mr. and Mrs. George Schuller
 Dr. and Mrs. Peter G. Schultz
 Mr. and Mrs. Richard Schweppe
 Mr. and Mrs. Charles E. Scripps
 Sempra Energy
 Dr. and Mrs. Ralph M. Shishido
 Mr. and Mrs. George W. Shoen
 William H. and Barbara A. Short
 Mr. and Mrs. Bertram N. Shure

Mr. and Mrs. Richard F. Silva
 Mr. Dave Simonson
 Iris Beryl Skene
 Mr. and Mrs. Gary D. Smith
 Mr. Orison Smith
 Dr. and Mrs. Eugene N. Smoley
 Mary C. Soares
 Mr. and Mrs. Michel Solari
 Mr. and Mrs. Robert T. Sopko
 Mr. and Mrs. Anthony N. St. John
 Mr. Richard E. Stern
 Barbara and Wilbur J. Strohm, Jr.
 Mrs. Frank Sugg
 Mr. Jacob D.Y. Sur
 The Tilles Family Foundation
 Mr. Thomas C. Tousley
 Ray and Shirley Tritten
 United Way of Orange County
 Mrs. Alma Rosa Vasic
 Mr. and Mrs. E.F. Weerts
 Mr. and Mrs. James S. Weil
 The Weingart-Price Fund
 Robert C. and Gwynneth F. Weiss
 Mr. and Mrs. Hans R. Wiener
 Mr. James R. Williams
 Wood-Rill Foundation
 Mr. and Mrs. Charles Yanofsky
 Mrs. Penny S. Zorn
 Mrs. Walter Zumstein

\$100-\$999

Mr. and Mrs. Louis W. Abbott
 Mr. and Mrs. William F. Abernathy
 Ms. Jill B. Acevedo
 Mr. and Mrs. Gilbert Ackers
 Ms. Marjorie Acquistapace
 Mr. and Mrs. Joseph M. Adamko
 Mr. Donald J. Adams
 Mr. and Mrs. Ralph E. Adams, Jr.
 Mrs. Leona K. Adler
 Ms. Hye Song Ahn
 Mr. David A. Ahumada
 Mrs. Carole B. Alarcon
 Mr. Robert S. Albritton
 Mrs. E. G. Aldridge
 Mr. Ronald D. Alexander

Mrs. Gail L. Allen
 Mr. and Mrs. Robert F. Allen
 Mr. and Mrs. Douglas S. Alman
 Mr. and Mrs. Martin Alpert
 Dr. and Mrs. Louis J. Alpinieri
 Mr. and Mrs. Vito J. Altieri
 Mr. and Mrs. William R. Alvarado
 Mr. and Mrs. Ben Amador
 Mesdames Eleanor M. and Janeen L. Ameral
 Mrs. Betty J. Ammons
 Ms. Ruth M. Amster
 Mr. and Mrs. Jasjiv S. Anand
 Ms. Eleanor Smeykal Andersen
 Mr. Bryan Anderson
 Mr. David D. Anderson
 Ms. Doris E. Anderson
 Edmond Morgan Anderson
 Mr. John R. Anderson
 Mr. Melvin V. Anderson
 Mr. and Mrs. Paul M. Anderson
 Mr. and Mrs. Robert A. Anderson
 Mr. Arnold Andrews
 The Annex Gallery
 Anonymous (51)
 Ms. Denise Applbaum
 Mrs. Floy Rowley Apple
 Mr. and Mrs. Steven A. Apple
 Appleton
 Ms. Beryl T. Aragaki
 Mrs. Iola M. Arakelian
 Ms. Leticia G. Arellano
 Captain Edward S. Arentzen,
 USN (Ret.)
 Mr. and Mrs. Phillip Argento
 Ms. Rosanna Arguelles
 Mrs. Eleanor S. Armstead
 Ms. Betty M. Armstrong
 Mr. Winifred F. Armstrong
 Mr. and Mrs. Joseph Aron
 Mrs. Marjorie Arruda
 Krystyna Artymowska, M.D.
 Mr. and Mrs. Richard P. Arviso
 Mr. Dale E. Aschbrenner
 Mr. Edwin D. Ashton
 Mr. Anwar Aliaa Askandar

Mr. and Mrs. Wafa G. Assaf
 Mr. Leo Atamian
 Mr. and Mrs. William L. Atkinson
 Mr. John F. Atkinson
 Mr. and Mrs. William L. Atkinson
 Mr. and Mrs. Wilton L. Atkinson
 Mr. Bruce Atwell
 Ms. Marjie H. Atwood
 Mrs. Margaret V. Austin
 Ms. Gloria Averbook
 Mr. Stephen N. Avery
 Mr. Manuel Domenzain Avila
 Ms. Vandana Awasthi
 Mr. and Mrs. Donald C. Axon
 Marijane S. Ayars
 Mr. and Mrs. Eber G. Ayers
 Dr. and Mrs. Louis S. Babior
 Dr. and Mrs. Sven A. Bach
 Mr. and Mrs. P.J. Baddeley
 BAE Systems Mission Solutions, Inc.
 Ms. Norma E. Bailey
 Mr. and Mrs. Alton F. Baker, Jr.
 Mr. and Mrs. Ronald H. Baker
 Mr. Robert L. Balch
 Mr. and Mrs. William Balduff
 Ms. Corinne Howe Ball
 Mr. and Mrs. Richard G. Ballantine
 Mr. and Mrs. Manuel Ballesteros
 Mr. and Mrs. Alton Ballif
 Mr. Mohammad S. Banian
 Mr. and Mrs. E. J. Bannon
 Ms. Donna J. Cowley Barba
 Mr. and Mrs. Dennis M. Barbaro
 Mr. and Mrs. Mark Barber
 Ms. Lillian M. Barboza
 Dr. and Mrs. Jankiel Barg
 Mr. Joseph Barilla
 Barish Family Foundation
 Mr. and Mrs. Michael S. Barish
 Mr. and Mrs. Joseph M. Barker
 Mrs. Carlyn S. Barmeier
 Ms. Yvonne M. Barnes
 Mr. and Mrs. James R. Barnett
 Mr. and Mrs. Larry Barnthouse
 Mr. Harry Barr
 Mr. and Mrs. James A. Barrett

Mr. F. Ray Barron
 Mr. and Mrs. Thomas S. Barry
 Ms. Rusti Bartell-Weiss and
 Ms. Ina S. Bartell
 Miss Quaintance Bartlett
 Mr. and Mrs. Robert L. Barto
 Mrs. Edith M. Barton
 Donald E. Bashford, Ph.D.
 Mr. and Mrs. Donald F. Bassett
 Mr. and Mrs. Raul E. Batiz
 Mr. Paul Battenberg
 Mr. William H. Baughn
 Ms. Glenda Bayless
 BD Matching Gift Program
 Mr. and Mrs. Robert J. Beale
 Ms. Consolacion C. Beals
 Mrs. Donald A. Beanston
 John M. Beard Trust
 Captain and Mrs. James R. Beatty III,
 USN, (Ret.)
 Mr. and Mrs. Larry Beck
 Ms. Mildred L. Beck
 Ms. Cheryl Becker
 Mr. and Mrs. Clarence J. Becker
 Mrs. Virginia O. Beckett
 Mr. Jeffrey Scott Beckwith
 Ms. Ann W. Beebe
 Ms. Diane L. Beebe
 Mr. and Mrs. Barton Beek
 Mrs. O. Grace Beetem
 Mrs. Margaret J. Beetham
 Mr. Robert R. Belchez
 Mr. Allan Belkin
 Mr. and Mrs. Kurt Bellows
 Mr. and Mrs. Michael J. Beltran
 Mr. and Mrs. James R. Belyea
 Mr. and Mrs. Walter G. Benedict
 Mr. Herbert R. Benham, Jr.
 Mr. Virgilio M. Benito
 Mrs. Miriam Benjamin
 Mr. and Mrs. B. D. Bennett
 Mr. and Mrs. Francis B. Bennett
 Ms. Bess Benson
 Mr. and Mrs. Joel Benson
 Ms. Kathryn L. Benson
 Mr. and Mrs. Philip J. Bergmann

Harold D. Berkowitz, Esquire
 Berkstresser's and Freeman's
 Mr. and Mrs. Jim Bernhardt
 Mr. David Bernstein
 Mr. and Mrs. Donald Bernstein
 Mr. Paul J. Berokoff
 Mr. and Mrs. Richard A. Beutter
 Mr. and Mrs. H. F. Beverburg
 Mr. and Mrs. Thomas E. Beyer
 Wayne T. Biddle
 Mrs. Barbara B. Biewer
 Ms. Joan Callahan Bigge
 Ms. Patricia Binder
 Mr. Daniel H. Bindler
 Ms. Shirley Binns
 Mr. and Mrs. Stanley E. Birstein
 Mrs. Bess M. Bishop
 Mr. and Mrs. Marshall V. Bittick, Jr.

Vision | Mark Pearson set out to find an institute partner to provide opportunities to conduct research across scientific domains in the pursuit of treatments for alcoholism. After visiting several other renowned facilities, he made the decision that Dr. George Koob and Dr. Barbara Mason of the Scripps Research alcohol center were at the forefront of innovative, multidisciplinary approaches to medication development for the treatment of alcoholism with a focus on the prevention of relapse. The Pearson Center for Alcoholism and Addiction Research at Scripps Research will work to fulfill his vision of a day when an alcoholic can move forward to a life that is free of alcohol consumption.

In Memoriam | Helen Sachs was a strong believer in the importance of basic and clinical research and she appreciated the idea of “bench to bedside” research. She is supporting vital medical research beyond her own lifetime by the gift of half of her home to Scripps Research. Her generous contribution will help further medical progress that will benefit many future generations. She will be missed.

Lt. Colonel and Mrs. Richard K. Blackledge, USAF (Ret.)
 Mr. and Mrs. John A. Blaich
 Mr. and Mrs. Martin Blair
 Mr. and Mrs. William N. Blatt
 Mr. and Mrs. Robert H. Blayney
 Mr. and Mrs. T. Mark Bleak
 Bob & Gary's Field Fresh Berries
 Mr. and Mrs. Dieter K. H. Boegner
 Mr. and Mrs. Harold R. Boelhauf
 Mrs. Sterling X. Bogart
 Ms. Jean S. Bogie
 Dr. and Mrs. William Boisvert
 Mr. and Mrs. M. Booth
 Mr. and Mrs. Jack W. Booth
 Mr. and Mrs. Earl M. Booth
 Ms. Lillian S. Borgsmiller
 Mrs. Phyllis Borgsmiller
 Mr. Avron W. Borick
 Mr. William Bornhorst
 Mr. and Mrs. Lester A. Bornt
 Mr. Jay Borr
 Mr. Walter M. Bott
 Mrs. Jean E. Bountis
 James Lewis Bowers, Ph.D.
 Mr. and Mrs. W. Bruce Bowers
 Mrs. Richard N. Bowker
 Mr. and Mrs. Charles C. Bowles
 Mr. and Mrs. Harry A. Bowman
 Mr. and Mrs. Robert L. Bowman

Mr. and Mrs. Donald J. Boyd
 BP Foundation, Inc.
 BPOE 1561 Bingo Charity Fund
 Mr. Alexander R. Bradie
 Mrs. Ruth I. Bradley
 Jeanne G. Brady, R.N.
 Mrs. Frances T. Brainerd
 Mr. and Mrs. Harry E. Brakebill
 Mr. Steven Bramson
 Mr. and Mrs. Sam Bramey
 Mr. Bernard Branche
 Mr. and Mrs. William C. Brandt
 Mr. Wilbur T. Breckenridge, Jr.
 Dr. and Mrs. Waldemar Brehm
 Mr. Robert W. Bremer
 Mr. Floyd B. Bremermann
 Mr. R. A. Brendler
 Mr. and Mrs. Edward J. Brennan, Jr.
 Dr. and Mrs. Melvin A. Brenner
 Ms. Susan F. Brenner
 Mr. and Mrs. Daniel M. Brigham, Jr.
 Mr. and Mrs. Martin Brill
 Mr. Charles F. Briscoe
 Mr. Gerald Broad
 Mr. and Mrs. Worley Broce, Jr.
 Ms. Christine Broder
 Ms. Helen E. Brodersen
 Mr. and Mrs. Harold F. Broecker
 Mrs. Martha H. Bromley
 Mr. Gerald F. Brommer
 Robert M. Brooker, M.D.
 Mr. Loyn R. Brooks
 Ms. Doris R. Brosnan
 Mrs. Dorothy P. Brouillard
 Mrs. Adaline C. Brown
 Mr. Donald W. Brown
 Mr. and Mrs. Edward I. Brown
 Ms. Elma Brown
 Mrs. Ethel B. Brown
 Ms. Leila Brown
 Ms. Mary M. Brown
 Mr. Robert W. Brown
 Mr. Todd H. Brown
 Ms. Delores L. Brown-Young
 Ms. H. June Brubeck
 Thomas W. Bruice, M.D., Ph.D.

Mr. and Mrs. Richard L. Brummage
 Mr. Bob Brundage
 Mr. and Mrs. Oscar Bruner
 Mr. and Mrs. Guy Bruni
 Mr. and Mrs. Harrell W. Brunson
 Ms. Gail J. Brunston
 Mrs. Norma P. Brutocao
 Mr. and Mrs. Richard A. Buck
 Mr. Robert J. Buehler
 Mr. and Mrs. Lawrence Bukzin
 Mrs. Burdell C. Bulgrin
 Mr. and Mrs. Harry P. Burford
 Mr. Jack F. Burford
 Mr. Moses Burg
 Mr. and Mrs. William Burich
 Ms. Marilyn E. Burlison
 Ms. Lois M. Burson
 Mrs. Mary E. Burson
 Mr. Gerald A. Burton
 Mrs. Marjorie F. Burton
 Mrs. Philip Burton
 Mr. and Mrs. Chester Burwick
 Mrs. Diane F. Busch
 Mr. Robert H. Buskirk and
 Ms. Peggie Zuber
 Mr. Edward S. Buszta
 Mrs. Earlyne Butler
 Mr. and Mrs. Otis Lynn Butler
 Mr. Steve Butler and
 Ms. Nancy S. Hongola
 Mr. Bernard D. Butnik
 Ms. Linda M. Butts
 Mr. Norbert A. Buzz
 Mr. and Mrs. J. Michael Byrne
 Captain and Mrs. John A. Byrne, Jr.,
 USN (Ret.)
 Mr. and Mrs. Donald R. Byrnes
 Mr. and Mrs. Stanley B. Cable
 Mr. and Mrs. Louis J. Cacia
 Mr. Amos D. Cadiente
 Mrs. Patricia Ann Cady
 Mr. and Mrs. Robert B. Cahall
 Mr. and Mrs. Stanley V. Cain
 Mr. and Mrs. Santo Calantoni
 Mr. Floyd Dean Caldwell, Jr.
 Mr. and Mrs. Victor E. Caldwell

Dr. Paul J. Califano
 Mrs. Ruth Key Call
 Mr. and Mrs. Joseph J. Callaci
 Mr. Donald R. Cambra
 Mr. and Mrs. Robert J. Campana
 Mr. and Mrs. Bill C. Campbell
 Mr. and Mrs. Glendon M. Campbell
 Mr. and Mrs. James B. Campbell
 Mr. and Mrs. Leo S. Campbell
 Mr. and Mrs. Robert R. Campbell
 Mrs. Ruth Mary Campbell
 Ms. Catherine M. Cannon
 Mr. and Mrs. Rolf D. Cape
 Mr. and Mrs. Donald F. Capp
 Mr. and Mrs. Harry Capra
 Mrs. Avis Wathen Cardwell
 Ms. Mary L. Carleton
 Carlin Construction Company
 Mr. and Mrs. Carl Edward Carlson
 Ms. Ramona F. Carlson
 Mr. Joseph Carnes
 Mr. and Mrs. Edward A. Carpi
 Miss Ann T. Carroll
 Mr. and Mrs. William F. Carroll
 Ms. Jean C. Carrus
 Ms. Jane K. Carter
 Mr. and Mrs. Robert E. Carter
 Mrs. Lucille Carvelho
 Mrs. Judy Cascales
 Ms. Elizabeth Case
 Mr. Lamar Caselli
 Mrs. Barbara D. Casement
 Mrs. Louise E. Casey
 Cash and Son
 Mr. and Mrs. Primo Castagno
 Ms. Amelia M. Castro
 Ms. Irene C. Catarella
 Mr. Roger S. Caughlin
 Ms. Paula A. Cavy
 Mr. and Mrs. Earl D. Cecil
 Mr. and Mrs. George F. Ceithaml
 Mrs. John A. Cella
 Mr. and Mrs. Julio M. Cendana
 Ms. Maria Chacon
 Champion Oil Properties
 Mr. and Mrs. W. H. Champion

Mr. Denis H. Chan
 Mr. and Mrs. Joseph C. Chan
 Mr. Kenneth Chan
 Mr. and Mrs. Ronald R. Chan
 Ms. Connie G. Chaney
 Mr. Stuart Alan Chapman
 Ms. Violet R. Chappelow
 Charles Dorsch Ship's Agent, Inc.
 Charlotte Russe
 Mr. Martin A. Chase
 The J. P. Morgan Chase Foundation
 Mr. and Mrs. Anatole Chauvin
 ChevronTexaco Matching Gift Program
 Mrs. Dolores Childers
 Mr. and Mrs. James E. Childs
 Ms. Mary Chin
 Mr. and Mrs. Ernest E. Chipman
 Mr. and Mrs. John M. Chipman
 Mr. and Mrs. Shiu Chu Chiu
 Mr. and Mrs. Charles S. Chivetta
 Colonel and Mrs. John A. Christensen
 Ms. Kaye E. Christianson
 Mr. and Mrs. Randall B. Christison
 Ms. Marjorie Christopherson
 Ms. Betty S. Chun
 Mr. and Mrs. Thomas J. Cimins
 Cinema Audio Society
 Mrs. Norene Claeysens
 Mr. David T. Clapp and
 Ms. Gayle Barsamian
 Mr. Edward T. Clare
 Rear Admiral Stephen S. Clarey
 Mr. and Mrs. Brett M. Clark
 Cliff C. Clark, Jr.
 Mr. and Mrs. Harvey R. Clark
 Mr. and Mrs. Jay Roger Clark
 Mr. and Mrs. Leonard Clark
 Mrs. Robin B. Clark
 Mr. Arthur A. Clerici
 Mr. and Mrs. Andrew J. Cline
 Ms. Betty B. Clopton
 Mr. Michael Clover
 Mr. John E. Cochrane
 Mr. and Mrs. David Coffman
 Albert J. and Jennie Cogorno
 Ms. Beverly P. Cohan

Mrs. Ann Cohen
 Mr. and Mrs. Clarence B. Cohen
 Ms. Leona Cohen
 Dr. and Mrs. Sam C. Colachis, Jr.
 Ms. Mary A. Coles
 Mr. Nick Collaro
 Ms. Susan C. Colligan
 Mr. Brian B. Collins
 Mr. and Mrs. William W. Collins
 Ms. Nell Colocado
 Mr. and Mrs. A. Colton
 Comfort Keepers

Foresight | In 1987, the late Lita Annenberg Hazen funded an endowed professorship in immunochemistry at Scripps Research. With remarkable foresight, she made another significant gift a couple of years later to establish the Lita Annenberg Hazen Science Center at the institute. Her gift helped provide for the expansion of the Scripps Research campus to the east side of Torrey Pines Road, a critical move for the future of the institute's basic research efforts especially given the growth of the biotechnology industry on the Torrey Pines mesa. Today, the Lita Annenberg Hazen Foundation under the leadership of Mrs. Hazen's daughter, Cynthia Polsky, continues to be a strong institutional ally through its support of the Lita Annenberg Hazen Professorship in Chemistry held by Vice President of Academic Affairs and Dean of the Kellogg School of Science and Technology Jeffery Kelly, Ph.D.

