April 2014

SRI International

Alumni Association

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MESSAGE FROM CHAIRMAN PETE VALENTI

Pete Valenti

Dear SRI Alumni Association Members and Friends,

Except for a short note in our last issue, this is the first time that I have had the opportunity and privilege to address you as the Chairman of the Steering Committee. I want to start off by thanking our previous Chairmen for providing strong leadership and to compliment the members of the Steering Committee for consistently doing an excellent job. Things don't just happen. These people work hard to make sure things happen. That's why we are able to deliver a newsletter and programs that are interesting and, I hope, pleasing to the Alumni Association members. This effort on the part of the Committee members makes chairing such a group rather easy. I am very grateful to be working with such a strong and resourceful group of people.

As you read this newsletter issue, I would like to point out some particularly noteworthy items. First, the institute is undergoing several very significant upper management changes. In particular, in December 2013, Curt Carlson announced his retirement as President and CEO of SRI to become SRI's Vice Chairman for Innovation. You'll also learn about changes in the CFO position and in membership of the SRI Board of Directors.

The second thing I found noteworthy concerns the research that is going on. As you read through this issue, note the wide variety of very different technologies that are being studied at SRI. That's the way it has always been and that way it continues to be. Seldom does one organization maintain the expertise to undertake such a wide variety of research challenges. Also of importance is the fact that often SRI is at the leading edge of these technologies and the research undertaken. We can all be proud that we have been a part of this very special work environment. Yes, the beat goes on and is even getting louder.

Finally, I invite alumni who are in the Bay Area or will be visiting to join us on our Spring Fling to Chabot Space & Science Center on Wednesday, May 14. It should be an interesting trip and fun to see each other.

Stay connected,

The Spring Fling is May 14, 2014, at the Chabot Space & Science Center. See announcement on page 11. The flyer for this event is enclosed with this mailing.

Changes at the Top

Curt Carlson to Retire as President and CEO of SRI

Photo by Scott Bramwell, used courtesy of SRI.

After 16 years as President and CEO of SRI, Curt Carlson is retiring from these positions. Once his successor is found, Curt will become SRI's Vice Chairman for Innovation. He will devote more time to business development and innovation initiatives for SRI and help advance innovation best practices in the government agencies and foundations that fund R&D. Curt is also writing a second book to spread the word about SRI's innovations. In Curt's words, "Potential partners need to understand why they *must* come to SRI for high-value R&D and solutions."

During Curt's tenure as CEO, SRI has become widely recognized as one of the world's premier R&D and innovation centers. The research divisions have created an impressive portfolio of R&D programs, and the pipeline of ventures and licenses is plentiful. According to Curt, the late venture capitalist David Ladd of Mayfield Fund said, "SRI is now the world's best organization at turning its research into commercial value."

Luther Lau Is Acting Chief Financial Officer

Luther Lau, SRI's Executive Director of Finance, has been named Acting CFO of SRI to replace Tom Furst. Last year, Tom announced his desire to retire after almost 18 years of service to SRI. He will continue to focus on several important projects, one being the Menlo Park campus modernization project (http://www.sri.com/campus). Luther will be Acting CFO at least until a new CEO is brought on board.

Mariann Byerwalter Now Chairman of the Board of Directors and Wendell Wierenga New Board Member

Mariann Byerwalter, photo courtesy of SRI.

Mariann Byerwalter was named Chairman of SRI's Board of Directors, effective January 1, 2014. She has been a member of the board since 1998. Admiral Vern Clark, who had been chairman since 2010, remains on the board.

Ms. Byerwalter's broad business, finance, and administrative background spans government cost and rate studies, business development, and information technology systems and services. She was most recently Chairman of the Board of Directors of Stanford Hospital and Clinics, and she is a former Trustee of Stanford University. Before that, Ms. Byerwalter served as CFO of Stanford University. She also is on the boards of Burlington Capital Group, Lucile Packard Children's Hospital, Pacific Life Insurance, Redwood Trust, Inc., Schwab Funds, and WageWorks.

Ms. Byerwalter has a B.A. degree from Stanford University and an MBA from Harvard Business School. She received the 1998 Financial Woman of the Year award from the Financial Women's Association of San Francisco, is a Distinguished Honoree for the Harvard Business School Association of Northern California's "50 Years of Women at HBS," and has been selected as an Outstanding Director for 2014 by the *San Francisco Business Times* and *Silicon Valley Business Journal*.

Wendell Wierenga, photo courtesy of SRI.

Newly elected to SRI's board is Wendell Wierenga, Ph.D., executive vice president of research and development at Santarus, Inc. He has extensive experience in research, drug discovery, and drug development including clinical research, regulatory affairs, manufacturing, safety, and medical affairs.

Dr. Wierenga is on the scientific advisory boards of Concert Pharmaceuticals, Ferring Pharmaceuticals, and aTyr Pharma, Inc. He also serves on the boards of directors of Cytokinetics, Inc., Onyx Pharmaceuticals, Inc., and XenoPort, Inc.

Previously, Dr. Wierenga was executive vice president of R&D at Ambit and at Neurocrine Biosciences. Prior to Neurocrine, he was CEO of Syrrx, Inc., and senior vice president of worldwide pharmaceutical sciences, technologies, and development at Parke-Davis/Warner Lambert (now Pfizer). Dr. Wierenga also spent 16 years at Upjohn Pharmaceuticals, where his last position was executive director of discovery research. He led and participated in more than 70 Investigational New Drug disclosures and more than 15 New Drug Applications and marketed 16 products, including Lipitor®, Neurontin®, Lyrica®, and Uceris®.

Dr. Wierenga earned his Ph.D. in chemistry from Stanford University.

SRI Night Eagle Program Team Awarded 2014 SRI Presidential Achievement Award

At an All-Hands Meeting on February 13, Curt awarded the Night Eagle Program Team the Presidential Achievement Award (http://www.sri.com/about/awards-honors/sri-presidential-achievement-award). This team has been providing support on the Night Eagle System, an airborne system that can simultaneously collect measurement, signature, and imagery data during intelligence, surveillance, and reconnaissance missions. The team developed the Night Eagle change detection, imagery management, imagery recording, hot spot monitoring, moving target tracking, and data link control systems. Providing warfighters with the most advanced sensor technology possible, Night Eagle is succeeding in the field and saving lives.

The team of more than 30 researchers, based in Princeton, New Jersey, is part of the Center for Vision Technologies in the Information and Computing Sciences Division.

SRI Night Eagle Program Team, photo courtesy of SRI.

Arecibo Telescope Repaired after Earthquake Damage

The William E. Gordon radio telescope in Arecibo, Puerto Rico, was damaged on January 13 in a 6.4 magnitude earthquake. A main suspension cable section sustained serious damage, with a breach of several cable strands. That cable supports the 900-ton focal platform of the telescope. (There are 18 main suspension cables in all.) Ammann & Whitney Consulting Engineers assessed the damage and designed the repair, and the structural repair work was performed by Arecibo Observatory staff.

The telescope returned to full operations on March 13. In the meantime, the telescope motion had been very limited, although it did continue "its science mission, including participation in a 10-day global ionospheric study in late January and continuing a productive search for pulsars in the sky above Arecibo," according to Robert Kerr, Ph.D., observatory director and principal scientist at SRI.

Last year, the Arecibo Observatory celebrated its 50th anniversary (see April and December 2013 Alumni Newsletters). The observatory is operated by SRI, teaming with Universidad Metropolitana and the Universities Space Research Association, in a cooperative agreement with the National Science Foundation.

SRI-Cofounded Company Awarded ARPA-E Project to Develop Natural Gas Fuel Tank Technology

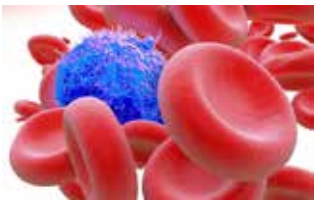
The Advanced Research Projects Agency–Energy (ARPA-E) has awarded BlackPak™, Inc., a $4.6 million cooperative agreement to develop its natural gas fuel tank technology under the ARPA-E Methane Opportunities for Vehicular Energy (MOVE) program. BlackPak was cofounded by SRI, InnerProduct Partners, and ATMI, Inc. It is leveraging technology developed and spun out from SRI as part of a prior award under the MOVE program.

SRI's proof-of-concept for a conformable natural gas storage tank.

Specifically, BlackPak and its founding partners are developing adsorbed natural gas storage systems for automotive and commercial applications with a target system-level energy density greater than 6 megajoules per liter at 500-psi pressure. Drawing on advances in engineered nano-porous materials, the designs with this technology permit natural gas storage in containers of a variety of shapes, sizes, and configurations. This is an advantage over conventional high-pressure compressed natural gas cylinders, because vehicle designers and equipment manufacturers will be able to integrate the systems into the available spaces in light-duty vehicles without sacrificing trunk space.

In addition, the BlackPak system under development targets a significantly lower overall cost, with the prospect of a dramatic improvement in the return on investment potential for light-duty natural gas vehicles and similar applications. Low-pressure storage also has the potential to greatly reduce the capital expenditure and operating cost of such systems, as well as simplify the requirements for tank-filling appliances, further improving the comparative economics of adsorbed natural gas systems relative to compressed natural gas, gasoline, and diesel.

FASTcell Screening Service for Rare Circulating Cancer Cells



SRI is offering its FASTcell™ technology as a testing service for detecting and characterizing rare circulating tumor cells (CTCs) from whole blood samples. CTCs are critically important blood markers that may be involved in metastasis. FASTcell can rapidly identify and capture a single tumor cell from hundreds of millions of normal blood cells, enabling detailed molecular and genetic analysis.

An innovative Fiber-optic Array Scanning Technology (FAST™) cytometer is at the heart of the assay platform. Acquired from PARC, a Xerox company, and advanced by SRI, the cytometer permits high-definition, detailed imaging of individual CTCs. The FASTcell technology can analyze all blood cell types at a scanning speed of 25 million cells per minute. Once the tumor cells have been identified and isolated, further investigation can examine the characteristics of single cells through immunohistochemistry and molecular genomics analyses.