Community Spirit | Scripps Research

Trustee Ralph Shapiro and his wife, Shirley, have endowed a position in the Scripps Research Summer Research Internship Program—once again enriching the San Diego community. The gift ensures that at least one undergraduate student participate in an Education Outreach Program internship every summer in perpetuity. Their hope is that this gift will enable young people, especially women and minority students, to come into contact with basic research and be inspired by its possibilities.

Ms. Joanie Commons
Community Foundation Silicon Valley/
Mr. James Walker
Mr. and Mrs. Joseph Pierce Conaty
Fillmore Condit
Ms. Betty B. Conlin
R. Patrick and Sharon Connell
Ms. Kathryn Conner
Dr. and Mrs. Richard J. Conroy
Ms. Annabel Dushane Cook
Mr. and Mrs. Rodney L. Cook
Mr. Richard Cooke
Mrs. Angela S. Cooney
Ms. Roslyn Cooperman
Ms. Winifred L. Copeland
Mr. David C. Copley
Ms. Lois J. Copper
Mr. and Mrs. Robert Cosway
Mr. Edward W. Cotter
Mr. and Mrs. M. Lee Cotterman
County Burner and Machinery Corp.
Mr. and Mrs. James M. Cowley
Mr. Charles Q. Cox
Mr. and Mrs. Eric T. Cozens

Mr. and Mrs. Robert C. Cozens
Ms. Alma C. Crabtree
Mrs. Cecilia D. Craig
Mr. and Mrs. Robert H. Cramer
Mr. and Mrs. Stanley E. Cramer
Mr. Marguerita Craycroft
Mr. and Mrs. Alve Crestetto
Mr. and Mrs. Allen B. Crews
Mr. and Mrs. Lyle Cripe
Mr. and Mrs. Harry W. Crocker
Ms. Janice Claire Croft
Mr. Samuel R. Crookshanks
Mr. and Mrs. Alfred L. Cross
Mr. Lewis J. Crossland
Ms. Margaret M. Ctvrtlik
Cubic Corporation
Ms. Carol Culligan
Mrs. Dorris I. Cummings
Mr. and Mrs. Edward H. Cummings
Mr. and Mrs. B. Wesley Cunningham
Ms. Louise E. Cunningham
Mrs. Florance G. Cuno
Mr. and Mrs. Timothy T. Curran
Mr. Joseph C. Currey
Mr. John W. Curtis
Mr. and Mrs. Stuart Cuthill
Mr. and Mrs. Bemanali H. Dadbeh
Mr. and Mrs. John M. Dahl
Mr. and Mrs. Robert N. Dahlgren
Mr. Ralph E. Dahlstrom
Mr. and Mrs. Eugene P. Dahm
Mr. and Mrs. Robert Daley
Mr. John A. Dall
Mr. Brian Dallaire
Mr. and Mrs. Ronald R. Dalzell
Ms. Clara Marie Daniel
Mrs. Nancy J. Daniels
Mr. Ernest L. Danielson, Jr.
Mr. and Mrs. Joseph H. Daou
Ms. Lorna E. Darden
Mr. and Mrs. Richard L. Darling
Mr. and Mrs. James Darr, Jr.
Mr. Niloy Das
Ms. Carolyn J. Dasher
Dave's Flower Box
Ms. Barbara I. David

Mr. and Mrs. Robert A. Davidow
Mr. and Mrs. Donald D. Davidson
Mr. and Mrs. A. I. Davis
Alice B. Davis
Mr. and Mrs. Galen L. Davis
Dr. and Mrs. Harold A. Davis
Ms. Nancy J. Davis
Mr. Peter E. Davis
Mr. and Mrs. Terry Davis
Ms. Victoria C. Davis
Mr. and Mrs. Woody Davis
Mr. Charles W. Day
Mrs. Eunice G. Day
Ms. Yolanda C. De Alvarez
Mr. and Mrs. Allan S. De Frates
Mr. and Mrs. John D. De Gregory
Ms. Judith E. De Long
Mr. and Mrs. Manuel J. De Loura
Ms. Maria Luisa A. de Rodriguez
Mr. and Mrs. C. Wm. Dealy
Mr. and Mrs. Alex DeBakcsy
Mr. and Mrs. John E. Debruyne
Lt. Colonel and Mrs. Jason Decker
Mr. and Mrs. James P. Delapa II
Mr. Lee Delay
Mr. and Mrs. Howard M. Demmelmaier
Mr. and Mrs. Kyle E. Denning
Dennis Bar X/Mr. and
Mrs. Robert D. Dennis
Mr. and Mrs. Robert D. Dennis
Ms. Gale J. Dennison
Mr. and Mrs. Lawrence E. Denny
Mrs. Eleanor Denton
Designer Fabric
Mr. and Mrs. Paul L. Deutz, Jr.
Mr. and Mrs. Joseph F. Devanon, Jr.
Mrs. Marie T. Devlin
Ms. Edna A. DeVos
Mr. and Mrs. Alvah W. Dewese III
Mr. and Mrs. Eugene Di Cianni
Mr. John J. Di Giovanni
Mr. and Mrs. Cono Di Pietro
Mr. and Mrs. Norman Diamond
Mr. William J. Diaz
Mr. and Mrs. Thomas DiBenedetto
Ms. Joy M. Dickerson

Mr. Raymond O. Dietrich
 Mr. and Mrs. Karl F. Dietzel
 Mr. and Mrs. Paul F. Dillon
 Mr. Joseph R. Dimarco
 Miss Virginia L. Dimitry
 Mr. Michael W. Dipronio
 Mr. and Mrs. John M. Diracles, Jr.
 Mr. William Disher
 Mr. Howard H. Dixon
 Mr. and Mrs. John C. Dobyne, Jr.
 Mr. and Mrs. Joseph J. Doering
 Mr. and Mrs. Gregg W. Doherty
 Donald F. Riaska CPA, Inc.
 Ms. Caroline F. Donaldson
 Mr. Clarence E. Donato
 Mr. Norman L. Dondanville
 Mr. and Mrs. Joseph L. Dondero
 Mr. and Mrs. Richard Dondero
 Ms. Gloria M. Donichy
 Mr. Charles Dorsch
 Mr. George L. Dorsey
 Ms. Effie Doty
 Mr. Leon Doxey
 Mr. and Mrs. Griffith B. Doyle
 Mr. William D. Drake
 Mr. Charles Draper
 Mr. and Mrs. Art R. Driskell
 Ms. Mary L. Driver
 Mr. and Mrs. Robert C. Drummond
 Mr. and Mrs. Joseph M. Ducato
 Colonel Paul F. Dudley, USAF
 Mr. and Mrs. Eugene Dugan
 Mrs. Jamie L. DuHaime
 Mr. Lionel Duke
 Mr. and Mrs. Glen M. Dunham
 Ms. Frances M. Dunn
 Mr. and Mrs. Dean R. Dunphy
 Mr. and Mrs. Sewell N. Dunton, Jr.
 Mr. and Mrs. Allan C. Durham
 Ruth Esther Durham
 Mr. and Mrs. James L. Dyer
 Mr. and Mrs. James Eagan
 Mr. and Mrs. Walter M. Earley, Jr.
 Mr. and Mrs. Milt Earnhart
 Mr. and Mrs. James E. Easterly
 Mr. and Mrs. Homer L. Eaton

Mr. Jackson Eaves
 Ms. Shirley Eckstein
 Mr. Roland W. Eddy
 Mr. and Mrs. Gerald Edgar
 Mr. and Mrs. Salomon Edid
 Judge Lee Smalley Edmon and
 Mr. Richard J. Burdge
 Bruce G. Edwards, M.D.
 Mr. and Mrs. Alfredo E. Egaran
 Mrs. Lilly Eiber
 Ms. Lynne C. Eigler
 Mr. and Mrs. John W. Eitzen
 Mr. Errol Ekaireb
 Mr. Borje Ekberg
 Mr. J. William Ekegren
 Ms. Della Jean Elden
 Mr. Henry E. Elizagaray
 Mr. and Mrs. Jesus B. Elizarde
 Mr. and Mrs. James Ellis
 Ms. Marilyn J. Ellis
 Mrs. Patricia Elmore
 Elsevier Science Ltd.
 Mr. and Mrs. Allen E. Elwess
 Mr. and Mrs. William F. Emery
 Ms. Ellen F. Emold
 Ms. Donna J. Engbretson
 Mr. and Mrs. Perry V. Engle
 Mr. Eric A. Englund
 Mr. and Mrs. Frank J. Ennis
 Mrs. Julie Enriquez
 Mr. and Mrs. Joseph E. Erbs
 Mr. Elliott Barney Erhardt and
 Ms. Marian Fodge
 Mr. Roy A. Erickson
 Mr. and Mrs. Richard H. Ernst
 Mr. Francisco Esquer
 Esskay Properties
 Mr. Gates Etter
 Ms. Maria C. Evangelista
 Mrs. Audrey O. Evans
 Mr. Clifford Evans
 Mr. and Mrs. Donald O. Evans
 Mr. and Mrs. James W. Evans
 Mrs. Luella Joan Evans
 Mr. Nathaniel R. Evans
 Mr. Roscoe L. Evans

Roy A. Evans
 Mr. and Mrs. Daniel E. Even
 Mr. Eugene B. Even
 Mr. and Mrs. John E. Evenson
 Mr. and Mrs. Conrad J. Everts
 Mr. Earl R. Ewing
 Mr. and Mrs. Lewis J. Ewing, Jr.
 ExxonMobil Foundation
 F L Green Trucking
 Fairway Volleyball
 Mr. Rafael Fajer
 Mr. Hubert M. Falcon, Jr.
 Ms. Agnes P. Falton
 Mr. and Mrs. J. E. Fancher
 Dr. and Mrs. Kameel F. Farag
 Mr. and Mrs. Nasim Fares, Jr.
 Mr. and Mrs. Ken Farinsky
 Mr. and Mrs. George A. Farrand
 Mr. and Mrs. Howard Farrand
 Fashion Furniture Rental
 Ms. Geraldine E. Faucett
 Mr. and Mrs. Robert Faulk

Commitment | Betty Anne Arenz has been a friend and avid supporter of Scripps Research for many years due to her interest in basic research into cancer, melanoma, and diabetes. Betty Anne and her daughter Julie Anne Arenz through their family foundation, the Money/Arenz Foundation, made a generous gift towards the institute's purchase of its Immunology Building. Scripps Research was delighted to name an Immunology Building conference room the Money/ Arenz Foundation Conference Room in honor of their commitment to the institution and to finding a better understanding of diseases involving the immune system.

Mr. and Mrs. Charles R. Faust
 Mr. and Mrs. Salvatore Federico
 Mr. and Mrs. Robert F. Fei
 Mr. and Mrs. Fred W. Felson
 Captain and Mrs. Dan E. Fenn
 Mr. and Mrs. John C. Ferber
 Ms. Linda Ferber
 Mr. and Mrs. Donald C. Ferguson
 Ms. Veronica Fernandez
 Mr. and Mrs. Robert H. Fernn
 Ms. Celeste Ferris
 Ms. Lucille Ferris
 Ms. Martha L. Ferris
 Mr. and Mrs. Anthony Ferro
 Mr. and Mrs. John Fewster
 Ms. Margaret M. Fields
 Mr. Manuel Figueroa
 Mr. Peter Filanc
 Financial Advisory Consultants
 Mr. and Mrs. Willis Finkbeiner
 Mr. Thomas H. Finnegan
 Mr. Michael H. Finnell
 Mr. and Mrs. Walter E. Fiorentini
 Ms. Julie N. Firestone
 Mr. John M. Fiscella
 Mr. George A. Fischer
 Mr. and Mrs. Joel D. Fischer
 Ms. Patricia A. Fish
 Mr. and Mrs. John R. Fisher III
 Mr. and Mrs. William G. Flangas
 Fleet Private Clients Group
 Julia Bolton Fleet
 Mr. Herman L. Fleischer
 Mr. and Mrs. Allen J. Fleming II
 Ms. Lois J. Fleming
 Dr. and Mrs. Francis Thomas Flood
 Mr. Toby Flores
 Stanley Folb Intervivos Trust
 Rear Admiral and Mrs. H. J. P. Foley
 Mr. and Dr. L. Michael Foley
 Mr. and Mrs. Robert C. Foley
 Dr. Eugene R. Folk
 Mr. and Mrs. Peter D. Fonberg
 Mr. and Mrs. Gorman Fong
 Mr. and Mrs. James J. Forrey
 Mr. and Mrs. M. Gordon Forsyth
 Mr. and Mrs. Dominick L. Fortino
 Mrs. Frances Maxine Foster
 Mr. and Mrs. Bernard Fox
 Betty Jane Fox
 Mr. and Mrs. Larry G. Frahm
 Mr. and Mrs. A. John Frangos
 Mr. Douglass H. Frapwell III
 Mr. and Mrs. Harry C. Fraser
 Mr. Royal W. Fraser
 Mrs. Texann G. Fraser-Niedzwiecki
 Ms. Betty Free
 Ms. Mary Freeman
 Mr. and Mrs. Robert T. Freeman
 Elmer C. Frese
 Mr. and Mrs. Victor D. Freudenberger
 Ms. Ann Friary
 Mr. Seymour Friedman
 Ed Friendly
 Ms. M. Eloise Friensehner
 Ms. Maxine J. Fritts
 Judge and Mrs. Charles W. Froehlich, Jr.
 Mr. and Mrs. Hugh F. Frohbach
 Mr. and Mrs. James R. Froman
 Mrs. Barbara Fruechte
 Mr. David Frumkin
 Mr. and Mrs. Tai-Fook Fu
 Ms. Mary Y. Fujimoto
 Captain and Mrs. Gerald A. Fulk
 Mr. and Mrs. Clinton H. Fullen
 Mr. and Mrs. Thomas R. Fuller
 Mr. and Mrs. Dean C. Funk
 Mr. H. Robert Funk
 Ms. Mary E. Furbush
 Mr. Tibor Furrier
 Dr. and Mrs. Tetsuo Furuike
 Mr. Daniel Fybel
 Mr. and Mrs. Ernest Fybel
 Mrs. Elizabeth M. Gabay
 Lt. Colonel Robert C. Gaddi
 Mr. and Mrs. George N. Gafford
 Mr. Frank Gaines
 Mrs. Carol Gajewski
 Ms. Elizabeth A. Galicia
 Mr. and Mrs. Graham A. E. Gall
 Ms. Ann Gallagher
 Mr. and Mrs. Harold Bailey Gallison, Sr.
 Ms. Donna M. Gambee
 Mr. and Mrs. Tom Gambonini
 Mr. and Mrs. Doug Gammon
 Mr. and Mrs. David Ganoe
 Ms. Ruth Gans
 Mr. and Mrs. Clifford L. Gant
 Mr. Joseph Gantman
 Ms. Alejandra Garcia
 Ms. Betty Garcia
 Mr. and Mrs. Robert J. Garcia
 Mr. Abelardo Garcia-Elizondo
 Mr. Wilmar Redd Gardner
 Ms. Corinne E. Garland
 Mr. and Mrs. Jack D. Garrett
 Dr. Nicholas Gascoigne
 Mr. Charles C. Gates
 Ms. Fern Gates
 Mr. and Mrs. William C. Gathas, Jr.
 Mrs. Jean A. Gay
 Mr. Merlin L. Geddes
 Mr. and Mrs. Roger A. Gee
 Melven and Lynn Genser
 Mr. Roger P. Gentile
 Ms. Merle Georgantos
 Mr. Henry George
 Mr. and Mrs. Gerald Germany
 Mr. and Mrs. Ayyad R. Ghobrial
 Mr. and Mrs. Matteo A. Giacalone
 Mr. and Mrs. Paul J. Giampaolo
 Mr. J. R. Gibbs
 Mr. and Mrs. Alfred H. Gibeling
 Mr. and Mrs. Charles H. Gibson
 Mr. and Mrs. David Giguere
 Mr. Donald Gilbert
 Ms. Janice G. Gilbert
 Mr. and Mrs. Morton Gilbert
 Mr. and Mrs. Frank R. Gilberti
 Ms. Mildred L. Giles
 Mr. and Mrs. Marvin L. Gill
 Mrs. Judith Gillease
 Ms. Emily P. Gilmore
 Drs. Mark H. and Michele Ginsberg
 Mr. and Mrs. Phillip L. Ginsburg
 Ms. Edith G. Girardin
 Mr. Morris A. Glantz
 Mr. Morgan V. Glinski

Mr. and Mrs. David L. Glismann
Ms. Gertrude Gluckstern
Mr. George E. Gochenaur
Ms. Margaret Ann Godden
Mr. Earl F. Godenschwager
Mr. Stanley Goff
Ms. Vivian G. Goggin
Mrs. Judith Ann Golby
Mr. Shepperd Gold
Mr. Charles L. Goldberg
Ms. Connie K. Golden
Connie K. Golden
Mrs. Edward Goldfarb
Ms. Ruth Goldware
Mr. and Mrs. Gary M. Gole
Mr. Henry Gonzales
Mr. Ralph D. Gonzales
Mr. Alfonso Gonzalez, Sr.
and Rosa M. Virata
Mrs. Rosalinda Gonzalez
Ms. Arlene M. Goodes
Mr. and Mrs. Allan J. Goodman
Mr. and Mrs. Larry Goodman
Dr. and Mrs. Alvin Gordon
Ms. Gloria R. Gordon
Mr. Raymond L. Gordon
Mr. and Mrs. James D. Gore
Mr. and Mrs. Harold Gorewit
Mr. Hugh Gottfried
Mr. Joe W. Gotti
Mrs. Lois R. Gottlieb
Mr. and Mrs. Marvin S. Gottlieb
Mr. Eugene N. Gottsdanker
Mr. Carl H. Gottwald
Ms. Loella A. Goulet
Mr. and Mrs. J. Allen Graham
Mr. and Mrs. Ralph B. Grahl
Mr. and Mrs. Stan Grainger
Mr. and Mrs. Leroy F. Grannis
Mr. Kevin P. Grant and
Ms. Lisa N. Trivedi
Mr. and Mr. William A. Graul
Mrs. Janet Gray
Mr. and Mrs. Ronald E. Gray
Ms. Sadie F. Gray
Mr. and Mrs. Joseph Graybeal