The sensitivity and specificity of the FASTcell technology offer cancer researchers and clinicians a vital analytical testing service. FASTcell accurately characterizes CTCs from a number of cancers (including breast, lung, prostate, colorectal, and leukemia) by using a wide array of cancer-specific biomarkers. It has the potential to detect more CTC types than other currently available technologies. Investigators can request either validated testing or custom assay development for a wide range of tumor-specific biomarkers.

The FASTcell technology has been successfully used in a number of collaborative efforts with, for example, City of Hope Cancer Center to evaluate breast cancer heterogeneity and Stanford University School of Medicine to examine biomarkers on CTCs relative to primary tumor biopsies for the evaluation of platinum-based therapy in non-small cell lung cancer.

The ultimate vision is to create a product that can detect cancer cells from a simple blood test that can be used for early detection and characterization of biomarkers on CTCs.

California Linked Learning District Initiative Demonstrated to Be Effective

Results of SRI's evaluation of the California Linked Learning District Initiative have demonstrated that Linked Learning students are making greater progress toward high school graduation and college eligibility than their peers in traditional high school programs.

Linked Learning integrates rigorous academics with career-based learning and real-world workplace experiences through career-oriented pathways in such fields as engineering, health care, performing arts, and law. The thinking is that combining coursework and real-life experience will show students the relevance of what they are learning and give them the skills and knowledge needed in the workplace. The Irvine Foundation and ConnectEd launched the District Initiative in 2009. It includes high schools in nine districts across California that collectively serve more than 315,000 students.

The findings indicated that Linked Learning students were earning more credits in the first two years of high school and were more likely to be on track to complete the a-g requirements needed for entry into a University of California or California State University school than similar peers. In addition, Linked Learning students were more likely to report that their high school experience helped them improve a range of career and life skills.

In a student survey, compared with similar peers, 11th-grade Linked Learning students

- Were 23 percentage points more likely to report that high school prepares them for working with people in professional settings and for working in groups to achieve a shared goal.
- Were 20 percentage points more likely to report improved presentation skills.
- Were 14 percentage points more likely to report improved ability to conduct online searches to answer a question.
- Were 12 percentage points more likely to report growth in their belief that they could reach their goals with enough effort.

Licensing Agreement to Commercialize SRI's Underwater Mass Spectrometer

SRI and Spyglass Technologies, Inc., have entered into an exclusive licensing agreement to commercialize SRI's in situ membrane introduction mass spectrometer (MIMS). Spyglass, a technology company based in St. Petersburg, Florida, will apply SRI's underwater MIMS technology to a broad range of commercial, research, and government applications. It will also bundle the MIMS device with other underwater sensors to present detailed biochemical information through its Web portal software platform. SRI and Spyglass will continue to collaborate on other market-based applications of the technology.

The MIMS device is used for advanced underwater chemical surveys by researchers and companies involved in oil and gas exploration and production, monitoring and protecting ocean resources, and water treatment and management.

The technology was developed at the University of South Florida's Center for Ocean Technology and subsequently advanced by researchers at SRI's St. Petersburg Marine Technology Program. During the past five years, SRI has demonstrated the capabilities and cost-effectiveness of the MIMS device around the world. It has been used to conduct research and generate important data unattainable without this type of on-site instrumentation. These studies have included characterization of natural hydrocarbon seeps, monitoring impacts of discharges from man-made assets, and studies of marine ecosystems.

The collaboration with Spyglass is expected to extend the impact of the MIMS device in water-intensive industries.

MIMS device being deployed over the sea wall in Bayboro Harbor at the SRI St. Petersburg facility.

INTERNATIONAL JOURNAL

Taxi Tales

With the U.S. National Security Agency in the global news of late for eavesdropping, Peter Weisshuhn shares with us the perspective of an East German on "friendly" spying.

Jena

By Peter Weisshuhn

Jena was the opto-electronics capital of the former German Democratic Republic (GDR), East Germany. Like many other states with the D-word in their name, it had been anything but democratic. In fact, it had been the star practitioner of Marxist-Leninist-Stalinist doctrine. When its oppressive regime collapsed under the doctrine's inherent flaws, the rest of Communist Europe followed. The GDR (DDR in German) was luckier than the others in becoming reunited with wealthy West Germany. But, given the systemic overstaffing under the old regime and the simultaneous implosion of the GDR's principal eastern markets, massive job losses occurred even among highly qualified people.

My work took me to Jena for a few months. There, I met Karl, formerly a manager in a research lab, now a taxi driver. He drove me to meetings in the region. I would buy him lunch on our journeys, and he would occasionally invite me home for dinner. We were becoming friends.