Mr. and Mrs. Sidney Grazi
Mr. and Mrs. Matthew E. Greco
Mr. and Mrs. Arthur T. Greek
Mr. Eugene F. Green
Mr. and Mrs. William C. Green
Mr. and Mrs. Norman Greenberg
Herbert and Renita Greenberg
Dr. Oscar and Rita Greene
Mrs. Nathelle M. Greenleaf
Mr. Michael S. Greenspon
Mr. and Mrs. Robert J. Gregory
Mr. and Mrs. Thomas K. Gregory
Mr. and Mrs. Stanley J. Greif
Mr. W. H. Gremsgard
Mr. and Mrs. Roger Greve
Mr. and Mrs. E. Eugene Griep
Mr. and Mrs. John B. Griffiths
Mr. and Mrs. Claude D. Griffitts
Mrs. Marcia B. Griggs
Mrs. Juliette Grisay
Mr. Marvin E. Groner
Mr. and Mrs. Jess J. Groomer
Mr. and Mrs. Allen Grossman
Mr. Irwin Grossman
Irv Grossman Corporation
Dr. and Mrs. Edwin C. Grubbs
Mr. and Mrs. Frank Grunow
Mr. and Mrs. A. T. Guglielmino
Luca Guidotti, Ph.D., D.V.M.
Mr. and Mrs. Kristopher G. Gunterson
Mr. Bo Gustafson
Mr. Robert T. Gustafson
Mrs. Bernard Gutcheon
Ms. Marian Guthrie
Mr. and Mrs. Donald E. Guy
Mr. and Mrs. George A. Guy
Mrs. Helen H. Guyan
Ms. Barabara Lynn Gyles
Mr. Rolf Haas
Ms. Rita M. Hacherl
Mr. Jeffrey Hachlowski and
Ms. Diane Baker
Dr. and Mrs. Nicki J. Haddad
Mr. and Mrs. Earle H. Hagen
Ms. Marilyn Hagen
Mr. and Mrs. Raymond L. Haight, III

Mr. and Mrs. Daniel W. Hale
Mr. and Mrs. David Haley
Mr. and Mrs. Edward C. Hall
Dr. and Mrs. Harold R. Hall
Mr. and Mrs. James E. Hall
Mr. and Mrs. Victor M. Hall
Mr. Donald Halliday
Mr. Albert E. Hallor
Ms. Betty Halvins
Mrs. Joan B. Hamill
Mr. and Mrs. Bertwell W. Hamilton
Ms. Phyllis M. Hamilton
Mrs. Terry V. Hamilton-Quimby
Mrs. Betty L. Hamlett
Miss Sally M. Hammes
Jiahuai Han, Ph.D.
Mrs. Caroline C. Hancock
Mr. and Mrs. John L. Hanes
Mr. and Mrs. Harold H. Haney
Ms. Rita M. Hanf
Ms. Sandra Hangley
Mr. and Mrs. James W. Hanson
Mr. and Mrs. Owen W. Hanson
David Hardie Memorial Foundation
Mr. George G. Hardie
Mr. and Mrs. Franklin Hargrave
Mr. and Mrs. Bernard Harland
Ms. Jane S. Haro
Ms. Bessie A. Harper
Mr. and Mrs. James H. Harris
Mr. and Mrs. Joseph A. Harris
Mr. and Mrs. William A. Harris
Mr. William B. Harris
Mr. and Mrs. Robert S. Harroun
Mr. and Mrs. Curtis A. Hart
Ms. Erna H. Hartford
Mr. and Mrs. John W. Hartley
Mr. and Mrs. James S. Hartung
Mr. and Mrs. Joseph Harvey
Mr. Stephen A. Haselton
Mr. Harry Ashley Haszard and
Mrs. Pat Bassett
Mr. Edgar A. Hatch
Dr. and Mrs. Walter H. Hauser
Mr. and Mrs. C. T. Hauseur
Hawk Galleries

Mr. Roger L. Hawker
Mr. and Mrs. Robert W. Hay
Mrs. Rosemary G. Hay
Mr. Bernard Hayes
Mr. James Hayes
Mrs. Cynthia Heape
Mrs. Nicole M. Heape
Ms. Dorothy B. Heard
Ms. Alvia A. Hearne
Mrs. Jessie S. Heath
Ambassador and Mrs. J. Chic Hecht
Mr. Gerald L. Hedlund
Mrs. John Heers
Mrs. Sumi I. Heineman
Mr. and Mrs. Robert I. Heisner
Mr. and Mrs. Barney Hekkala
Mr. and Mrs. Frank Heller
Mr. and Mrs. Robert A. Hemke
Dr. Charles B. Hemphill, D.D.S.
Mr. Robert S. Henkel
Jane E. Henney, M.D.
Ms. Bonnie Hennigar
Mr. and Mrs. Thomas A. Henry, Jr.
Ms. Candace L. Henson
Mr. and Mrs. Roland L. Herberg
Mrs. Dora B. Herbert
Mr. James E. Herbert
Bob L. Herd Foundation
Mr. and Mrs. John Francis Hernandez
Ms. Yolanda Hernandez
Mr. and Mrs. Carlos P. Herrera
Mr. William F. Hertz
Mr. and Mrs. Arthur Herzman
Mr. and Mrs. Benjamin C. Hetherington
Mr. and Mrs. James R. Hetzler
Mr. and Mrs. Maurice J. Heyerick
Ms. Norma Hidalgo-Del Rio
Mr. Richard D. Higgins
Judge Alice C. Hill
Mrs. Kenneth E. Hill
Ms. Hildegard Hiller
Mrs. May A. Hillmer
Mr. and Mrs. Ronald D. Hilton
Mr. and Mrs. Lawrence D. Hirsch
Mr. Herbert Hirshfield, RHU
Mr. Theodore R. Hobson
Captain and Mrs. A. J. Hodder, Jr.,
USN (Ret.)
Dr. and Mrs. Abram Hodes
Mr. and Mrs. William Hodges
Mr. and Mrs. William H. Hodson
Mr. and Mrs. Frank W. Hoehn
Mr. and Mrs. Barry Hoeven
Ms. Gerri Hoffman
Mr. and Mrs. Ronald P. Hoffman
Mr. George W. Holbrook
Captain Marvin A. Holgren,
USN (Ret.)
Mr. Michael Holladay
Mrs. Anne C. Holland
Ms. Mary E. Hollis
Ms. L. Vivian Hollos
Ms. Carmella S. Holmes
Ms. Debra Holmes
Debra Holmes & Company
Mr. Douglas H. Holmes
Mr. and Mrs. John D. Holmes
Ms. Lavinia E. Holmquist
Mr. and Mrs. Robert G. Hom
Mr. Newton Homer
Mr. and Mrs. Michael Hooker
Ms. Elvenor N. Hooper
Mr. and Mrs. Donald E. Hopkins
Mr. W. M. Hopper
Mr. Lew Horn
Dr. and Mrs. Paul W. Horne
Mr. and Mrs. Izzy Horowitz
Mrs. Keena C. Houdeshell
Mrs. Sonya Hough
Mr. Ziad M. Houry
Mr. and Mrs. James Houston
Rear Admiral Joseph L. Howard
Mr. and Mrs. Robert W. Howey
James E. and Doris M. Hoyle
H.S. Investments
Mr. and Mrs. Frank C. Hu
Mr. and Mrs. Chien C. Huang
Mr. and Mrs. Frank L. Hubbard
Wilson LeRoy Hubbel
Mr. E. J. Hudak
Mr. and Mrs. Elbert G. Hudson
Mr. and Mrs. James L. Huesman
Mr. and Mrs. Hugh N. Hughes
Mr. John A. Hughes
Ms. Jane L. Hull
Mr. Brian Humphrey
Mr. Craig Anthony Hunt
Mr. and Mrs. Richard R. Hunter
Mrs. Roberta A. Hunter
Mr. Charles E. Hurst
Mr. and Mrs. Dennis Hurst
Ms. Emelia M. Husak
Mr. and Mrs. Nihad Hussain
Mr. and Mrs. Thomas M. Hust
Mr. and Mrs. James Hutchinson
Mr. Peter Barton Hutt
Ms. Mary Sue Shry-Hyatt
Ms. Beverly Hyman
Mr. and Mrs. James J. Hyncik
IBM International Foundation ICR
Ms. Jean S. Iglow
Mr. and Mrs. John F. Ignatz
Mr. and Mrs. Lawrence J. Illig
Mr. and Mrs. L. Jay Ingall
Mr. and Mrs. Frank L. Ingram
Mr. and Mrs. John C. Ingram
Mr. and Mrs. Jack Innis
Mr. and Mrs. Ralph S. Inouye
Mr. and Mrs. David L. Isa
Mr. Anthony R. Isabella
Mr. and Mrs. Tadao Ito
Ms. Toshiko Ito
Mr. and Mrs. Wayne W. Ivans
Mrs. Joyce M. Ivory
Mr. and Mrs. Jerry Iverson
J. J. K. Consulting Services
Mr. Vince Jacket
Mr. and Mrs. Gordon Kesson Jackson
Mr. John H. Jackson
Mr. and Mrs. David Myer Jacobs
Mr. and Mrs. Jack S. Jacobs
Ms. H. Rozella Jacobsen
Mrs. Fred M. Jacobson
Ms. Elsie M. Jacobson
Dr. and Mrs. James W. Jacobson
Mr. and Mrs. Robert A. Jacobson
Bill and Wendy Jacoway
Mr. Alvin Jagoda

Ms. Norma N. Jamandre
 Mrs. Richard P. James
 Mrs. Judith M. James
 Mr. and Mrs. Ted E. Janette
 Mr. Larry L. Janson
 Dr. P. J. Janssen, M.D.
 Ms. Mary Anne Jarboe
 Mr. Marco A. Jasso
 Ms. Patricia R. Jeane
 Mr. Ursel Jelinowicz
 Mr. and Mrs. John A. Jenkins
 Mrs. Laura V.H. Jenkins
 Mr. and Mrs. William G. Jenkins
 Ms. Charlotte E. Jenks
 Mr. and Mrs. Dwight Jerlow
 Mrs. Mae Belle Jessie
 Mr. Hector Jimenez
 Ms. Luzviminda A. Jimenez
 Ms. Gertrude A. Jockusch
 Mr. Gregory Johns
 Mr. Don Johnson
 Ms. Evelyn W. Johnson
 Mr. Gerald W. Johnson
 Mr. and Mrs. John O. Johnson
 Ms. Lee A. Johnson
 Mr. Michael Byron Johnson
 Mr. and Mrs. Milton J. Johnson
 Mrs. Ruth F. C. Johnson
 Mrs. Susan M. Johnson
 Mr. and Mrs. Ralph A. Johnston
 Ms. Babe L. Jones
 Mr. and Mrs. Bill R. Jones
 Ms. Dolores Jones
 Mr. Harry Lloyd Jones
 Ms. Sally Stevens Jones
 Mr. Thomas I. Jordan
 Mr. and Mrs. Paul E. Joseph
 Mr. Jerry A. Jouret
 Mr. and Mrs. Edward S. Juchniewicz
 Mr. and Mrs. Gene Judd
 Dr. and Mrs. Richard W. Judd
 Mr. and Mrs. Christopher M. Judson
 Mr. Thomas R. Juettner
 Ms. Betty J. Julson
 Mr. and Mrs. Louis J. Jurus
 Mr. and Mrs. Ian Kagihara
 Mrs. Frances R. Kahan
 Mr. and Mrs. Robert J. Kalinowski
 Mr. and Mrs. Lionel Kalish
 Mr. and Mrs. Robert A. Kaloosdian
 Ms. Viviane Kamras
 Mr. Martin E. Kantor
 Mrs. Herbert R. Kapin
 Mrs. Harry Kaplan
 Mr. and Mrs. Theodore Kaplan
 Mr. and Mrs. Robert Karl
 Mr. and Mrs. Bernard Karlin
 Mr. and Mrs. William J. Karnes
 Mr. and Mrs. Haroutioun H. Kasparian
 Louisa S. Kassler
 Mr. and Mrs. John W. Katnic
 Mr. and Mrs. Robert F. Katz
 Mrs. Destany Katzel
 Mr. and Mrs. Julian Kaufman
 Mr. Thomas J. Kavanagh, Jr.
 Mrs. Agnes M. Kay
 Mrs. Julia H. Keelin
 Mr. Francis J. Keenan
 James C. Keener
 Mr. and Mrs. John W. Keffer
 Ms. Judy Keim
 Captain and Mrs. Bruce W. Keller
 Mr. Gordon B. Keller
 Mr. and Mrs. Harold A. Keller
 Mr. Joseph E. Kelley
 Mr. and Mrs. Robert V. Kelley
 Ms. Bette I. Kelly
 Mr. John Kelly
 Mr. and Mrs. Larry A. Kelly
 Mr. and Mrs. Christopher K. Kenefick
 Ms. Mary Kennedy
 Mr. Charles F. Kennel
 Ms. Jo Ann Kenney
 Mr. William R. Kent
 Mr. Joe Kenworthy
 Mr. and Mrs. Robert L. Kerber
 Mr. Mark E. Kessler
 Mr. and Mrs. John W. Ketchem
 Mr. and Mrs. Robert V. Keyes
 Mrs. Mona Khazei
 Mr. and Mrs. Gordon M. Kibler
 Mr. and Mrs. John W. Kibler
 Mr. and Mrs. Richard Kielhorn
 Mr. and Mrs. William Kimmich
 Ms. Eloise L. King
 Mr. and Mrs. James E. King
 Mr. and Mrs. Robert B. King
 Mr. and Mrs. Edgar W. Kintzele
 Mr. Robert J. Kircher
 Mr. Alexander J. Kiriaze
 Mr. and Mrs. G. B. Kirner
 Ms. Donna L. Kisela
 Mr. and Mrs. Keith Kishbauch
 Mr. Charles R. Kittelson
 Ms. Lucile G. Kittredge
 Ms. Colleen Kittrelle
 Mr. and Mrs. Buster I. Kiyono
 Mr. Jerry Klein
 Mrs. Marie L. Kline
 Mr. Robert K. Klinger
 Mr. and Mrs. Warren H. Klure
 Dr. and Mrs. J. William Knox
 Mr. and Mrs. Duane H. Knutson
 Mr. G. Peter Kohl
 Mr. and Mrs. Min Koide
 Mr. and Mrs. Donald R. Kojis
 Mr. Charles H. Koll
 Mr. and Mrs. Frederick J. Kollmorgen
 Mr. and Mrs. George Koopman
 Ms. Mary Koppel
 Mr. and Mrs. Frank J. Kosinski
 Mr. and Mrs. Michael Kostka
 Mr. and Mrs. Antoine H. Kouzoukian
 Ms. Dorothy E. Kozdera-Katzmark
 Mr. and Mrs. Charles J. Kramer
 Mr. and Mrs. Robert D. Kravet
 Dr. and Mrs. Harold Kravitz
 Mrs. Muriel Kreeger
 Mr. and Mrs. William I. Krewsun
 Mr. and Mrs. George L. Krowl
 Mr. and Mrs. Edward A. Krupotich
 Mr. and Mrs. Richard G. Kuck
 Mr. Carl P. Kugel
 Ms. Lorna T. Kugler
 Mr. Mitsu Kumagai
 Mr. W. Trevor Kurth
 Mr. and Mrs. Allan H. Kurtzman
 Mr. and Mrs. Joe Kuwahara

Mr. James W. R. Kyd
 Richard P. Laabs
 Mr. and Mrs. C. Joseph LaBonte
 Ms. Perla J. Laborin
 Ms. Anna Christin Laflamme
 Mr. Harold Lafont
 Mr. Isaac Lagnado
 Miss Antoinette Lajoye
 Mr. James L. Lake
 Mr. Meno T. Lake
 Mr. and Mrs. Richard E. Lambert
 Mr. and Mrs. Ray V. Lamborn
 Ms. Roberta A. Lamonica
 Mr. and Mrs. Neil L. Lampa
 Mr. and Mrs. Sidney Charles Lancaster
 Mrs. Cecelia Lance
 Isabel Lancellotti and Viola Lancellotti
 Mr. and Mrs. Gerald R. Lane
 Mr. and Mrs. David W. Lang
 Ms. La Vaune K. Lang
 Mr. Sidney Langer
 Mr. and Mrs. R.E. Langworthy
 Mrs. Amy Leung Lansang
 Mr. and Mrs. Robert D. Lanser
 Mr. and Mrs. Cristobal Lara
 Mr. and Mrs. Frank B. Lary
 Mr. Richard Last
 Latchford & Latchford
 Mr. Noel Latchford
 Mr. and Mrs. George W. Lattimer
 Mr. and Mrs. William M. Laub, Sr.
 Dr. and Mrs. James A. Laugharn
 Mr. and Mrs. Richard G. Laughrin
 Mr. W. Alan Lautanen
 Mr. and Mrs. Richard J. Lauter
 Mr. and Mrs. William Lavin
 Mr. and Mrs. George B. Law, Jr.
 Mr. and Mrs. Gregory E. Lawrence, Jr.
 Mrs. Edith L. Lawson
 Ms. Shirley Layton
 Mr. and Mrs. Willis R. Leach
 Mr. Franklyn N. Leavitt
 Mr. and Mrs. Bok Fu Lee
 Mr. David Robert Lee
 Mr. and Mrs. Shu Lee
 Lt. Colonel and
 Mrs. Gordon S. Lees (Ret.)
 Mr. and Mrs. Frank Lefkowitz
 Ms. Rhoda Leight
 Mr. John M. Leiman
 Mrs. George W. Leisz
 Mr. and Mrs. Hugh G. Lemon
 Mr. and Mrs. John E. Lentz
 Mr. and Mrs. Robert H. Lentz
 Mr. Ruiz G. Leopoldo
 Ms. Violet E. Lepper
 Mrs. Milton J. Lerner
 Mrs. Dolores E. Lesnick
 Mr. and Mrs. Melvin P. Lesser
 Mr. Robert Leventer
 Mr. R. Robert Leventry
 Mr. Ian S. Leveton
 Mr. and Mrs. Arlo D. Levi
 Harrison G. Levin
 Mr. and Mrs. Barry Levine
 Mr. and Mrs. Howard B. Levine
 Mrs. Helen S. Levitt
 Ms. Doris R. Levy
 Mr. and Mrs. Harold C. Levy
 Mr. and Mrs. Raymond Levy
 Dr. and Mrs. Yale S. Lewine
 Mr. and Mrs. John F. Lewis
 Mr. Martin D. Lewis
 Mr. Sam Lewis, Jr.
 Mr. and Mrs. Cecil E. Libbey
 Mr. Frank Lieu
 Judge and Mrs. Leslie W. Light
 Mr. and Mrs. Russell O. Lightcap
 Mr. and Mrs. Paul E. Liles
 Mr. Ronald L. Lilley
 Colonel Paul J. Limm
 Mr. and Mrs. Arnold C. Linde
 Ms. Mary Jane Lindley
 Mr. Richard Lingley
 Ms. Doris R. Linke
 Mr. and Mrs. Richard Linkroum
 Mr. and Mrs. Kenneth Linscott
 Mr. and Mrs. Paul Linsk
 Mr. and Mrs. David Lippey
 Mr. and Mrs. Phil Lisle
 Living Trust Consultant Service
 Mr. and Mrs. E. Grey Lockwood
 Ms. Louise M. Lockwood
 Mr. and Mrs. Robert L. Lohman
 Ms. Ernestine Long
 Mr. George W. Long
 Mrs. Frank M. Long
 Mr. and Mrs. Frank C. Lorey, Jr.
 Mr. and Mrs. Leo Louis
 Mr. and Mrs. Michael G. Lovas
 Mr. David M. Love
 Ms. Johanna M. Loveless
 Ms. Christy L. Lovell
 Ms. Alice Lowrance
 Mrs. James S. Lowrie
 Mr. and Mrs. Joe A. Lozano
 Dr. and Mrs. Anthony G. Lubowe
 Ms. Natalia S. Lucena
 Mr. Frank M. Lucia
 Mr. and Mrs. John P. Luddy
 Estate of Gordon R. Ludwig
 Mr. and Mrs. Wilbur A. Lunday
 Mr. and Mrs. George Lupinacci
 Mr. and Mrs. Ira S. Luttrell
 Mr. C. L. Lux
 Mr. Roger W. Lynberg
 Mr. Gerald M. Lynch
 Mr. and Mrs. Henry P. Lynch
 Mr. and Mrs. Robert W. Lynn
 Mrs. Herbert B. Sliger
 Mr. Thomas T. Ma
 Mr. Donald J. MacDonald
 Mr. Graham J. MacHutchin
 Ms. Garnett H. MacInnes
 Mrs. A. F. Maclean
 The MacPherson Family Trust
 Mr. and Mrs. Joe D. MacPherson
 Mr. Luis Miguel Lozano Magana
 and Mrs. Lucia Lozano
 Mr. and Mrs. Carl S. Maggio
 Ms. Raini Alfida Mahiddin
 Mr. and Mrs. Laurence G. Mahr
 Ms. Esmat Malakouti
 Mr. and Mrs. Isaac C. Malamud
 Mr. and Mrs. Melvin Male
 Mr. and Mrs. Walter Malen
 Mr. and Mrs. Jack Malin
 Mrs. Robert F. Maloney

Mr. Elliott Maltzman
Marianne Manchester, Ph.D.
Mr. Mario Mancusi
Mr. and Mrs. Max R. Mandel
Mr. and Mrs. Allan R. Mandelin
Mrs. Mary Mandra
Peter and Inge Manes
Ms. C. A. Manese
Mr. and Mrs. Calvin C. Mank
Mankoff Family Foundation
Mr. and Mrs. Ronald Mankoff
Dr. and Mrs. Norman E. Mann
Mr. and Mrs. Bob Manners
Ms. Vivian C. Mansulla
Mr. and Mrs. Andrew F. Manzi
Mr. Kenneth J. Marco
Ms. Anita J. Margolis
Ms. Eva Margolis
Ms. Manuela Q. Martinez
Mr. Jimmy Marmack
Mr. Jacob H. Marquette
Mr. and Mrs. Richard W. Marsellus
Mr. and Mrs. Norman P. Marshall
Mrs. Clifford P. Martin
Mr. William Martin
Mr. and Mrs. Armando G. Martinez
Mr. and Mrs. Joe Martino
Mr. Arthur J. Martinucci
Mr. and Mrs. Kenneth Martone
Mr. and Mrs. Wesley A. Martyn
Mary R. & Joseph R. Payden Foundation
Mrs. Ayako Masada
Chester M. and Mary C. Mason
Mr. and Mrs. Frank E. Mason
Mr. Hale Mason, Jr.
Mr. and Mrs. John S. Mason
Mrs. Lillie Mason
Mr. and Mrs. Antonio Mata
Mr. and Mrs. Jack K. Mates
The Deane B. Mather Family
Malcolm L. and Joan E. Matheson
Ms. Dorothy Fisher Mathews
Mr. Charles N. Mathewson
Charles N. Mathewson Foundation
Mr. and Mrs. Villy Mathiasen
Mr. Peter Matosian

Betty Jo Mattaro
Mr. and Mrs. Lyle T. Mattes
Mrs. Mary Lou Matthews
Mr. Samuel W. Matthews
Dr. Terry Lee Maul
Ms. Diane Maxon
Mr. George L. Maxwell
Mrs. Lillian May
Ms. Virginia B. May
Mr. and Mrs. Norbert J. Mayer
Dr. Mark R. Mayford and
Mrs. Karen Wager-Smith
Ms. Marjorie H. McBride
Mr. and Mrs. Marshall McBride
Ms. Gloria G. McCaffrey
Mr. Frederick K. McCann
Vice Admiral and
Mrs. William F. McCauley (Ret.)
Mr. William R. McChrystal
Mrs. Margaret Ann McClure
Mr. and Mrs. Robert F. McConkey
Mr. and Mrs. B. K. McCormick
Ms. Bonnie E. McCosh
Mr. James D. McCoy
Mr. and Mrs. Charles W. McCracken
Mr. and Mrs. J. Michael McCulley
Mrs. Janet McCurdy
Ms. Barbara McDaniel
Ms. Michelle McDaris
Mr. and Mrs. Brian P. McDonald
Ms. Gail M. K. McDonald
Dr. and Mrs. Harrison R. McDonald
Mr. and Mrs. Raymond R. McDonald
Ms. Nora B. McDonough
Mr. James McEvoy
Mr. and Mrs. Telford L. McEwan
Mr. and Mrs. Albert J. McFadden
Mr. John T. McFarland
Mr. and Mrs. George D. McGhee
Ms. Mary L. McGhee
Mr. Billy L. McGrew
Mr. and Mrs. Jack McGuin
Mr. and Mrs. Leo L. McGuire
Ms. Margaret F. McIrvin
Mr. L. K. McKenney
Mr. Keith McKeown

Ms. Michelle McKinney
Mrs. Katherine McLean
General and Mrs. Kenneth McLennan
Ms. Alene R. McNally
Ms. Jacqueline W. McNary
Ms. Nora E. McNeill
Mr. and Mrs. H. McNicol
Mr. Donald E. McRoberts
Mr. and Mrs. George M. McRoberts
Mr. and Mrs. Gilbert H. Meacham
Mr. A. James Meader
Mr. and Mrs. M. J. Mecklenburg
Mr. Paul W. Meckna
Mr. and Mrs. Eugene A. Mee
Mr. Richard N. Meginnity
Mr. John Meisenbach
Mr. Gerald W. Meisenholder
Mr. and Mrs. James J. Melas
Mr. and Mrs. H. Arthur Melosh
Mr. Fred C. Melsheimer, Jr.
Mr. and Mrs. Lawrence J. Melvin
Mr. and Mrs. Helmut L. Melzer
Mr. and Mrs. Bernard P. Menard
Mr. and Mrs. Leland E. Mench
Mr. and Mrs. C. L. Mendenhall
Mr. and Mrs. Horst F. Menzel
Mr. Richard G. Menzel
Vasant V. Merchant, Ph.D.
Rose E. Merino, M.D.
Ms. Diana B. Mertrude
Mesa Distributing Co., Inc.
Mr. and Mrs. Robert H. Messinger
Mr. and Mrs. Livo Mestrin
Mr. and Mrs. Kenneth J. Metzgar
Hans R. Meyer, P.E.
Mr. and Mrs. Wayne B. Meyerowitz
Mr. and Mrs. Robert A. Michaels
Mr. and Mrs. Edward Michelman
Mr. Richard Mickelson
Margery A. Mico
Mr. and Mrs. Earl D. Midkiff
Mr. and Mrs. Barth A. Mikals
Mr. and Mrs. Francis K. Mikawa
Mr. and Mrs. Dean Mike
David P. Millar, Ph.D.
Mr. and Mrs. Patrick Millay

Ms. Beryl D. Miller
 Mr. and Mrs. David H. Miller
 Mr. Donald E. Miller
 Ms. Erica Iahn Miller
 Mr. Herbert H. Miller
 Mr. and Mrs. Jack Miller
 Mr. and Mrs. Jack R. Miller
 Mr. and Mrs. Jim W. Miller
 Mr. John L. Miller
 Mr. and Mrs. Joseph Miller
 Mr. and Mrs. Lisle C. Miller
 Mr. Newell L. Miller
 Mr. and Mrs. Norman A. Miller
 Mr. and Mrs. Orrin W. Miller
 Mr. and Mrs. Wendell B. Miller
 Mr. and Mrs. William A. Miller
 Ms. Patricia Milligan
 Mr. Robert H. Mills
 Ms. Nelle F. Minnick
 Mrs. Keely Minton
 Miriam Benjamin Trust
 Mr. Leon J. Misiolek
 Colonel Joseph Douglas Mitchell,
 USA (Ret.)
 Mr. Wayne E. Mitsch
 Mr. William E. Mitze
 Mr. James T. Miyao
 Mr. and Mrs. Robert P. Moberly
 Mr. Donald W. Mogg
 Mr. and Mrs. Lajosh Mohachy
 Mr. and Mrs. P. L. Mohr
 Mrs. Vyvian C. Mohr
 Mr. Burkhard E. Moll
 Mr. and Mrs. Gilbert S. Mombach
 Mrs. Thelma T. Monagan
 Mr. N. Anthony Monde
 Mr. Frank Anthony Mongulla
 Monico Alloys, Inc.
 Ms. Martha R. Montanez
 Kenneth F. & Harle G. Montgomery
 Foundation
 Ms. Christine J. Moore
 Donald J. Moore
 Ms. Ilona J. Moore
 Mr. John R. Moore
 Robert Moore, M.D.

Ms. Bernice Morgan
 Mr. and Mrs. George A. Morgan
 Mr. William J. Morison
 Mr. John A. Morrill, Jr.
 Mr. Judson Morris
 Ms. R. Cherry Morrison
 Ms. Ingrid A. Morse
 Mr. and Mrs. Frank A. Mosebar
 Mrs. Leonie K. Moses
 Mr. and Mrs. Robert L. Motley
 Mr. Theano Mouratidis
 Mr. and Mrs. Dick Mouri
 Mr. and Mrs. Gene D. Movius
 Mr. Cut
 Ms. Barbara M. Mroczko
 Mr. and Mrs. Gerhard G. Mueller
 Ulrich Mueller, Ph.D.
 Mr. Gary A. Muench
 Mr. and Mrs. John Muha
 Mr. and Mrs. J. Mukai
 Mr. and Mrs. Ronald K. Mulcahey
 Drs. R. S. and Barbara Mullen
 Mr. and Mrs. Robert C. Muller
 Mr. Fred Mullins, Jr.
 Mr. and Mrs. Vincent R. Munar
 Mr. and Mrs. Augusto Muniesa
 Mr. Frank L. Munn
 Ms. Judith Munoz, Ph.D.
 Mr. Dennis R. Murayama
 Mrs. Eleanor J. Murdock
 Mr. Luigi Giovanni Murino
 Mr. and Mrs. John L. Murphy III
 Mr. and Mrs. A. L. Murphy
 Colonel and Mrs. Edward S. Murphy
 Ms. Kathleen L. Murphy
 Mr. and Mrs. Richard D. Murphy
 Mr. and Mrs. James G. Murray
 Ms. Rosemary Mae Murrey
 Mr. Thomas L. Mushegain
 Mr. Fred A. Musial
 Mr. and Mrs. James E. Musselman
 Mr. Earl B. Myer
 N. N. Jaeschke, Incorporated
 Mr. and Mrs. Joseph Nadhir
 Mr. and Mrs. Herbert Nagler
 Mr. and Mrs. Vinay K. Nagpal

Mr. and Mrs. Frank M. Nakamura
 Mr. and Mrs. Glenn Napierskie
 Mr. David Nash
 Mr. and Mrs. John F. Nastrini
 Ms. Maria R. Nava
 Mr. Juan Naves
 Mr. and Mrs. Micheal W. Neal
 Mr. and Mrs. E. Allen Nebel
 Mr. Lawrence G. Neece
 Mr. and Mrs. Charles F. Needell
 Mr. Rudy Neja
 Mr. and Mrs. Douglas K. Nelson
 Mr. and Mrs. Gregory Nelson
 Ms. Linda A. Nelson
 Vivien A. Nelson
 Dr. and Mrs. David Namazee
 Ms. Stella I. Nemitz
 Mr. and Mrs. Paul E. Nenner
 Mr. and Mrs. Herman C. Nester
 Mr. and Mrs. M. J. Nestrud
 Ms. Martha Neumann
 Mr. and Mrs. Alan Nevin
 Mr. and Mrs. Lynn I. Newby
 Mr. and Mrs. A. J. Neylan
 Mr. Don Thanh Nguyen
 Mr. John C. Nicholas
 Ms. Agnes A. Nichols
 Dr. and Mrs. Joseph T. Nichols
 Mrs. Connie Nicholson
 Niefert Certified Solutions
 Dr. Ricardo J. Nieva
 Mr. and Mrs. Henry B. Niles
 Mr. and Mrs. William C. Niven
 Mr. James D. Noe
 Noel H. Bridge & Co.
 Mr. and Mrs. Robert C. Nolte
 Mr. and Mrs. Walter L. Norberg
 Mr. and Mrs. John Norona
 Northern Illinois Heart Institute
 Mr. and Mrs. John C. Novak
 Mr. Harry C. Nudd
 Mr. and Mrs. David L. Nuffer
 Mr. Danny Nunez
 Ms. Jean G. Nurdning
 Dr. and Mrs. William L. Nyhan
 Mr. Edwin W. Nystrom

Mr. and Mrs. Alec Oberschmidt
 Mr. Dave J. O'Brien
 Mr. and Mrs. Owen G. O'Brien
 Mr. Oscar Ochoa
 Mr. and Mrs. James A. Odum
 Mrs. Donovan O'Donnell
 Mr. and Mrs. Robert J. O'Donnell
 Mrs. Robert Knox Ogle
 Yoshiaki Zenmei Ohkubo
 Mr. and Mrs. Timothy D. O'Horgan
 Mrs. Susanna T. Oken
 Ms. Barbara O'Leary
 Mr. David Oleksow
 Mr. and Mrs. Thomas F. Oles, Jr.
 Mrs. Irene Oliver
 Ms. Christine V. Olsen
 Mr. Clifford Olsen
 Ms. Louise B. Olson
 Mrs. Elsie L. Omlin
 Mr. and Mrs. Robert F. O'Neil
 Mr. and Mrs. Jere G. Oren
 Mr. Casimer J. Orlando
 Mr. and Mrs. Mariano J. Orlando
 Mr. Edward J. O'Rourke, Sr.
 Mr. and Mrs. Robert D. Ortenburger
 Mr. John Ortgiesen
 Ms. Gerda Osborn
 Mr. Henry K. Oshiro
 Mr. Saghir A. Osmani
 Mr. and Mrs. Maynard Ostrow
 Oval Liquor Store
 Jo Anne Overleese, M.D.
 Ms. Dorothy Overman
 Mrs. Lillian Owens
 Mr. Donald G. Ozburn
 Mr. and Mrs. James C. Paccione
 Mr. Salvatore Pace
 Ms. Aida Pacheco
 Mrs. Lillian F. Paden
 Raymond and Patricia Page
 Mrs. Patsy Iverson Page
 Ms. Ellen Jane Paik
 Mr. Elliot Palay
 Mr. and Mrs. Irwin Pallack
 Russell P. Paluso
 Mr. and Mrs. Dominic Panasiti
 Paoluccio, Paoluccio Associates
 Joseph and Cheryl Paoluccio
 Mr. and Mrs. Michael Papalia
 Mr. and Mrs. A. P. Pappas
 Mr. and Mrs. Mike L. Pappas
 Mrs. Rita M. Pappenfus
 Mr. and Mrs. J. Douglas Pardee
 Mr. and Mrs. Gregory T. Pardue
 Mr. John C. Parker
 Mr. John David Parker
 Mr. and Mrs. Joseph Phillip Parker
 Pasadena Foundation
 Mr. C. C. Pascal
 Ms. Emma K. Pascoe
 Mr. and Mrs. Gary J. Pasquinelli
 Patio Plastics
 Mr. and Mrs. Richard Patrick
 Mr. Willie Patrick
 Mr. and Mrs. Richard H. Patterson
 Mrs. Martha Paull
 Mr. Kenneth F. Paulovich
 Mr. and Mrs. Wallace W. Paulson
 Mr. and Mrs. John F. Pause
 Ms. Dorothy C. Pavlovic
 Ms. Genevieve Pawlowski
 Ms. Ann Paxton
 Ms. Sarah Jane Paxton
 Mr. William R. Payden
 Mr. and Mrs. George Pearce
 Mrs. Nelle Pearlman
 Mr. and Mrs. David J. Pearson
 Mr. and Mrs. Jonathan J. Pearson
 Mr. Edward L. Peery
 Ms. Dorothy L. Pekny
 Mr. and Mrs. Thomas K. Pembleton
 Mr. and Mrs. Frank X. Pendarvis
 Ms. Virginia Penn
 Pepsico Foundation
 Mrs. Helen Perejda
 Mr. and Mrs. Roger B. Perez
 Mr. and Mrs. Robert R. Perkins
 Mr. and Mrs. Maxwell M. Perlberg
 Mr. Marvin Perlman
 Mr. and Mrs. Charles B. Persing
 Señor Eduardo M. Pesel
 Ms. Milena Pesic
 Mr. and Mrs. Dierk D. Peters
 Mrs. T. L. Petersen
 Mr. and Mrs. Bruce Peterson
 Mr. Freeman R. Peterson
 Mr. and Mrs. Humerto J. Peterson
 Julian A. and Gloria H. Peterson
 Ms. Lisa C. Peterson
 Mr. and Mrs. Donald S. Peterson
 Mr. Frank Petraglia
 Mr. and Mrs. John R. Pfister
 Ms. Sherlyn Phares
 Ms. Bernice M. Phelps
 Colonels Carl and Lorraine P. Phillips
 Ms. Catherine M. Phillips
 Mr. and Mrs. Floyd A. Phillips, Sr.
 Mr. and Mrs. Harry W. Phillips
 Mr. and Mrs. Seymour G. Phillips
 Mr. and Mrs. Donald C. Phinney
 Al and Dolly Piano Foundation Inc.
 Mr. Albert D. Piano
 Mr. Fred J. Piazza
 Mr. and Mrs. Charles M. Piester
 Ms. Jean M. Pighetti
 Mr. and Mrs. Rudolph E. Piltch
 Mr. Sol Pinchuk
 Mr. and Mrs. Steven B. Pincus
 Mr. and Mrs. Todd H. Pinkowski
 Mr. and Mrs. Mason Pinnick, Jr.
 PipeVine, Inc.
 Mr. and Mrs. Keith E. Plank
 Mr. Anthony Plascencia
 Mr. and Mrs. Nicholas Platis
 Mr. and Mrs. Louis Plotkin
 Mr. Arthur Polansky
 The Polokoff Family Trust
 Mr. and Mrs. Lee M. Polster
 Mrs. Lorene F. Poma
 Mr. and Mrs. Clement Pomicter
 The Ponagansett Foundation, Inc.
 Ms. Sharon Jo Ponder
 Mrs. Raymond Pontarelli
 H. M. Poole, Jr.
 Mrs. Mary C. Poplin
 Mr. William Popp
 Mr. and Mrs. B. F. Porter
 Mr. and Mrs. William D. Pothoff