One evening, over a drink, I asked Karl about the practice of spying on one's workmates. This was done on orders from the East German secret police, the Stasi. Refusal to cooperate with them was career limiting or worse. Yes, Karl, too, had been writing regular reports on a colleague. Someone else would report on him; none in research would be exempt. It was the system. The problem was that you seldom knew who was reporting on you. Karl found out by accident: It was a good friend and colleague. Their families went camping together. Had the discovery killed their friendship? Not at all. Both men were relieved that the truth was out: "*If you must be spied on, it is better that your friend does it—as long as you remain friends.*"

Editors' note: Reprinted here is an excerpt from a booklet prepared in August 2003 to celebrate the 50th anniversary of Poulter Laboratory, "the oldest continuously operating laboratory at SRI," according to the foreword by James D. Colton, then director of the laboratory. This excerpt is a short history of the lab. We are grateful to Linda Jansen, Administrative Coordinator, SRI Physical Sciences, who made it available to us and granted us permission to use this piece.

Poulter Laboratory's Excellent Adventure

By James D. Colton

In 1953 Dr. Thomas Poulter formed the Extreme Pressure and Explosives Laboratory with an initial staff of about six people. This was the beginning of 50 years of research conducted around the theme of explosives, their effects, and related phenomenology. The group grew rapidly, and in March of 1954, in formal recognition of Poulter's contributions, the name of the group was changed to Poulter Laboratories. Later, the name was changed from Poulter Laboratories to Poulter Laboratory to correspond to names of other SRI units. You can easily spot an old-timer if he uses the name Poulter Laboratories!

From 1954 to 1959, Poulter Lab projects were sponsored mainly by the Army, Navy, and Welex, a commercial client supporting work on shaped charges for oil well perforating. The lab started in the "tar paper shacks" of the temporary Dibble Hospital built by the Army to take casualties from the invasion of Japan, which never occurred. Among the offices and shops at the Menlo Park site, there was an outdoor firing pit for small explosive tests, but most experiments with explosives were conducted at the Calaveras Test Site in the hills behind Milpitas. Poulter Lab moved to Building A in 1958, and a vault in the basement replaced the outdoor firing pit.

At the Calaveras Test Site in 1954, the only facility was a firing pit. There was practically no instrumentation, and charges were fired with a hand twister; the only data were terminal observations. Over the next five years, the lab acquired considerable high-speed optical and electronic instrumentation: a streak camera, a framing camera, a flash X ray, oscilloscopes, and tape recorders. Five bunkers were built to house the new equipment. The new test areas and equipment provided data to support theoretical investigations and greatly quickened scientific progress.

The optical shock effects instrumentation served the lab well into the sixties, when manganin and ytterbium gauges were developed that could be embedded in materials. The focus then shifted away from surface measurements, and cameras for shock effects fell into disuse. Because of the increasing interest in shock effects at low pressures, the lab acquired the 2-1/2-inch gas gun in 1964, and in 1969 built the 4-inch gas gun.

The data from all this instrumentation required a large data reduction effort. Initially, data reduction was accomplished with slide rules and calculating machines. In the late fifties came punched-tape computers and then electronic computers in a continuing pattern of change that is still with us today. With the computers came wave propagation codes in the early sixties and structural response codes in the early seventies.

Because surrounding development encroached on the leased Calaveras Test Site, SRI purchased the Corral Hollow Experiment Site (CHES) in 1970. In the early days at CHES conditions were primitive compared with Calaveras. Power came from diesel generators that required constant maintenance. Outdoor toilets and poor roads were the norm. In spite of these drawbacks, excellent experimental work was performed and site development proceeded. PG&E power came in 1975, and the roads were improved steadily. Poulter Lab has continually added new test facilities at CHES.

Aerial view of SRI's Corral Hollow Experiment Site (CHES).

From the '60s into the '90s much of the work in Poulter Lab was related to nuclear weapons effects, sponsored primarily by the Defense Nuclear Agency. Initially, components of missile systems and reentry vehicle shells were fielded in underground nuclear tests to determine their response to X-ray loading. As manganin gauges were developed, these too were fielded to characterize the nuclear groundshock. Some gauges close to the nuclear device measured pressures of 1 Mbar.

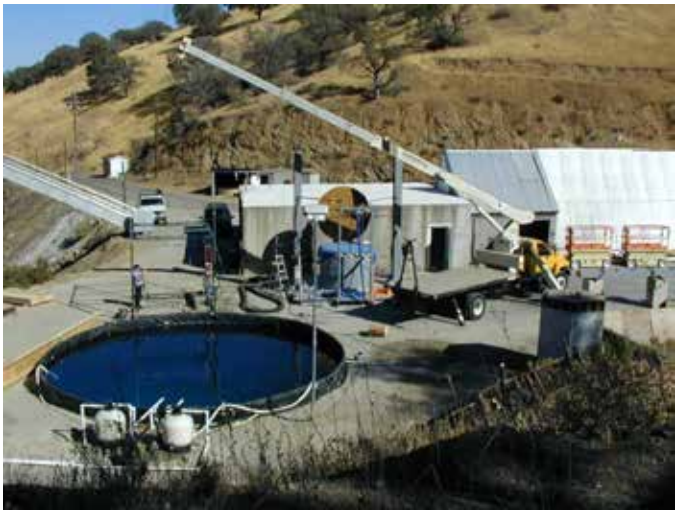
Underground tests were expensive and infrequent. To study nuclear effects more efficiently, Poulter Lab pioneered the development of aboveground explosive techniques to study nuclear airblast and ground shock effects. Sheet explosive was characterized and used to simulate X-ray loading on reentry vehicle shells. The High Explosive Simulation Technique (HEST) was vastly improved by modeling the expansion of the detonation products and the ground shock loads produced in the process. In the 1980s Poulter Lab designed every significant HEST simulator for large DNA [Defense Nuclear Agency] field tests. Underwater nuclear shocks were also simulated with explosive charges. In 1975 the lab built its first underwater test pool (30 feet square and 20 feet deep) at Area 2 for conducting underwater shock tests on submarine models. Far-field, low-pressure nuclear airblast was simulated in shock tubes. The culmination of this work was the construction and operation of an 8-foot-diameter shock tube at Area 3 driven by 100 lb of explosive.