Ms. Kathy Poulin
 Mr. and Mrs. Douglas S. Poyourow
 Mrs. Donna K. Prendergast
 Mr. Marcus D. Presar
 Mr. Bob Presley
 Dr. Bernard Press, O.D.
 Mr. and Mrs. R. T. Pretzinger
 Mr. A. W. Prichard
 Mr. Frank Prieto
 Ms. Cheryl L. Proctor
 Mr. and Mrs. Edward Propper
 The Prudential Foundation
 Mr. and Mrs. Tom Puckett
 Nelson Puett Foundation
 Ms. Gypsy A. Pulliam
 Mr. Joseph A. Purnell
 Mr. and Mrs. Everette Pyeatte
 The Quaker Oats Foundation
 QUALCOMM, Incorporated
 Mr. and Mrs. George W. Quatman
 Mr. Marvin P. Quinn
 Ms. Linda A. Quinonez
 Ms. Diana Quint
 Ms. Faustina F. Quitasol
 R & J Dondero, Inc.
 R. B. Wilson Company
 R O L & Associates
 Mrs. Helen R. Raczkowski
 Mr. and Mrs. Robert Radell
 Ms. Elizabeth Radzik
 Mr. Michael P. Ramatici
 Mr. and Mrs. Floyd D. Ramey
 Mrs. Debra Ramirez
 Mr. and Mrs. Steve F. Ramirez
 Mr. and Mrs. Gerald H. Ramsey
 Mr. and Mrs. John G. Rashid
 Mrs. Edna M. Rath
 Ms. Dorothy M. Rathbun
 Dr. Britt Raubenheimer
 Mr. and Mrs. John J. Ravana
 Mr. and Mrs. Cornelius N. Ray
 The Rayner Foundation
 Mr. Arno A. Rayner
 Mr. Preciliano P. Recendez
 Ms. Ethel Redfield
 Redfield's Lock and Key
 Mr. and Mrs. Rick Reeder
 Mrs. Doris Reeg
 Mr. Michel D. Reeves
 Mr. and Mrs. John U. Regus
 Mr. and Mrs. Charles N. Reible
 Mr. and Mrs. Joseph Reich
 Mr. Gerald C. Reid, Jr.
 Mr. and Mrs. John Reilly
 Mr. and Mrs. Samuel J. Reiner
 Mr. and Mrs. Thomas W. Reinhardt
 Mr. and Mrs. Harry E. Reinhold
 Mr. and Mrs. Raymond Reischl
 Mr. and Mrs. Sidney Reitman
 Ms. Madeline T. Renner
 Mr. Harry Revkin
 Mr. and Mrs. Verner G. Rexroth
 Ms. Mary L. Reyen
 Ms. Helen North Reynolds
 Ms. Virginia B. Rhodes
 Mr. Ronald D. Ribyat
 Ms. Ida M. Ricci
 Mr. Alfred Rich
 Mr. and Mrs. Clifton L. Richards, Jr.
 Mr. and Mrs. Charles Richardson
 Mr. and Mrs. William E. Richardson
 Mr. and Mrs. L. D. Richins
 Mr. Norman Ricker
 Mr. and Mrs. Claude J. Riddick, Jr.
 Ms. Dawn E. Ridz
 Ms. Robin Riley
 Mr. and Mrs. W. Roscoe Riley
 Mrs. Jennie Ann Rindone
 Mr. John A. Rinek
 Colonel and Mrs. Francis Riney, USMC
 Mr. Alan Rings
 Mr. Gerald H. Rissman
 Mr. Max E. Risvold
 Mr. and Mrs. James Rivera
 Ms. Mary Rivera
 Mr. and Mrs. Joseph Rizzo
 Mr. Arthur Robbins
 Mr. and Mrs. Leonard C. Robbins
 Mr. and Mrs. Stanton I. Robbins
 Mr. and Mrs. Richard C. Roberson
 Robert Steinman Family
 Charitable Foundation
 Mrs. Esthere Roberts
 Mrs. Ida Lea Roberts
 Richard H. Roberts
 Mr. Vird A. Roberts
 Mr. and Mrs. A. G. Robins
 Mrs. Gloria K. Robinson
 Mrs. James I. Robinson
 Mrs. Miles Robinson
 Captain and Mrs. Neil H. Robinson,
 USMC (Ret.)
 Mr. and Mrs. Richard V. Robinson
 Mr. and Mrs. Ned Rocha
 Mr. and Mrs. Howard C. Rodean
 Mr. and Mrs. Harry P. Rodgers
 Mrs. Abelardo L. Rodriguez
 Mr. and Mrs. Mike N. Rodriguez
 Thomas Rodriguez
 Mr. and Mrs. Richard G. Roeder
 Mrs. Barbara Rogers
 Mr. and Mrs. T. R. Rogers
 Mr. and Mrs. Robert Roland
 Mr. and Mrs. Gary L. Rold
 Mr. and Mrs. Robert K. Roney
 Mr. Ralph Roos
 Mr. and Mrs. William M. Roozen
 Mrs. Sally Roseberry
 Ms. Michelle R. Rosenblatt
 Dr. and Mrs. Jeffrey M. Rosenberg
 Mr. and Mrs. Herman H. Rosenfeld
 Mr. and Mrs. Stanley Rosenfield
 Mrs. Mary B. Rosenkoetter
 Mr. and Mrs. Deane Earl Ross
 Ms. Helen Warren Ross
 Captain Richard B. Ross and
 Mr. Keith E. Ross
 Mr. and Mrs. Irving Roston
 Ms. Jolene Roth
 Mr. and Mrs. Emil J. Rothenberg
 Mr. and Mrs. Richard Roughton
 Mr. Darryl Rounds
 Mr. and Mrs. John W. Rowe
 Ms. Estela Rubalcaba
 Ms. Joan D. Rubenfeld
 Mr. and Mrs. Michael D. Rubin
 The Ruegsegger Family
 Gertrude C. Ruppel

Mr. and Mrs. Lawrence J. Rushall
 Mr. and Mrs. Kenneth P. Rusk
 Ms. Helen I. Sadleir
 Mr. Paul A. Sager
 Mr. and Mrs. Robert C. Saito
 Mr. Leonard B. Saken
 Mr. Jose P. Salas
 Ms. Yolanda R. Salazar
 Ms. Jeannette E. Saliman
 Mr. and Mrs. Frank J. Salm
 Mr. and Mrs. Gerrard Salomon
 Mr. and Mrs. Robert E. Salrin
 Sam Lewis, Inc.
 Mr. and Mrs. Federico Sam
 San Diego Gas & Electric Employee
 San Vicente Golf Club
 Mr. and Mrs. Robert W. Sandison
 Mr. and Mrs. Hubert Sandoz
 Dr. Kathryn A. Sant
 Mr. Gerasimos Santas
 Mr. Masao Santohigashi
 Mr. and Mrs. Arturo N. Santos
 Mr. and Mrs. Horace D. Sapp
 Judge and Mrs. H. Lee Sarokin
 Mr. and Mrs. Mike Saunders
 Ms. Corinne Sawyer
 SBC Employee Giving
 Mr. and Mrs. John N. Scelsa
 Mr. M. S. Schaeffer and
 Ms. Virginia T. Norwood
 Mr. and Mrs. Robert G. Schaffeld
 Mr. and Mrs. Edward Schaschl
 Mr. and Mrs. Bernard Schatz
 Mr. Stuart Scheidler
 Ms. Florence P. Schenker
 Mr. and Mrs. Paul Schenker
 Mr. and Mrs. David A. Schiffer
 Ms. Bonnie Schiller
 Mr. Elten F. Schiller
 Mrs. Una H. Schiller
 Mr. Jeffrey D. Schipper
 Mr. and Mrs. Edmund W. Schloss
 Mr. and Mrs. Howard A. Schmidt
 Mr. James F. Schmidt
 Mr. and Mrs. Robert J. Schmidt
 Mrs. Vesta Jenks Schmidt

Mr. and Mrs. Robert E. Schmitt
 Mr. and Mrs. Kenneth W. Schnaubelt
 Ms. Winifred K. Schnepf
 Mr. Richard Schock
 Dr. and Mrs. James A. Schoenberger
 Harry Albert Schoonover
 Ms. Dorothy L. Schorken, Inventor
 Mr. and Mrs. Carl C. Schott
 Ms. Stella T. Schott
 Ms. Dorothy B. Schrickel
 Mr. and Mrs. Rodney K. Schrock
 Mrs. Catharine P. Schroeder
 Mr. Donald P. Schultze
 Mr. and Mrs. Robert E. Schulz
 Mr. and Mrs. Ray V. Schumacher, Jr.
 Mr. and Mrs. Werner Schurig, Sr.
 Ms. Naomi Schwartz
 Ms. Teri F. Schwartz
 Suzanne Schwartzman
 Ms. Connie M. Sciacca
 Mr. and Mrs. Francis M. Scott III
 Mr. and Mrs. Gerald A. Scott
 Mr. and Mrs. Marshall W. Scott
 Mr. and Mrs. Vincent Anthony Scotti
 Mr. Kenneth E. Scripsma
 Major General and Mrs. Robert Scurlock
 Ms. Peggy Scott Seay and
 Mr. Fred J. Kruger
 Mr. Heddie O. Sedano
 Mr. and Mrs. Carl W. Sedler
 John R. Seffrin, Ph.D.
 Mr. and Mrs. James E. Seitz
 Mr. James Roy Seitz, Jr.
 Mrs. Gloria Strang Selander
 Select Investments
 Mrs. Rae J. Selevan
 Mr. and Mrs. Victor H. Seliger
 Mr. Charles E. Sellen
 Mr. and Mrs. Frank E. Sellers, Jr.
 Mr. and Mrs. Richard D. Selvick
 Mr. Daniel P. Selznick
 Senior Aerospace Jet Products
 Mr. and Mrs. Louis Senter
 Mr. and Mrs. Raymond J. Settimo
 S.G. Plastering
 Ms. Shelly Jay Shafron

Shafter Concrete Pipe Company Inc.
 Mr. and Mrs. Mohammed Saleem Shaikh
 Mr. Harold L. Shaman
 Ms. Joyce Shambaugh
 Ms. Jeanette Shammas
 Mr. and Mrs. Alfred Shanfeld
 Mr. and Mrs. Mike Shannon
 Mr. and Mrs. Donald Shapiro
 Admiral and Mrs. U.S. Grant Sharp
 Mr. James E. Shaw
 Ms. Laura F. Shaw
 Mrs. Lee C. Shaw, Sr.
 Mr. and Mrs. Tony Shaw
 Mr. and Mrs. Robert B. Shea
 Mr. and Mrs. Don Sheahan
 Mr. and Mrs. Leon Shedroff
 Mr. Dan Shelley
 Mr. and Mrs. Scott Shelton
 Mr. and Mrs. John Tuck Ming Shen
 Ms. Niran E. Shenoda
 Ms. Donna Shepherd
 Mr. Peter Shepp
 Mr. Charles Sherman
 Mr. and Mrs. Meyer Sherman
 Mr. and Mrs. Michael Sherman
 Mr. and Mrs. Richard W. Shewalter
 Mr. James C. Shingle
 Russell and Betty Shirk Foundation
 Ms. Mary Edith Sholtz
 Mr. and Mrs. Wallace A. Short
 Ms. Sana H. Shoshani
 Mr. and Mrs. James Shriver
 Mr. and Mrs. Howard L. Shuken
 Mr. James A. Sicard
 Captain and Mrs. Jerry R. Siefert
 Mr. and Mrs. John H. Siegel
 Mr. and Mrs. Robert L. Siegel
 Mr. and Mrs. William C. Sigrist
 Mr. and Mrs. Peter Sih
 Mr. David C. Silcox
 Commander John Sill, USN (Ret.)
 Ms. Lupe Silva
 Mrs. Freda Silver
 Mr. and Mrs. H. E. Simpson
 Mr. and Mrs. Ivan C. Simpson
 Mrs. Frieda B. Singer

Mr. and Mrs. Fred G. Singleton
 Mr. and Mrs. Anthony V. Sinicropi
 Mrs. Consuelo Sisto
 Mr. and Mrs. Edward Sivas
 Mr. Donald Skeoch
 Mr. Eric A. Skipsey
 Ms. Mary Skulavik
 Mr. and Mrs. Charles E. Slaughter
 Mr. and Mrs. John Slavik
 Mr. Kenneth L. Sleeper
 Mr. and Mrs. James M. Small
 Dr. and Mrs. Milton M. Small
 Mr. George Smalley
 Mr. and Mrs. Terry Smerling
 Mr. Norton M. Smirlock
 Mr. and Mrs. Allen J. Smith
 Mr. Alois Smith
 Miss Barbara Elaine Smith
 Mr. Brandt H. Smith
 Ms. Carol A. Smith
 Dr. and Mrs. Charles G. Smith
 Mr. E. Berry Smith
 Mr. and Mrs. Harry J. Smith
 Mr. and Mrs. James Lacy Smith
 Mr. and Mrs. Jeffrey L. Smith
 Mr. Kevin S. Smith
 Mr. and Mrs. Leafford A. Smith
 Mr. and Mrs. Raymond E. Smith
 Mr. and Mrs. Rodney O. Smith
 Ms. Thelma J. Smith
 Mr. and Mrs. Walker Smith, Jr.
 Mr. and Mrs. William Jack Smith
 Mr. Bernard J. Smolin
 Colonel and Mrs. Robert W. Smothers
 Mrs. Jeanette D. Smulski
 Mr. Joel R. Smulson
 Mrs. Norma C. Smurthwaite
 Mr. Gerald Smyth
 Mrs. Maureen M. Snell
 Mr. and Mrs. Jerry Sneve
 Ms. Jean R. Snow-Anderson
 Mr. Donnelly A. Sohlin and
 Mrs. Marjorie Fahey
 Mr. Fernando L. Sola
 Ms. Carolina Solorzano
 Mr. and Mrs. Albert Somit
 Ms. Marjorie Sommer
 Mr. and Mrs. Harold E. Sommers
 Mr. and Mrs. Lyle L. Songer
 Ms. Eva Sonnenberg
 Ms. Joan M. Sonnenberg
 Sonya Ltd.
 Mr. and Mrs. William G. Sooy
 Ms. Ramak Soussani
 Mr. and Mrs. Marvin Sparks, Jr.
 Colonel Walter L. Spaulding, USA (Ret.)
 Mr. James E. Spear
 Dr. and Mrs. Michael E. Speer
 Ms. Danie I. Spence
 Ms. Edie Spencer
 Mr. Herbert Spencer
 Sperry West Inc.
 Mr. James Scripps Spitzley
 Mrs. Linnie H. Spivey
 Sports Utility Motorcars, Inc.
 Mr. and Mrs. Reed Sprinkel
 Mr. John Sprouls
 Mr. Ram Srinivasan
 Mr. and Mrs. Donald A. Stack
 Ms. Rose M. Stack
 Mr. and Mrs. Edward C. Staehling
 Mr. Stephen R. Stahle
 Mr. and Mrs. Fred C. Stalder
 Ms. Marilyn J. Stalder-Burke
 Mr. and Mrs. Mark B. Staley
 Mr. William E. Staley
 Mr. and Mrs. Gerald Stamper
 Mr. and Mrs. Roger B. Standen
 Mr. Richard Stang
 Dr. and Mrs. J. Newell Stannard
 Mr. Preston Staten
 Mr. Harry R. Statler
 Mr. and Mrs. David R. Steele
 Mr. Charles J. Steichen
 Mr. and Mrs. David B. Stein
 Mr. and Mrs. Morris Stein
 Ms. Marilyn J. Steinberg
 Mr. and Mrs. Thomas F. Steinke
 Mr. O. J. Steioff
 Mr. Mark K. Stender
 Mr. Peter D. Stent
 Mr. and Mrs. John R. Stenzel
 Mrs. Merrie Stepek
 Mr. and Mrs. William L. Stephan
 Ann Capp Stephens
 Ms. Elizabeth L. Stephens
 Mr. and Mrs. Ernest R. Stephenson
 Mr. Aaron Stern
 Mr. Frank Stern
 Mr. and Mrs. Harry Stern
 Dr. and Mrs. Donald A. Stewart
 Mr. and Mrs. Gary G. Stewart
 Mrs. Patricia Brander Stewart
 Mr. and Mrs. Sydney A. Stewart
 Mr. and Mrs. Gardner A. Stickley
 Jack and Mark Stiefel Dairy
 Major General and Mrs. John T. Stihl
 Mrs. Lucille W. Stillwell
 Mrs. Merle M. Stokes
 Mr. and Mrs. Milton Stolaroff
 Mr. and Mrs. Avery Stone
 Mrs. Sandra W. Stone
 Mr. and Mrs. Mark C. Storer
 Mr. Stephan F. Strassmayr
 Mrs. Margaret P. Stratford
 Mr. C. Richard Strauch
 Mr. Stanley Strauss
 Mr. Harry A. Streamer
 Ms. Judith L. Streamer
 Dr. and Mrs. Charles W. Strebbig
 Mr. and Mrs. Horst H. Strebblow
 Mrs. Nettie Streiker
 Mr. Corbin T. Strickler
 Mr. and Mrs. Gerald Stroffolino
 Mrs. Joe Ann Strong
 Mr. Richard K. Strowmatt
 Mr. and Mrs. William L. Stugart, Jr.
 Ms. Ethel Sulkis
 Mr. and Mrs. G. G. Sullivan
 Mr. and Mrs. Jeremiah Sullivan
 Mr. and Mrs. Jerome B. Sullivan
 Dr. and Mrs. John Sullivan
 Mr. and Mrs. Stephen J. Sullivan
 Mr. and Mrs. Thomas F. Sullivan
 Mrs. Charles B. Sunderland
 Mr. Albert G. Sutcliffe
 Mrs. Elizabeth Lowell Sutton
 Mr. Earl H. Swanson