CHES Area 3 with 2.4-m-diameter (8-ft) shock tube.

Poulter Lab also has developed and used computational modeling to investigate nuclear-related mechanical hardness and vulnerability of advanced systems. X-ray deposition and its effects on special materials has been investigated for the past 25 years and is a continuing program. In the ’70s Poulter Lab began to develop the Nucleation and Growth (NAG) and Fragmentation (FRAG) series of models that described the fundamental physics of failure of materials under shock loading. These models proved useful in the solution of many problems in the areas of dynamic deformation and fracture, armor/anti-armor, and also stress corrosion fracture. More recently, computational models have been used to investigate debris mitigation for the National Ignition Facility at LLNL [Lawrence Livermore National Laboratory].

Scale model structures were initially used to investigate nuclear effects and are now pervasive in many of the programs in the lab. Poulter Lab is a world leader is designing, building, testing, interpreting the results, and knowing the limitations of scale-model structures of all types. Initial scale-model structures were of reentry vehicle shells. Reinforced concrete scale-model tunnels and silos were tested under nuclear- and laser-simulated loads. Scale models were later used to investigate crashworthiness of automobiles and trains and also to investigate the safety of nuclear reactors.

When the Cold War ended, the support for nuclear-related work dropped off dramatically. We scrambled hard to get support in other fields, particularly in conventional weapons effects. DTRA [Defense Threat Reduction Agency] (formerly DNA) continues to be a major client, but now the work is on conventional weapons effects in tunnels. Various missile agencies have sponsored Poulter Lab to determine critical loads to defeat target missiles. The Army and Navy have sponsored the lab in investigating problems related to defeating mines and in clearing obstacles from the beach and surf zone. Two small test pools were built at CHES to support these programs. The original pool was replaced with a new large pool that is 30 feet in diameter and 20 feet deep. The new pool is used for testing submarine models, for investigating underwater mine lethality, and for underwater test launches of Navy missile systems. The lab also created an arena test bed for studying fragmentation of bombs at Area 1.



CHES Area 2 with underwater test facility.

In the last decade the lab has also put more emphasis on safety studies. To investigate the accidental impact of aircraft against protective structures, the Kajima launcher was built at Area 3.

It can accelerate a 100-lb aircraft model up to 300 mph. A long-term project was established with the Japanese government to investigate the safety aspects of using hydrogen as a fuel. Hydrogen is deflagrated and the speed of the reaction front and the pressures are measured. In 2003 a new test area was established above Area 1. This test area is a large flat space for studying hydrogen explosions inside and outside of buildings, parking lots, and hydrogen fueling stations.

CHES Area 3 with gas-propelled sled facility.

Poulter Lab also has been investigating ways of defeating terrorist bombs and mitigating damage from terrorist bombs. The lab has developed tools to disperse terrorist bombs before they are detonated and designed and built bombproof containers that are currently being sold commercially. A method for retrofitting existing windows to prevent glass fragments from traveling into the building has been developed and successfully tested in the 8-foot shock tube and in government field tests. In 2003 the Safe Skies building was created at a new location at CHES for evaluating explosive detection equipment. Terrorist bombs and other materials are exposed to the detection equipment to see how effective it is at identifying terrorist devices.

Poulter Lab will face new challenges in the future as problems and funding sources change. We have a history of facing and responding to challenges that will no doubt continue in the future. We are confident enough in our future that we have scheduled the 100th anniversary of Poulter Lab in Burgess Park on August 9, 2053. Save the date!

Editors' note: Inspired by Peter Weisshuhn's *Taxi Tale* from Johannesburg in the December 2013 newsletter, Donn B. Parker sent us this excerpt from his autobiography. Donn was a senior information systems management consultant and researcher on information and computer security and crime at SRI. This article recounts his experiences traveling to South Africa on SRI business in 1995.

South African Travels

By Donn B. Parker

One of the farthest distances I traveled while working for SRI was to South Africa. In 1995 I brought my wife, Lorna, along with me and gave lectures on computer crime for the Association for Computing Machinery (ACM) Chapter at the University of Johannesburg, for the South African Police, and at a computer conference in Cape Town. This was my second trip, after a brief one in 1984. I didn't realize that you could take such long trips north and south on this planet as you can east and west. It took about 22 hours with a brief refueling stop in Mauritania, West Africa.

It was not possible for South African citizens to pay foreigners for services, so we flew on tickets my clients bought and were given complimentary tours and several Krugerrands instead.

The police took very good care of us, and a colonel took us on an all-day tour of Soweto, a few miles outside of Johannesburg, and to a working gold mine. Soweto in 1995 was a huge residential city with massive slums where most of the black people lived who worked in the white man's city. Our guide showed us the good and bad, including a millionaires' row and the only hospital, which had been gutted in the last uprising.

The gold mine was the most interesting. We started with the refining end of the process where we watched pure gold being poured into molds. I was told that I could have one of the bars if I could lift it. Needless to say … . The gold ore was a plate about a centimeter thick and about a mile deep extending for unknown miles under the city. We had to put overalls on over our street clothing and wear helmets with lamps mounted on them. We traveled on a very fast elevator down to a huge cavern about a mile down into the earth, where it was so hot and humid that mine management had a small boy follow us around keeping us supplied with bottled water. We felt like we had never been so close to Hell. We walked about a half-mile to the end of the cavern. Our guide and I continued to crawl up a small tunnel for 20 feet to the face of the mining operation. There on our left two miners

were on their stomachs drilling holes with a compressed air drill about a foot above and below the darker thin layer of ore. Another tunnel to our right led down to ore carts on rails in a larger tunnel. The guide said at about 3:00 p.m. each day the holes were filled with dynamite, long fuses were attached leading back into the big cavern, and a loud claxon sounded for all people to leave the mine. The explosives were set off, and the miners returned to spend the night shoveling the loose ore and rocks mixed together into the chute and down to the ore carts.

The miners were mostly from Zimbabwe and Mozambique. They spent two years living in barracks and earned enough to return to their homes as the equivalent of millionaires in their countries. The miners had to be kept in separate barracks, workplaces, and shifts according to their tribes. Otherwise, we were told, they would kill one another.

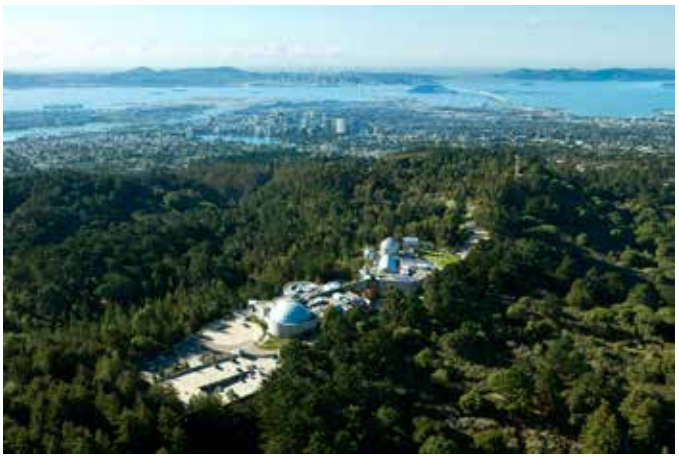
The University ACM people had to outdo the police and arranged for us to take a weekend safari in a rest camp called Tanda Tula in the Timbavati Private Game Reserve in KwaZulu-Natal Province. After taking our malaria pills, we flew there in a bush pilot's small Stinson airplane from Johannesburg east over the spectacular South African Grand Canyon called Blyde River Canyon and almost to the Kruger National Park, where we landed on a dirt landing strip. We stayed two nights in a fenced compound sleeping among 10 other guests in our own air-conditioned bush cabin and listening during the night to the wild noises and activities of vervet monkeys swinging through the trees. We had to stay within the compound's high fence because lions and Cape buffalo roamed around just outside. The food and drinks were great, and our evenings were occupied sitting around a large bonfire watching Zulu dancing and hearing about Zulu culture.

Each day we were taken in a bush 4x4 Range Rover through the jungle and grasslands to view the wild animals. We were fed breakfast and lunch on the road. We saw the Big Five—lions, Cape buffalo, elephants, a leopard and her cub in a tree, and a rhino—as well as cheetahs, giraffes, zebras, gemsboks, many Thomson's gazelles, ostriches, and greater kudus. Late one night we drove out to see a large pride of female lions and their almost adult offspring. We were able to drive up within three feet of them using car and flashlights. The lions were familiar with the jeep and its smell masked the smell of humans. It was heartwarming to see lions joining the pride as they came in from hunting, nuzzling one another and making a big to-do about it.

To get close to the elephant I had to run up a dry river bed where he was foraging along the bank. I had to keep the guide with an elephant gun between me and the elephant. As I ran taking photos, I ran out of film, and while running I tried to reload. This maneuver caused me to accidentally shove my thumb through the shutter leaves. This ended my photography until we returned to Johannesburg, where I found an old German refugee who miraculously repaired the camera.

Then we flew down to Cape Town, where I delivered a paper on computer crime at the conference. Cape Town is one of the most beautiful cities in the world, nestled under Table Mountain. We stayed along the beautiful Atlantic seashore. After a memorable trip to the wine country (the wine was not so good in this new wine region), we visited the Cape of Good Hope. After fighting our way through all of the baboons begging along the roadway, we stood on the southern point of the African continent and gazed out at the South Atlantic Ocean on our right and the Indian Ocean on our left. There was a distinctly different color and water surface condition, making a line in the water from the very tip of land to the southern horizon — a fitting end to a wonderful trip.