Reuben J. Swanson, Ph.D.
 Mr. and Mrs. Frank W. Swedberg
 Mr. and Mrs. Charles J. Sweeney, Jr.
 Mr. and Mrs. David M. Sweikert
 Ms. Irene M. Swenson
 Ms. Jean Swift
 Mrs. Edward W. Szaniawski
 Mr. and Mrs. Jerome S. Szczublewski
 Mr. Tibor Szenasi
 Mr. and Mrs. Kenneth M. Tagami
 Mr. and Mrs. Peter Tagni
 Ms. Sylvia Tagwerker
 Mr. and Mrs. Arthur N. Talbot
 Mr. John Talmadge
 Ms. Crisdeta Tan
 Dr. and Mrs. Eng M. Tan
 Mr. and Mrs. Arnold Tanaka
 Mr. and Mrs. Tyler Tanaka
 Mr. and Mrs. Val H. Tanaka
 Mr. and Mrs. Po-Yun Tang
 Ms. Rhea Tanner
 Ms. Yolanda Tapias
 Mr. and Mrs. Thomas E. Taplin, Sr.
 Mr. and Mrs. James A. Taramasco
 Mrs. Wanda W. Tarpey
 Mr. and Mrs. John J. Tassi
 Ms. Alfia Ann Taylor
 Mr. and Mrs. Donald D. Taylor
 Mr. and Mrs. John J. Taylor
 Mr. Vern L. Taylor
 Mrs. Suzanne Teasdel
 Mr. and Mrs. Kerry J. Teeple
 Mr. and Mrs. Phoebe Telser
 Mr. Kedrick H. Tendick
 Mrs. Emily R. Tenneson
 Ms. Audrey Anne Terras
 Mr. Robert Tesoro
 Mr. and Mrs. Luther M. Tester
 Mr. Charles Thatcher
 Mr. and Mrs. Dirk C. Thayer
 Mr. and Mrs. Benjamin G. Thomas
 Billie and Gillis Thomas
 Ms. Janet L. Thomas
 Mrs. George D. Thomas
 Mr. Robert L. Thomas
 Mrs. Earl M. Thompson
 Ms. Sandy Thompson
 Ms. Coralie C. Thomson
 Mr. and Mrs. Ira W. Thornton, Jr.
 Ms. Nathalie J. Thorpe
 Mrs. Kathlene Thorstensen
 Mr. and Mrs. Jerome A. Thrall
 Mrs. Della M. Thurgood
 Mr. and Mrs. Richard Thurston
 Mr. and Mrs. Fred R. Tietge
 Mr. and Mrs. Ralph W. Tilley
 Mr. and Mrs. Jack E. Timmons
 Mr. and Mrs. William J. Tirschfield
 Mr. Peter Tobias
 Mr. and Mrs. Jack Togut
 Mr. and Mrs. Turk T. Tokita
 Dr. and Mrs. John M. Tomasch
 Ms. Marge Tomlinson
 Mr. William L. Tooley
 Ms. Betty J. Toth
 Mr. and Mrs. Paul A. Towner
 Mr. and Mrs. Phuc M. Tran
 Mr. Xuan Tran
 Mr. and Mrs. Paul E. Traum
 Ms. Nancy L. Travers
 Mr. and Mrs. Jack W. Trefry
 Mr. Thomas H. Trimble
 Mr. James Troutt
 Mr. and Mrs. Philip D. Troyke
 Mr. Albert Trudeau
 Ms. Carol Trumpfheller
 Mr. Juerg F. Tschopp
 Roger Tubbesing, D.D.S., and
 Barbara Tubbesing, Ph.D.
 Mr. and Mrs. Eugene F. Tucker
 Mr. and Mrs. Henry A. Tucker
 Mr. and Mrs. Robert Tucker
 Mr. and Mrs. William H. Tulloch
 Mr. Gourney H. Turner
 Ms. Judith L. Turner
 Ms. Nora J. Turner
 Mr. and Mrs. Richard F. Turner
 Mr. and Mrs. Tom Turney
 Ms. Marie L. Tuthill
 Mr. and Mrs. Herbert W. Tuttle III
 Ms. Irene M. Twist
 Mr. Richard B. Twogood
 Mr. and Mrs. Bernard J. Tyler
 Mr. and Mrs. Robert W. Ullmann
 Mr. and Mrs. George W. Unger
 Mr. Anthony Uno
 Mr. Jonathan C. Upham
 Mr. James L. Uptegrove
 Urban Projects, Inc.
 U.S. Bank
 Mrs. Margarita Vaillancourt
 Mr. and Mrs. George G. Valentine
 Mr. and Mrs. Mrs. Delbert H. Valla
 Valley Trust Deed Services, Inc.
 Mr. and Mrs. Harvey C. Valley
 Ms. Janice Van Buren
 Mrs. Gladys M. Van Dorn
 Mr. David Van Putten
 Mr. and Mrs. James M. Van Vechten
 Ms. Anna Lee Van Wormer
 Ms. Antje P. Vanleeuwen
 Mr. and Mrs. Charles O. VanNote, Jr.
 Ms. Patricia VanSickel
 Mr. and Mrs. Alan VanSinden
 Mr. Lon Varnadore
 Mr. and Mrs. Charles L. Vecchiatto
 Ms. Esther M. Velasquez
 Mr. and Mrs. John P. Venezia
 Mr. and Mrs. Robert W. Vernon
 Mr. and Mrs. Frank A. Verstuyft
 Mr. and Mrs. Daniel Villasenor
 Vision Information Systems Inc.
 Mr. Ralph Vissell
 Mr. Carmine J. Vito
 Vivendi Universal Entertainment
 Mrs. Leo Vlcek
 Mr. and Mrs. Kurt Vogt
 Mr. and Mrs. John E. Vondracek
 Mr. and Mrs. Alexi Vontsolos
 Mr. and Mrs. Edward J. Voso
 Mrs. Jacqueline D. Wadsworth
 Captain and Mrs. Donald L. Waggoner
 Mr. and Mrs. Robert R. Wahler
 Mr. and Mrs. Fernando Waisbord
 Mr. and Mrs. George Wakatani
 Mr. and Mrs. John R. Walchli
 Ms. Helen Walchuck
 Ms. Blanche V. Walczak

Mrs. Barbara Walden
 Mr. and Mrs. Royce J. Walkenhorst
 Mr. and Mrs. James Walker
 Mr. T. M. Walker
 Ms. Nori Anne Walla
 Ms. Maria C. Wallach
 Ms. Katherine Waller
 Mr. and Mrs. Robert A. Waller
 Mrs. Doris L. Walsh
 Ms. Elizabeth Y. Walsh
 Mr. and Mrs. Walter W. Walt
 Mr. and Mrs. Don H. Walters
 Mr. and Mrs. Frank W. Walters
 Ms. Jeanne M. Walthuis
 Mr. and Mrs. Gerald J. Walz
 Dr. and Mrs. Brian W. Wamsley
 Mr. and Mrs. Philip R. Wanderer
 Mr. Donald W. Warfield
 Mr. and Mrs. Lawrence J. Warn
 Mr. Glenn Warner
 Mrs. Edith M. Warniak
 Mr. and Mrs. Leonard M. Warren
 Mr. William L. Warrick
 Mr. and Mrs. Edward R. Washington
 Ms. Gerda Wasser
 Mr. and Mrs. Marvin P. Wasserman
 Mr. and Mrs. Elmer T. Wasson
 Mr. Steven M. Wasson
 Mr. Brian B. Watkins
 Mrs. Karen L. Watkins
 Mr. George A. Watling
 Mr. Ingeborg V. Watson
 Ms. Lori C. Watson
 Mr. Matthew Watson
 Mrs. Robert C. Watts
 Mr. and Mrs. Richard E. Wayman
 Ms. Mary Wayne
 Mr. Basil Webb
 Mr. and Mrs. Emrick A. Webb
 Mr. Joseph S. Weening
 Mr. and Mrs. Louis Weger
 Mr. Bing-Yuan Wei
 Alice and Arthur Weiner
 Mrs. Meyer C. Weiner
 Mr. and Mrs. Duayne Weinger
 Mr. and Mrs. Thomas D. Weir, Jr.
 Grant and Barbara Weise, Sr.
 Mr. Herbert W. Weisheit
 Mr. and Mrs. Raymond S. Weisler
 Mr. and Mrs. Stanley Weissman
 Ms. Irene Welch
 Mr. and Mrs. Harry N. Wellhouser
 Mr. James R. Welsh
 Mrs. Harriet C. Werner
 Mrs. Friederike Werth
 Mr. and Mrs. Charles West
 Mr. Walter West
 Mrs. Eva H. Weyland
 Mrs. Myna B. Wheat
 Mr. and Mrs. Robert A. Whelan
 Mrs. Kathryn R. Whetstone
 Mr. and Mrs. Donald Whitaker
 Mr. Conrad White
 Mrs. Lyle R. White
 Ms. Jill M. White
 Mr. and Mrs. Mike White
 Robert and Irene White
 Mr. and Mrs. Thomas A. White
 Mr. and Mrs. Thomas E. White
 Mr. and Mrs. Timothy J. White
 Ms. Sally W. Whiteley
 Mr. Joe T. Whitfield
 Mr. Victor P. Whitney
 Mr. and Mrs. Joseph Wiener
 Mrs. Rose Mary K. Wiesen
 Mr. Robert A. Wiley
 Mr. and Mrs. Grant H. Wilford
 Ms. Sibyl D. Wilhelm
 Ms. Eula N. Wilke
 Mr. Roscoe S. Wilkey
 Mr. and Mrs. Harold J. Wilkins
 Mr. and Mrs. Hugh Wilkoff
 Ms. Marion V. Willadsen
 Mr. and Mrs. Allen D. Willard
 Mr. Dennis James Williams
 Ms. Joanne R. Williams
 Mr. and Mrs. Clement G. Williams
 The Paul J. Williams Foundation
 Mr. and Mrs. Stanley J. Williams
 Ms. Jane Kemmell Wills
 Ms. Babette Wilmers
 Donald Grey Wilson, Ph.D.
 Mr. and Mrs. Eugene Wilson
 Mr. and Mrs. Ray E. Wilson, Jr.
 Mr. and Mrs. Robert B. Wilson
 Mr. and Mrs. George Winard
 Ms. Ellen M. Windham
 Mr. Louis Wingo
 Mr. and Mrs. Jay M. Winokur
 Mr. and Mrs. Walter J. Winrow
 Mrs. Betty L. Winslow
 Mr. and Mrs. Tom E. Wire
 Mr. and Mrs. John P. Witherspoon
 Ms. Deanne L. Witt
 Mr. and Mrs. Carl J. Witteck
 Mr. and Mrs. Ronald K. Wittenberg
 Mr. and Mrs. W. L. Wofford
 Mr. and Mrs. Karl E. Wolf
 Ms. Gloria F. Wollenhaupt
 Mr. and Mrs. Kenneth A. Wolski
 Rt. Reverend and
 Mrs. Robert M. Wolterstorff
 Mr. Enrique V. Wong
 Mr. Roberto Wong
 Mrs. Jer K. Woo
 Ms. Jenni L. Wood
 Ms. Joyce E. Wood
 Mrs. Margaret L. Wood
 Mr. and Mrs. Kenneth R. Woodard
 Mr. Ross Woodard
 Mr. and Mrs. Bruce Woodford
 Mr. and Mrs. R. Keith Woodstra
 Mr. and Mrs. James R. Woodward
 Charmaine K. and Norman C. Woolley
 Mr. and Mrs. Robert R. Worchesek
 Mrs. Betty J. Workman
 Mr. John Worsley
 Mr. and Mrs. Donald W. Wright
 Mr. and Mrs. Ernest H. Wright
 Mr. Lawrence O. Wright
 Mr. and Mrs. Lewis L. Wright, Jr.
 Mr. and Mrs. Thomas M. Wright, Jr.
 Mr. Benjamin J. Wujek
 Ms. Patricia J. Wunder
 Mr. Walter T. Wyden
 Mrs. Ewart H. Wyle
 Ling Yang
 Drs. David and Natalie Yates

Mr. and Mrs. George Yermanos
 Mr. and Mrs. Steven M. York
 Mr. and Mrs. Henry R. Young
 Mr. and Mrs. Robert A. Young
 Mr. and Mrs. Louis D. Yuhas
 Mr. and Mrs. Shui-Chow Yung
 Mrs. Lynne G. Zabka
 Charles C. and Constance G. Zahorik
 Mr. and Mrs. Victor M. Zampa
 Mr. and Mrs. Herman R. Zanger
 Mrs. Marta P. Zarrella
 Mr. Robert C. Zeffery
 Mr. and Mrs. John Thomas Zeien
 The Zenith
 Mr. and Mrs. Saul Zenk
 Mr. and Mrs. Marvin L. Zepede
 Ms. Mary Zilverberg
 Mrs. Leeann P. Zimack
 Dr. J. K. Zimmerman
 Ms. Leona C. Zinky
 Mrs. Virginia Zirbel
 Mrs. Lawrence C. Zonker
 Mr. and Mrs. Frank Zucker
 Mr. and Mrs. Barry Zuckerman

Faculty and Staff

Carlos F. Barbas, Ph.D.
 Donald E. Bashford, Ph.D.
 Ernest Beutler, M.D.
 Douglas E. Bingham, Esq.
 William Boisvert, Ph.D.
 Gary M. Bokoch, Ph.D.
 Michael J. Buchmeier, Ph.D.
 Dennis R. Burton, Ph.D.
 Mr. Timothy T. Curran
 Gregory J. Del Zoppo, M.D.
 Thomas F. Deuel, M.D.
 Martin Friedlander, M.D., Ph.D.
 Philippe A. Gallay, Ph.D.
 Nicholas Gascoigne, Ph.D.
 Reza M. Ghadiri, Ph.D.
 Mark H. Ginsberg, M.D.
 Joel Melvin Gottesfeld, Ph.D.
 Luca Guidotti, Ph.D., D.V.M.
 Shelley Halpain, Ph.D.
 Jiahuai Han, Ph.D.

Jeffrey F. Harper, Ph.D.
 Wendy Lynn Havran, Ph.D.
 Ulla G. Knaus, Ph.D.
 Marianne Manchester, Ph.D.
 Anthina Markou, Ph.D.
 Mark R. Mayford, Ph.D.
 David P. Millar, Ph.D.
 Ulrich Mueller, Ph.D.
 David Namazee, Ph.D.
 Glen R. Nemerow, Ph.D.
 Arthur J. Olson, Ph.D.
 K. Michael Pollard, Ph.D.
 Julius Rebek, Jr., Ph.D.
 Hugh Rosen, M.D., Ph.D.
 Wolfram Ruf, M.D.
 Paul Russell, Ph.D.
 Daniel R. Salomon, M.D.
 Sandra L. Schmid, Ph.D.
 Peter G. Schultz, Ph.D.
 Gary Siuzdak, Ph.D.
 Charles D. Surh, Ph.D.
 John A. Tainer, Ph.D.
 Eng M. Tan, M.D.
 Peter Tobias, Ph.D.
 Bruce E. Torbett, Ph.D.
 Kottayil Varughese, Ph.D.
 Peter K. Vogt, Ph.D.
 Friedbert Weiss, Ph.D.
 Donna J. Weston
 Ian A. Wilson, D.Phil.
 Elizabeth Winzeler, Ph.D.
 Kaye I. Wynne

Scripps Heritage Circle

Captain and Mrs. James F. Agnew
 Mrs. Shirley J. Ahrens
 John Aliotta
 Audrie T. Allen
 Ms. Helen Alter
 Mr. and Mrs. Milo Altman
 John R. and Eileen Anderson IV
 Anonymous (85)
 Gordon and Rita Archibald
 Captain Edward S. Arentzen, USN (Ret.)
 Mrs. Joseph Aron
 Jose C. Bach

Mr. and Mrs. Kenneth G. Bacheller
 Helen G. Bangs
 Mike and Stella Banich
 Mrs. Elaine S. Barber
 Mr. and Mrs. Michael D. Bardin
 Andrew Barna
 Bruce G. Barnes
 Dolores Baron
 Mrs. Edith Barton
 Mr. John Baur
 Mr. and Mrs. Warren Becker
 Dr. Arnold O. Beckman
 Mrs. Alan Beerbower
 Mr. Arthur R. Bell
 Mr. and Mrs. Leonard E. Bellinson
 Mr. and Mrs. Vincent E. Benstead
 Mrs. Marjorie Benvenuto
 Mrs. Elisabeth Bergan
 Mr. Robert E. Bergh
 Marjorie Berns
 Mr. and Mrs. Lauren W. Blagg
 Drs. Gary and Barbara Blake
 Don and Thelma Blanche
 Dr. and Mrs. Duane E. Blickenstaff
 Mr. and Mrs. Richard L. Bloy
 Gerald K. Bodamer, D.D.S.
 John and Billie Bowen
 James Lewis Bowers, Ph.D.
 Jeanne G. Brady
 Mitchell J. and Merle E. Brodie
 Mrs. Alfred Brosio
 Dr. and Mrs. Robert P. Brouillard
 David and Maggie Brown
 Ethel B. Brown
 Mr. and Mrs. Gregory H. Brown
 John W. and Mary D. Brown
 Mr. and Mrs. Richard H. Brown
 Mrs. Priscilla Buckby
 Mr. and Mrs. Gerard J. Buckley
 Mr. and Mrs. Michael J. Buckley
 Mrs. A. A. Burnand III
 Kathleen M. Burns, R.N.
 Anita M. Burr
 Mrs. Mary E. Burson
 Mrs. Donald J. Buser
 Mr. and Mrs. Martin B. Buser

Mrs. Frank P. Butler
 Dr. and Mrs. Charles A. Camarata
 Mr. and Mrs. A. Bruce Campbell
 Dr. and Mrs. Charles G. Campbell
 Ruth C. Campbell
 Ms. Christine Camus and
 Ms. Dottie Camus
 Edna M. Canham
 Jean C. Carrus
 Dr. and Mrs. John C. Carson
 Mrs. Laine Carter
 David S. and Pamela M. Carton
 Clifford and Catherine Cary
 Mrs. Grace Caton
 Richard and Gail Cervantez
 Dr. and Mrs. John K. Cherry
 Mr. Doc Chew
 Dolores Childers
 Sr. Carol Ann Clark
 J. Dallas Clark
 Jack and Carol Clark
 Madeline E. Clark
 Anna D. Cleaver
 Wayne T. and Patricia M. Clemensen
 Alvin R. Coe
 Mr. Arthur J. Cohrs
 Sidney C. Cole
 James C. Conly, Ph.D.
 Gertrude B. Copeland
 Stanley Corbin
 Mr. and Mrs. John F. Cota
 Mrs. Beverly J. Cramb
 Thomas and Barbara Crane
 Mrs. Sam Crivello
 Mrs. Joseph A. Cuddihy
 Mr. Matt Dalton
 Mabel I. Danenberg
 Mr. Edwin H. Danenhauer
 Mr. and Mrs. Geoffrey B. Daniels
 Mr. and Mrs. Everett Davis III
 Howard D. and Luella M. Davis
 Mrs. Marjorie M. Day
 Florence De Lano
 Mr. and Mrs. Norbert Dean
 Mr. Edwin J. Deckelman
 John J. Delibos

Mrs. Antony Di Gesu
 Col. and Mrs. Alvin W. Dill
 Raoul M. Dixon
 Mr. Robert L. Donley
 Ms. Dolores F. Dorsey
 Mr. and Mrs. Roy P. Drachman
 Mr. and Mrs. G. Wallace Driver, Jr.
 Mr. and Mrs. John L. DuBois, Jr.
 Sharon and C. A. (Skeets) Dunn, Jr.
 Mr. and Mrs. Henri Durand
 Mr. and Mrs. Ames S. Early
 Dorothy E. Eckert
 Mrs. Mildred Lucille Edis
 Shirley Joan Ehrlich
 Mr. and Mrs. Arnold B. Elkind
 Kathryn R. Ellig
 Gates S. Etter
 Mr. Clifford Evans
 Mr. and Mrs. James W. Evans
 Helen Trahan Farschon
 Mr. James W. Farschon
 Dr. and Mrs. Ralph C. Faucett
 Mr. and Mrs. Winfield N. Felker
 Mrs. Russell Q. Fellows
 Mr. and Mrs. William E. Ferguson
 Arline Findorff
 Mrs. Robert J. Finnie
 Alvin Fishman
 Mr. and Mrs. Edwin J. Fix
 Mr. John Fonseca
 Chris and Margie Forman
 Alan B. and Cristina Foster
 Thomas H. and Alice R. Foster
 Henry and Winnifred Frabotta
 Mrs. Constance T. Fraleigh
 Mr. and Mrs. Victor Freudenberger
 Mr. and Mrs. Robert B. Fromm
 Mrs. Allan D. Gale
 Mrs. John J. Gartland, Jr.
 Dona J. Gastaldo
 Mrs. Audrey Geisel
 Lynn Genser
 Mr. and Mrs. Sol Gerber
 Dr. and Mrs. Nelson Gidcumb
 Ms. Doris M. Giegerich
 Allan R. Gilbert

Ms. Pauline A. Gillen
 Stanley H. Gist
 Eugenia Cooney Glow
 Mrs. Maxwell H. Gluck
 Douglas F. Goad
 Mr. and Mrs. John E. Goode, Jr.
 Howard Leslie Gosch
 Peggy Ann Gowan
 William A. and Ruth G. Graul
 Dr. and Mrs. Peter A. Gray
 Matthew E. Greco
 Rose Greene
 Mr. Vince K. Greiner
 Mr. and Mrs. Bruce Robert Grendell
 Harry J. and Janice Griffiths
 Leslie Gue and Jeanette Gue
 Mr. and Mrs. Robert C. Gunness
 Helen Guyan
 Mr. and Mrs. Fred Haag
 Mrs. Ardelle B. Haas
 Edward and Gene Haddon
 Dr. and Mrs. Richard L. Hall
 Nancy P. Hallenbeck
 Mr. and Mrs. Norman A. Halus
 Miss Sally M. Hammes
 Mrs. Joseph I. Hammond
 Mr. and Mrs. John L. Hanes
 Mrs. John Harmeling
 Eugene and Florence Harper
 Hugh M. and Angeline Harris
 Mrs. Tina Lyle Harrower
 Dr. and Mrs. Lawrence V. Hastings
 Mrs. Susan Stone Hayes
 Mrs. John M. V. Heldack
 Miss Anne Henkin
 Mr. Thomas A. Henry, Jr.
 Mr. and Mrs. James Herbert
 Mr. and Mrs. George Fredric Herrmann
 Mr. and Mrs. Gerald D. Heveron
 Dr. and Mrs. Steven L. Higgins
 Mary J. Hild
 Mrs. Arthur H. Hill
 Mrs. Kenneth E. Hill
 Mrs. Leslie C. Hill
 Jim L. and Genevieve Hilliard
 Mrs. William Hillyer

Drs. David W. Hodgens and
 Linda K. Olson
 Mr. Jerry Hollander
 Mrs. Edward D. Holmes
 Lavinia E. Holmquist
 Mr. and Mrs. Neal Hooberman
 Dr. and Mrs. G. Bruce Hopkins
 Mr. and Mrs. John Kent Howerton
 James Edward Hoyle and Doris M. Hoyle
 Dr. and Mrs. E. Woodrow Hunt, Jr.
 Alan R. Hunter
 Mr. Leonard Huntress
 Arnold H. E. Hutchinson
 Mrs. Gladis B. Innerst
 Amelia R. Irvine
 Maureen Ivey
 Dr. and Mrs. Sanford M. Izner
 Albert Jason
 Mr. and Mrs. Charles L. Jensen
 Mr. Joseph E. Jessop, Jr.
 Dr. and Mrs. Eugene A. Johnson
 Mr. and Mrs. Harold D. Johnson
 Okey B. Johnson, Jr.
 Gregg G. Juarez
 Virginia Kahse
 Charmaine and Maurice Kaplan
 Mrs. Virginia K. Karnes
 Mr. and Mrs. Henry H. Katz
 Mr. and Mrs. Julian Kaufman
 Mrs. Robert M. Keane
 Mr. and Mrs. W. Keith Kellogg II
 Ms. Shirley C. Kempheus
 Janet Kempton
 Mr. and Mrs. Robert Kerney
 Dr. William B. and Marjorie A. Kessler
 Richard E. and Bettylou H. King
 Mr. John Kipp
 Joyce A. Kissane
 Mrs. Eugene V. Klein
 Mr. and Mrs. W. H. Klure
 Mrs. William A. Knoke
 Jean Kocis
 Mrs. Lorraine B. Kratzer
 Lillian L. Kremer
 Mr. and Mrs. Walter Kurilchyk
 Willett R. Lake, Jr.
 Mrs. Margaret E. Lange
 Norman and Margaret Lassey
 Lee and Toni Leichtag
 Elizabeth B. Haas LeMenager
 Stephen L. and Sophia B. Levy
 Ms. Muriel J. Lewis
 Mr. Laurie Liddle
 Mr. William G. Lignante and
 Mrs. Alma F. Giroux-Lignante
 Mrs. J. T. Lipe
 Bette Lipsitz
 Mr. and Mrs. Jim Long
 Rosamond L. Loomis
 Mr. Frank LoVecchio
 Burl H. Mackenzie
 Harriet Maclean
 Mrs. William L. MacNeill
 Mrs. John D. Macpherson
 Mr. and Mrs. Sol A. Maksik
 Walter and Eleanor Malen
 Jack and Jeanette Malin
 Mrs. Edward A. Malmberg
 Art and Sandy Mandell
 Dr. Howard and Lottie Marcus
 Thelma Margolies
 Millie Marshall
 Dr. and Mrs. Stuart C. Marshall
 Mary C. Mason
 Dr. and Mrs. Kenneth P. Mathews
 Kyoko Matsuda
 Mrs. John McAdams
 Lois McAtee
 Mrs. Judy McComic
 Dr. and Mrs. James McCord
 James and Jewell McIlraith
 Mr. Dan McPherson
 Mr. and Mrs. John C. Merrill
 Mrs. Franny B. Mervis
 Burton Meyers
 Jane G. Miller
 Kenneth W. Miller
 Robert and Helen Miller
 Dr. and Mrs. James R. Moitoza
 Col. and Mrs. Harry F. Mooney
 Alvin J. Moore
 Mrs. Carleton G. Morehouse
 Mr. and Mrs. James E. Morris
 Mrs. Carlo A. Mosca
 Mr. and Mrs. John Mule
 Mr. and Mrs. George A. Murray
 Mrs. Harry Nachman
 Mrs. Norman J. Nachreiner
 Mr. and Mrs. Martin Nash
 Mrs. Gaines H. Neale
 Joan E. Nelson
 Mr. and Mrs. Paul E. Nenner
 M. J. and June Nestrud
 Ronald Newell
 Mr. and Mrs. Thomas P. Nickell, Jr.
 Mr. and Mrs. David Nightingale
 Mr. Edwin W. Nystrom
 Mr. and Mrs. Patrick O'Farrell
 Ms. Germaine T. Olmsted
 Mr. and Mrs. Joseph Opperman
 Mr. Jere G. Oren
 Mr. Robert Ortega
 Mr. and Mrs. John D. Orvis
 Ms. Lillian Owens
 Mr. and Mrs. Walter W. Pabst
 Terry Kim Paik, D.V.M.
 Barton and Lorraine Palmer
 Mr. Jose Palomo
 Janette and Robert G. Park
 Ms. Helen Pateman
 Mr. Arloe W. Paul
 Mr. and Mrs. Phil Paulson
 Mrs. Mary B. Peccolo
 Dr. Werner P. Pelz
 Mr. and Mrs. John M. Pendleton
 Jean E. Pepper
 Jack P. Pflock, D.V.M.
 Reno and Claudia Pierotti
 Mr. Carl E. Podlasky
 Edith and Leonard Polster
 Mrs. H. M. Poole, Jr.
 James R. Pratley
 Mrs. Donna K. Prendergast
 Dr. and Mrs. Sterling F. Price
 Mr. and Mrs. Nelson Puett
 Dr. and Mrs. Ernest E. Pund, Jr.
 Mrs. Gwynne K. Quayle
 Mary Ann Quinn

Sara A. Raddatz
 Mrs. Thelma D. Rankin
 Kitty Razook
 Mrs. Charles S. Reed
 Wendy Patterson Reinan
 Miss Jean L. Reinhardt
 Mr. and Mrs. Carl W. Reinhart
 Lela Rettig
 Mr. and Mrs. Trumbull Richard
 Mr. and Mrs. James K. Richardson
 Don L. and Georgia I. Richter
 Mr. Kevin J. Rigsbee
 Ms. Lori L. Rigsbee
 Dr. and Mrs. Donald J. Ritt
 Mr. Arthur Robbins
 Dr. Norman C. Roberts
 Dr. and Mrs. John P. Roffinella
 Mrs. Donald Rogers
 Mrs. Donald Roon
 Ruth and Herman Rosenberg
 Irwin and Edith A. Ross
 Dorothy Beidler Runyan
 Mr. and Mrs. Richard E. Ryan
 Mrs. Sy Salkowitz
 Mr. Herbert Sallar
 Dr. James H. Sands
 Mrs. Ernest Schieber
 Hans and Muriel Schiff
 Estelle Schiller
 Dr. Alfred F. Schmitt
 Ben V. Schneider
 Ms. Deborah E. Schoeny
 Benjamin D. Schulman
 Dr. and Mrs. Louis J. Schwartz
 Grover Schwarzauer
 Mr. and Mrs. Charles R. Scott
 Mrs. Harry H. Sealy
 Mrs. Wilda Jones Shafer
 Lesly Starr Shelton
 Bill N. Shepard, M.D.
 Dr. and Mrs. Harold H. Shively, Jr.
 William and Barbara Short
 Selma and Irving Singer
 Barbara Siniscalchi
 Mr. and Mrs. Lawrence K. Sinz
 Iris Beryl Skene
 Susan J. Skolnik
 Norma Smiley
 Mrs. Bradford Smith
 Mrs. Fern Campeau Smith
 Mr. Orison Smith
 Mr. Walton R. Smith
 Fred Snider
 Mrs. John T. Snite
 Mr. Charles L. Snow
 Anastasia D. Zolas
 Ms. Mary C. Soares
 Mrs. David R. Somerville
 Mary E. Stanbery
 Sam S. Stein
 D. Yvonne Stevens
 Joan M. Stevens
 Mr. Floyd M. Stevenson
 Ms. Joan Stevenson
 Mr. Fred Stoops
 Mrs. Gail Stoorza-Gill
 Ms. Elizabeth T. Storz
 Mr. and Mrs. Wilbur J. Strohm, Jr.
 Norma Sugg
 Mrs. Elizabeth V. Sullivan
 Allan and Anita Sutton
 Mrs. Elizabeth Lowell Sutton
 Mr. Frank M. Swirles
 Mr. Steven K. Taft
 Dr. S. Jerome and Judith D. Tamkin
 Nina S. Tate
 Mildred L. Taylor
 Mr. and Mrs. William R. Teran
 Mr. and Mrs. Frank R. Tharp
 Elsa Tingle
 Dr. and Mrs. John S. Trombold
 Mr. and Mrs. Reginald W. Twiggs
 Felice Valen
 Dr. William G. Van Dorn
 Major Frank Van Oosbree
 Mr. and Mrs. Robert Vanderhagen
 Theodore H. Vandling
 Mrs. Myron C. Vincent
 Ms. Dorothy O. Vogler
 George R. and Nancy A. Von Arx
 Ms. Lisette Wagaman
 Raymond and Helen M. Waite
 Mr. William Waite
 Mrs. Norton S. Walbridge
 Ms. Martha E. Walbridge
 Mrs. Margaret M. Wallace
 Robert G. Wallace
 Carmen W. Walsh
 Lillian R. Waltz
 Ms. Carolyn A. Wardell
 Mr. and Mrs. Thomas N. Warner
 Ruth L. Warshaw
 Margot M. Washburn
 Mr. and Mrs. Vernon Waters
 Miss Dorothea E. Watkins
 Dale E. Watson
 Marjorie B. Watters
 Webber Charitable Trust
 Dr. and Mrs. Charles E. Weber
 Mrs. Robert I. Weber
 Mrs. Walter J. Weil
 Mr. and Mrs. Louis Weinstock
 Mr. and Mrs. Milton F. Weiss
 Mr. and Mrs. John Weld
 Dorothy Welker
 Margaret L. Whittemore
 Hans and Dagny Wiener
 Mr. and Mrs. James R. Williams
 Ellen Willie
 James Gould Wilson
 Dr. and Mrs. Merlin E. Woesner
 The Rt. Rev. Robert M. Wolterstorff
 Mr. Ralph C. Woodard
 Mrs. Ewart H. Wyle
 William A. Yancey, M.D.
 Sandra Ann York
 Mrs. Carolyn W. Yorston
 Mr. and Mrs. John T. Zeien
 Dr. and Mrs. Gordon R. Zick
 Ms. Janet C. Zipter
 Ms. Adele J. Zirinsky

Opportunities for Giving

UNRESTRICTED FUNDS

The success of any research institution rests in its ability to identify promising new research programs in their infancy. Unfortunately, new programs generally do not qualify for federal grant support until they are fully developed. Similarly, young scientists who have not yet achieved prominence are also at a disadvantage in competing for grants. Their search for funds can delay their work and inhibit them from striking out in new directions. Consequently, unrestricted gifts constitute one of the most valuable resources for the institute as they allow the underwriting of important new projects that might not otherwise receive funding.

Giving Opportunities Gifts of all sizes are welcome. Contributions of \$1,000 or more entitle a donor to annual membership in The Presidents' Council.

IMMUNOLOGY DEPARTMENT BUILDING

In 1961, the Department of Experimental Pathology was the cornerstone of the newly established Scripps Clinic and Research Foundation. With the arrival of Dr. Frank Dixon Jr., this department began investigations in the fledgling field of immunology that would be the genesis of The Scripps Research Institute.

In just a few decades, Scripps Research has become one of the preeminent leaders in the field of immunology. The scope of study has grown dramatically—from basic research in the 1960s to groundbreaking investigations into diseases affecting millions of people worldwide. Diseases such as diabetes, cancer, septic shock, Ebola, arthritis, lupus, multiple sclerosis, tuberculosis, hepatitis C, prion disease, and blood disorders such as HIV are but a few that come under the scientific investigation of the one of the largest immunology research departments in the world. At the same time, the department has expanded its work into early clinical development, giving Scripps Research scientists an even greater opportunity to aid patients directly.

Scripps Research has a one-time opportunity to purchase the building that houses the Department of Immunology at a price below current market value. The building, which has been leased by Scripps Research since 1980, is the southern anchor to the main campus and houses the institute's oldest and largest department, the Department

of Immunology, comprising some 60 faculty, 100 postdocs, and 340 staff members. Since 1980, the Immunology Building has been home to world leaders in unlocking the secrets of the complex human immune system and in developing potential treatments for various global killers.

A naming gift will assure a donor a high level of recognition in the world of biomedical science.

Giving Opportunities Gifts of all sizes are welcome. Naming opportunities are available as follows:

Building	\$ 5,000,000
South Campus	\$ 3,000,000
Second Floor	\$ 1,000,000
Third Floor	\$ 1,000,000
Plaza Area	\$ 500,000
Atrium/Gallery	\$ 250,000
Large Conference Room ("East") . . .	\$ 200,000
Laboratory	\$ 75,000

INSTITUTE FOR CHILDHOOD AND NEGLECTED DISEASES

The Institute for Childhood and Neglected Diseases at The Scripps Research Institute applies the new molecular understanding of biology to address, reduce, and successfully treat illnesses in two major categories—childhood diseases, including childhood cancers, and neglected diseases that affect populations primarily in developing countries.

The time has come to apply the burgeoning knowledge of genes to specific childhood and early-onset diseases. For a number of years, researchers have attempted to use new therapies like gene therapy against many of these diseases—cystic fibrosis and muscular dystrophy, for example, and certain forms of cancer. Unfortunately, none of these efforts has led to consistent success. But in each case, there is reason to believe that the work done thus far has laid the groundwork for approaches that will succeed. And in other cases, such as autism, scientists are only now uncovering genetic clues that might lead to better treatments.