Bay Area Spring Fling to Chabot Space & Science Center: May 14



Join Bay Area SRI alumni on Wednesday, May 14, for a trip to the Chabot Space & Science Center in the Oakland Hills. Chabot features interactive exhibits, a digital planetarium, a large-screen theater, hands-on activities, and three powerful telescopes. Enjoy the views from the deck while having a delicious box lunch provided by Lutticken's of Menlo Park.

The bus will leave from the church parking lot adjacent to SRI at 9:30 a.m. and return at about 4:00 p.m. The charge is $25 per person for what should be a most enjoyable excursion.

Please send the Alumni Association your completed sign-up form and check by May 2. For questions, contact Dave Harvey at dave.harvey620@gmail.com. We hope to see you there!

Sandy Hinzmann Named NCGA Tournament Official of the Year

If you have played golf with Sandy Hinzmann, you undoubtedly have been impressed with her profound knowledge of the Rules of Golf. The Northern California Golf Association (NCGA) is impressed, too. It named Sandy 2013 Tournament Official of the Year.

The NCGA holds tournaments throughout the year for players of all levels. The tournament officials are volunteers responsible for conducting the tournaments, acting as rules officials, and monitoring the pace of play. The officials must go through an NCGA rules certification program.

Sandy became a tournament official in 2002. She said she was inspired to attend an NCGA Rules Seminar after becoming tired of men telling her what to do on the golf course. Now the men are asking Sandy about the rules.

Sandy is one of the tournament chairs of the SRI Golf Club, and she would be delighted to have more SRI alumni become members. You may email her at sandy.hinzmann@sri.com for details—and to congratulate her.

Who Do You Believe Made an Exceptional Contribution to the Success of SRI? Nominate That Person for the SRI Alumni Hall of Fame!

The SRI Alumni Hall of Fame honors former staff members who made exceptional contributions to the success of SRI. We are seeking nominations for Hall of Fame candidates by June 6.

All former staff members are eligible but should meet the following criteria:

- Significant, lasting contributions to the success of SRI
- Contributions recognized by staff, management, or clients
- Contributions in any area of research, management, or service, such as
  - Establishing a new laboratory or a new field of research
  - Performing an outstanding recognized service
  - Clearly demonstrating qualities of leadership, vision, and creativity
- What did the person leave behind?
  - Enhanced reputation for SRI
  - New or enhanced research, business, or support activity or facility.

Please prepare a write-up of about 300 words indicating how your candidate meets these criteria and send it to steering-committee-alumni@sri.com or SRI Alumni Association, 333 Ravenswood Avenue, AC-108, Menlo Park, CA 94025-3493. Again, the due date is June 6.

Directory Addendum

The enclosed directory addendum (covering the period December 7, 2013, to April 2, 2014) contains new members and corrections. Please add it to your 2014 Directory.

The SRI Alumni Association welcomes new members:

John Ciboci
Mike Forster
Judith Lhamon
Jin-ho Noh
Alfonso Valdes

And welcomes back previous members:

Sherry Barba
George Carpenter
Norman Chang
Walter Guggi
Jay Jeffries
Osamu Karatsu
Karl Levitt
Pierre Oberholzer
Ed Perkins
Ronald Pyszka

We look forward to your participation in the Alumni Association and hope to see you at our next group event.

SRI International Alumni Association

Cash Flow/Income and Expense

Year ending December 31, 2013

CASH BALANCE as of 01/01/13		**$18,250.51**
INCOME		
Cash income from membership dues and fees	$8,590.00	
Dividend income from bank account funds	$5.21	
Contributed funds		
SRI Federal Credit Union	$1,500.00	
SRI International	$500.00	
TOTAL INCOME	$10,595.21	**$10,595.21**
EXPENSE		
Services provided by SRI International		
Report production services	$6,040.13	
Postage and mailing expense	$1,998.88	
Special events and awards		
Annual Reunion expense		
Food and beverage	$4,207.31	
Recognition awards	209.05	
Other expenditures and costs		
Office supplies	$1,039.31	
TOTAL EXPENSE	$13,494.68	**$13,494.68**
CASH BALANCE as of 12/31/13		**$15,351.04**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James Leslie Benedict

James Benedict, a former SRI staff member, died of complications from a stroke on December 11, 2013, at age 61.

Born in Omaha, Nebraska, Jim was raised in San Mateo, California, and graduated from Hillsdale High School. He was a Research Support Technician at SRI from 1974 to 1988. After leaving SRI, he worked for a time as an airplane mechanic. Jim was a talented photographer who loved animals. He also greatly enjoyed working with his hands and building models.

Jim is survived by his mother, Donna; sister Nancy; nieces Julie and Pam; grandniece Lily; and grandnephews Luke and Liam; as well as many extended family members and a devoted pet cat, Pollux.

C. Bruce Clark*

Bruce Clark, a former SRI staff member, died peacefully at home in Los Altos, California, on January 14, 2014, at age 95.