The majority of the world's population lives in developing countries, and has yet to reap the benefits of the genetic revolution. As biologists have begun to learn how human genes function, they also have begun to investigate the genes of parasites and other disease-causing organisms.

The Institute for Childhood and Neglected Disease will build on Scripps Research's previous successes, and will use the latest advances in biology to help vanquish parasitic diseases.

Giving Opportunities Gifts of all sizes are welcome. Some naming opportunities are still available. A commitment of \$150,000 will establish a senior research fellowship that supports the work of a senior scientist for two years at the institute. A commitment of \$75,000 will support a laboratory that will bear the name of the donor or loved one.

THE HELEN L. DORRIS INSTITUTE FOR THE STUDY OF NEUROLOGICAL AND PSYCHIATRIC DISORDERS OF CHILDREN AND ADOLESCENTS

The Helen L. Dorris Institute for the Study of Neurological and Psychiatric Disorders of Children and Adolescents was recently established with another generous gift from mental health advocate and San Diego State University professor emeritus Helen L. Dorris. This new initiative was launched to uncover the pathological basis of neurological and psychiatric disorders and to enable therapeutic approaches to be developed. Benjamin Cravatt, Ph.D., director of the new institute, will be leading the effort to recruit an interdisciplinary team of scientists to focus on understanding neuropathology in children and adolescents.

Giving Opportunities Gifts of all sizes are welcome. A commitment of \$150,000 will establish a senior research fellowship that supports the work of a senior scientist for two years at the institute. A commitment of \$75,000 will support a laboratory that will bear the name of the donor or loved one.

FACULTY CHAIRS

An endowment gift to establish a named faculty chair at Scripps Research is one of the most meaningful, and lasting, gifts available to the private donor. Such a gift perpetuates the donor's philanthropy by creating a permanently funded position, named by or for the donor, which may be occupied in succession by major figures in the world of biomedical science. The benefits far outlast the life of the donor, and will be enjoyed by successive generations of family members.

Giving Opportunities Gifts of all sizes are welcome. A commitment of \$1,500,000 will establish a senior faculty chair bearing the name of the donor or loved one. A

commitment of \$2,000,000 will establish a named faculty chair to be occupied by a dean, director, or department chair.

SENIOR RESEARCH FELLOWSHIPS

Sometimes the implications for discoveries in basic research are unknown. Often, though, discoveries by geneticists, neuroscientists, immunologists, and other basic scientists become the foundation for the most important breakthroughs in medical treatments and diagnostic technologies.

A gift to fund a senior research fellowship provides a scientist with the opportunity to pursue new directions that would have been otherwise left uncharted and could possibly lead to better therapeutics and medical advances. Funding a senior research fellowship would also be a great way of participating in one of the great scientific adventures of our time.

Giving Opportunities Gifts of all sizes are welcome. A commitment of \$75,000 or more will establish a senior research fellowship that supports the work of a faculty member or a senior scientist for one year. A gift in the amount of \$1,250,000 or more will endow a senior research fellowship ensuring the ongoing funding of a scientist's research work or initiative.

HAROLD L. DORRIS NEUROLOGICAL RESEARCH CENTER

The Harold L. Dorris Neurological Research Center was founded in 1999 as the result of a major naming gift and long-term commitment by the Harold L. Dorris Foundation under the direction of Helen L. Dorris.

The center is dedicated to conducting research and education into neurological disorders, including schizophrenia and Alzheimer's disease, as well as advancing knowledge of the process of aging of the brain. The center has attracted an international cadre of brain scientists, led by Tamas Bartfai, Ph.D. Dr. Bartfai is former head of central nervous system research at Hoffman-LaRoche in Basel, Switzerland, and former chairman of the Department of Neurochemistry and Neurotoxicity at Stockholm University.

The center seeks contributions to supplement the original gift of \$10,000,000 to recruit additional senior faculty, establish named fellowships, and create visiting professorship appointments.

Giving Opportunities Gifts of all sizes are welcome. A gift of \$1,500,000 will permanently name and support faculty chairs while a gift of \$1,250,000 will endow and name a senior research fellowship and a gift of \$50,0000 will establish a visiting professorship. Specific program funding in the range of \$50,000 to \$300,000 for new scholars is also a priority.

THE KELLOGG SCHOOL OF SCIENCE AND TECHNOLOGY

The Scripps Research Institute, with its emphasis on individualized instruction, adherence to the highest scientific standards, and reputation for research excellence, provides an unparalleled environment for advanced study and outstanding preparation for successful careers in science.

In 1989, Scripps Research established a Ph.D. program in Macromolecular and Cellular Structure and Chemistry. A second Ph.D. program in Chemistry was established three years later to focus on synthetic and bio-organic chemistry. In 2003, the institute restructured the program to provide its students with a wide range of courses and increased flexibility in course selection. The new program is referred to as the institute's Doctoral Programs in Chemical and Biological Sciences. The program provides an exceptional training opportunity in a unique learning environment for a select group of outstanding and intellectually diverse students.

In honor of their extraordinary contributions to science and education, Scripps Research named its graduate college "The Kellogg School of Science and Technology" for philanthropists Janet R. ("Jean") Kellogg and W. Keith Kellogg II.

Giving Opportunities Gifts of all sizes are welcome. A gift of \$24,500 will name and support a graduate stipend for one year. A commitment of \$425,000 will endow a graduate student stipend in perpetuity. A commitment of \$10,000,000 will endow the graduate program.

EDUCATIONAL OUTREACH PROGRAMS

As one of the country's leading basic biomedical research institutions, The Scripps Research Institute has made a commitment to the local science education community. The institute is using its intellectual and material resources to expose high school and undergraduate students and middle and high school science teachers to contemporary issues in biomedical research and intensive, hands-on

laboratory experiences, as well as to encourage students to pursue careers in the biological and chemical sciences. These multifaceted Educational Outreach Programs represent a cornerstone of the institute's commitment to training the next generation of scientists and perpetuating scientific knowledge.

At this time, the capacity of the Scripps Research summer internship program has grown to as many as 40 slots. With the demand and popularity of this program in local high schools, one of the limiting factors for filling these slots is availability of funding.

Giving Opportunities Gifts of all sizes are welcome. A contribution of \$2,500 supports the participation of one high school or undergraduate student in the summer internship program. A contribution of \$5,000 supports the participation of one middle or high school teacher in the summer internship program. A contribution of \$1,000,000 can name and endow the entire program.

ENDOWMENTS

The Scripps Research Institute seeks to enhance its endowment base from private contributions to provide ongoing income each year that can complement federal support. An endowment gift is one of the most meaningful, and lasting, gifts available to the private donor. The benefits far outlast the life of the donor, and will be enjoyed by successive generations of family members.

Giving Opportunities Gifts of all sizes are welcome. A gift of \$1,500,000 or more will permanently name and support a senior-level faculty position while a gift of \$2,000,000 will establish a named faculty chair to be occupied by a dean, director, or department chair.

Other endowment opportunities exist throughout the institute's departments and centers. Specific programs and needs within our Educational Outreach Programs can be endowed with gifts of \$100,000 and up.

EQUIPMENT ACQUISITION

Scripps Research enjoys one of the world's leading private computational capabilities with an array of computers, including a Cray supercomputer. Research is further supported by x-ray crystallography laboratories, high performance NMR spectrometry including state-of-the-art 900 and 750 MHz instruments, electron microscopy, optical spectroscopy, a centralized DNA

sequencing laboratory, and a fluorescence activated cell-sorting facility. Scientists are able to make new discoveries and advances in research with the help of modern technology.

Scripps Research scientists require state-of-the-art facilities and equipment to remain on the cutting edge of research and rapidly changing technology. New laboratory equipment and tools are constantly being developed to improve the efficiency and effectiveness of the scientists. Gifts of discretionary funding are needed to support the continuous modernization of laboratories and equipment at the institute.

Giving Opportunities Gifts of all sizes are welcome.

THE KRESGE LIBRARY

Gifts of discretionary funding are needed to fund the revamping of the Kresge Library. The library's furnishings, specifically its study carrels and chairs, have served students and faculty since the 1970s and are in need of replacement.

Giving Opportunities Gifts of all sizes are welcome.

Gifts to The Scripps Research Institute

Gifts to The Scripps Research Institute provide the assurance that the institution will continue its mission of striving for excellence in biomedical research. Unrestricted gifts are particularly useful as they can be applied to programs and areas of urgent need. Gifts may also be designated for specific purposes, such as research, educational programs, or equipment. They may also be made in tribute to or in memory of a relative or friend.

GIFTS OF CASH

An outright gift of cash is usually the simplest method of giving. It is not subject to gift or estate taxes, and you can deduct the gift amount from your federal income tax return up to 50 percent of your adjusted gross income. Should the gift total exceed your gift ceiling for that year, you can carry over the remaining deduction to succeeding tax years. This means that with careful planning, nearly every outright gift to Scripps Research can be fully deducted.

GIFTS OF SECURITIES

Giving appreciated stocks or bonds is a superb way to show support for the institution. You can deduct the full fair market value of long-term appreciated securities, and avoid any tax on the capital gain. A gift of securities is deductible up to 30 percent of your adjusted gross income, with the five-year carry-over option. Under certain circumstances, however, you can choose to qualify for a 50 percent annual deduction by reducing the value of your gift by 100 percent of the appreciation in the contributed property—that is, to the cost basis.

GIFT OF REAL ESTATE

Almost any type of real property—a personal residence, a farm, a vacation home, a commercial building, or an undeveloped parcel of land—can constitute a gift. A gift of real estate can be made either outright or through other methods.

If the property has appreciated in value and is given outright, you will avoid any tax on the capital gain, reduce your taxable estate by the value of the gift, and receive a charitable contribution deduction for 100 percent of the fair market value of the property. Your actual income tax savings will depend on your tax bracket. You may deduct the value of the gift up to 30 percent of your adjusted gross income. Under certain circumstances, however, you can choose to qualify for a 50 percent annual deduction by reducing the value of your gift by 100 percent of the appreciation—that is, to the cost basis.

GIFTS OF RESIDENCE

The tax laws enable you to donate your personal residence or ranch and still live there for the remainder of your life. Furthermore, you can stipulate that your spouse may live there for his/her lifetime, or you may continue to live on the property for a set number of years. Either way, you will receive an immediate income tax deduction for the contribution.

The property does not have to be your primary residence—it can be a vacation or second home. Further, you do not have to reside on the property. You can also give stock in a cooperative apartment if the apartment is used as a primary residence.

The charitable deduction is less than the full value of the property and equals the value of the remainder interest given to Scripps Research. There are also charitable deductions available for estate or gift tax purposes if the life interest is given to one or two individuals and the remainder interest given to charity.

GIFTS OF UNDIVIDED INTEREST IN PROPERTY

You are allowed a charitable deduction for the value of an undivided portion of your entire interest in a property. This consists of a fraction or a percentage of each substantial right or interest in the property. The fraction must extend over the entire term of your interest.

GIFT BY BARGAIN SALE

This entails transferring ownership of an appreciated asset (real estate, securities and the like) to Scripps Research. In return, the institute would pay an agreed-upon amount that is less than the full fair market value—usually your original cost. Essentially, you are selling your asset to Scripps Research for less than its fair market value, so the transaction is part gift and part sale.

You might want to consider this method if the current value of the property exceeds the amount you wish to give or if it is not practical or economical to divide the property. You are entitled to a charitable deduction based on the difference between the sale price and the full fair market value. You incur tax only on the part of the appreciation attributable to the sale.

GIFT OF LIFE INSURANCE

You may reach a point where life insurance no longer has the financial significance for your family that it once did. In that case, you may wish to make a gift of the policy to Scripps Research. There are two ways to do this.

First, you may make Scripps Research the owner of the policy. This allows you an immediate income tax deduction. If the policy is fully paid, your deduction is equal to the replacement value of the policy unless that value exceeds the tax or cost basis. If premiums remain to be paid, the deduction is approximately equal to the cash surrender value. If you continue to pay the premiums on such policies, you will be entitled to a charitable contribution deduction. Or you may wish to contribute the amount of the premiums to Scripps Research; Scripps Research, in turn, could pay the premiums. As long as

the institute is not under any obligation to pay the premiums, your contribution would be fully deductible.

Secondly, you also may name Scripps Research as the beneficiary of your policy. Since the designation is revocable, it cannot be counted for any immediate tax savings. At your death, however, your executor may take federal estate tax charitable deduction for the entire amount.

Life insurance interacts well with other gift mechanisms. For instance, you can use all or part of your trust or annuity income to establish an irrevocable life insurance trust. The trust could purchase insurance on your life—perhaps an amount equal to the charitable gift—and you could name a spouse or child as the beneficiary. This way you can make a charitable gift and replace the assets with life insurance for the benefit of a loved one.

Alternatively, you could take all or a portion of the income for a set term of years and purchase a universal life insurance policy naming a family member the beneficiary. This is another excellent way to replace the wealth transferred to charity.

LIFE INCOME GIFT

Another way to make a gift to Scripps Research is to transfer property (e.g., cash, securities, real estate) to the management of a trustee (for example, Scripps Research as an independent agent), and establish a life income arrangement. After the lifetimes of the beneficiaries, Scripps Research receives the assets in the trust. Life income trusts provide many benefits to you as a donor: an income tax charitable deduction, a reduction in estate taxed, avoidance of capital gains taxes, freedom from investment worries, and, of course, income for life.

There are several types of life income arrangements for different circumstances: unitrust, annuity trust, pooled income fund, gift annuity. Information about each gift arrangement is readily obtained from the Development Office at Scripps Research.

GIFT IN TRUST-WEALTH TRANSFER

A trust may be funded with property (e.g., cash, securities, real estate). The terms of the trust will provide for specific payments to Scripps Research for a number of years, after which time the property is passed to a relative or friend of the donor. The donor receives sizeable estate

and gift tax advantages, and Scripps Research immediately receives funds for its programs. This arrangement is called a lead trust.

CORPORATE MATCHING GIFT

Many companies encourage philanthropic giving among their employees by offering to match an employee's gift with a corporate contribution. Donors interested in this opportunity should obtain the necessary matching gift form from their employer (usually the personnel office).

GIFT BY BEQUEST

One of the easiest and most common ways to make a gift to Scripps Research is through a bequest in your will. The tax laws encourage bequests; consequently, a bequest is an excellent way to support the institute's programs. Bequests work particularly well for those who are unable to make an immediate outright gift, but would like to aid Scripps Research in the future. There are several types of bequests:

- Specific bequests take the form of an outright gift of money, securities or other property.
- With a residuary bequest, Scripps Research can receive the residue of your estate after all other bequests have been made.
- A contingent bequest takes effect only in the event that all other bequests, for whatever reason, fail.
- A bequest may also take the form of a testamentary trust; to receive the tax benefits, however, the trust must either be solely for charity or be a qualified charitable remainder or lead trust.
- When you make a bequest to Scripps Research, your taxable estate is reduced by a 100 percent deduction for the amount of a cash bequest, or the fair market value of appreciated assets.

This deduction results in tax savings whenever the taxable estate—after other deductions—exceeds the amount offset by individual estate tax credits. Because the estate tax rate schedule is progressive, the larger the taxable estate, the greater the potential tax savings per dollar given.

For more information regarding any of these ways of giving, please contact:

The Scripps Research Institute
Development Office
10550 N. Torrey Pines Road
Mail Drop TPC-2
La Jolla, CA 92037
(858) 784-9367
(800) 788-4931
(858) 784-2608 FAX

Benefits of Giving

SCRIPPS PRESIDENTS' COUNCIL

Founded in 1984, the Scripps Presidents' Council was created to serve two basic objectives: first, to provide a perpetual source of private resources for new and ongoing medical and research programs; and second, to provide a medium for sharing the excitement of our programs with those who invest in these undertakings.

Annual membership in the Scripps Presidents' Council is extended to individuals who contribute \$1,000 or more in a given year. Gifts may be earmarked for either specific research purposes, or left undesignated for use where the need is greatest.

Special privileges unique to the Scripps Presidents' Council are extended to all members:

- On request, personal assistance from a member of the Scripps Research Development Office in obtaining information or medical services at a Scripps Health hospital
- A yearly report outlining the impact of donors' gifts
- An invitation to The Scripps Presidents' Council Special Event, an exclusive annual gathering
- Special invitations to scientific briefings, receptions, and lectures, where fellow members meet to learn more about the vital work their contributions support
- The Scripps Foundation Annual Report, which includes a listing of all Scripps Presidents' Council members
- Selected press releases on topics of general interest to help keep members informed about news-worthy activities at Scripps Research
- The Scripps Foundation quarterly newsletter update, which discusses developments at Scripps Research, the latest clinical procedures available to Scripps Hospital patients, and overall advances made at Scripps Research and Scripps Health
- The Scripps Research publication *Endeavor*, which covers scientific progress, awards, and publications, as well as *Endeavor Year In Review*, which recognizes supporters of Scripps Research.

SCRIPPS LEGACY

The Scripps Research Development Office also recognizes lifetime cumulative giving at the following levels:

Associate	\$25,000 - \$99,999
Advocate	\$100,000 - \$249,999
Ambassador	\$250,000 - \$499,999
Sponsor	\$500,000 - \$999,999
Guarantor	\$1,000,000 - \$2,499,999
Patron	\$2,500,000 - \$4,999,999
Benefactor	\$5,000,000 - \$9,999,999
Founder	\$10,000,000 - \$49,999,999
Laureate	\$50,000,000 or more

Additional benefits include:

- Name listed on the Scripps Foundation's Annual Report on Philanthropic Support.

Those giving at the Advocate level or above also receive:

- Name recognition on the Honor Roll Boards in the lobbies of all Scripps Health Hospitals.

And, of course, the satisfaction members receive from knowing they have personally contributed to the advancement of medical knowledge through their gifts.

If you are interested in joining the Scripps Presidents' Council or the Legacy Program, please contact:

The Scripps Research Institute
Development Office
10550 N. Torrey Pines Road
Mail Drop TPC-2
La Jolla, CA 92037
(858) 784-9367
(800) 788-4931
(858) 784-2608 (FAX)



THE
SCRIPPS
RESEARCH
INSTITUTE

*A publication of
The Scripps Research Institute*

*Office of Communications—TPC20
10550 North Torrey Pines Road
La Jolla, California 92037*

*Publisher:
Keith McKeown*

*Editor:
Mika Ono Benedyk*

*Writers:
Jason Socrates Bardi
Eric Sauter*

*Design:
Craig Fuller
Paulina Monterrubio
Greenhaus*

*Production:
Janet Juliano
Jennifer O'Sullivan
Kevin Fung*

*Portrait Photography:
Jonathan Woodward*

*Printing:
Bordeaux Printers*