A proud native Californian born in Calistoga, Bruce graduated as an electrical engineer from UC Berkeley in 1942. His professional career began at Harvard during World War II, where his team developed radar technology. In 1951, he became part of the Digital Development Group at SRI, working on projects as varied as ERMA (an early vacuum tube computer for automating bookkeeping at the Bank of America that transformed the banking industry) and the Pioneer 10 space probe. Despite retirement, Bruce extended his SRI career to 60+ years by doing consulting work for the institute until the age of 92.

Bruce's early career successes helped infuse him with an unflagging optimism. He was an avid tinkerer. A true progressive, he read widely and, until his last months, gleefully debated current events, always with facts at the ready. He spent many days at the library training people in computer and Internet literacy.

Bruce is survived by children David, Jim, Mae, and Laurie; niece Joan; and seven grandchildren.

Michael Coggiola

Michael Coggiola, former Director of the Mass Spectrometry and Trace Detection Group in SRI's Physical Sciences Division, died peacefully in his home in Sunnyvale on March 24, 2014, at age 66.

A true Bay Area native, Mike was born in the East Bay city of Albany. His early education included Albany schools, the University of California at Berkeley (B.A. in chemistry), California Institute of Technology (Ph.D. in chemical physics), and postgraduate studies at Lawrence Berkeley National Laboratory.

Mike worked at SRI from 1977 to 2011 and led a variety of projects, including development of mass spectrometer–based chemical agent detection instruments, development of an ultra-sensitive vapor detector for environmental monitoring, and sampling and analysis of volatile organics in breath. In the mid-1990s, he led the design and construction of the first aerosol mass spectrometer to be specifically designed to operate in a NASA DC-8 research aircraft. The entire system was put together in less than 8 months to meet the aircraft integration deadline. The instrument operated for 3 weeks of almost daily flights in the upper troposphere/lower stratosphere, recording the chemical composition of hundreds of aerosols over rural Kansas as part of the SUbsonic aircraft: Contrail & Cloud Effects Special Study (SUCCESS). Mike also was a key team member and group leader during instrument construction projects for SRI laser ionization mass spectrometers delivered to the Environmental Protection Agency, the U.S. Army, and Cleveland Clinic.

Mike's irreverent sense of humor was responsible for the subtle insertion of the term "TLA" (for "three-letter acronym" in the extensive glossary of a (winning) multimillion-dollar SRI proposal, as well as the writing of molecular-physics-based song lyrics set to popular tunes.

Having been an active Boy Scout himself, Mike donated much of his free time and energy as a Scoutmaster, Eagle Scout advisor, and Advancement Chairman for the Stanford District. He received the Silver Beaver award in 2011 in recognition of his skilled leadership and mentoring

contributions to the Boy Scouts of America. Mike also served as President of the Sunnyvale Heritage Park Museum and was a Board Member of Friends of Deer Hollow Farm. While battling progressive supranuclear palsy (PSP), a rare neurodegenerative disease, Mike struggled to maintain an active and imaginative life, with his devoted wife, Jacquie, at his side.

Mike is survived by wife Jacquie, sons Alex and Andrew, sister Elaine, niece and goddaughter Jessica, and nephews Rob and Chris.

Portions adapted from an obituary written by Jeanie Graham with input from Mike's many friends and colleagues at SRI

Dallas Cook

Dallas Cook, a former SRI staff member, died in Newark, California, on December 16, 2013, at age 70.

Dallas was born and spent his early years in Braddock, Pennsylvania, until his family moved to California in 1952. At SRI, Dallas was an integral part of the ITS group as a Principal Systems Analyst for more than 30 years. He was an early contributor to the success of the original Project Control system, among many other systems. Although his main focus was SRI corporate systems, he also participated in research project work. Dallas retired in 2010 after more than 40 years with SRI. Both before and after retirement, he was an avid woodworker, particularly in making furniture. He was also active in water sports, taking up water skiing in his 50s. Another strong interest was genealogy, where Dallas traced his and his wife's families' lineages back to the 14th century.

Dallas is survived by Debbie, his wife of 28 years; daughters Lisa and Bernadette; son Richard; grandchildren Monica, Brandon, and Clarissa; great-granddaughter Kierra; brother Dennis; and four nephews and one niece.

Donald R. Curran*

Don Curran, Director of Poulter Laboratory's Shock Physics and Geophysics Program from 1970 to 1997, died on February 28, 2014, in Oslo, Norway, after a long battle with Parkinson's disease. He was 81.

Don grew up in the Midwest, earned a B.S. in physics at Iowa State and M.S. and Ph.D. degrees at Washington State, where in 1960 he was one of WSU's first graduates in the discipline of shock physics. He worked summers at SRI while completing his thesis on experimental and theoretical studies of high-pressure phase transitions in metals. In 1961, he left for Europe, working 5 years at the Norwegian Defence Research Establishment near Oslo and 3 years at the Ernst Mach Institute in Freiburg, Germany. In 1970, he returned to SRI and began leading a dynamic fracture program that produced the NAG/FRAG (Nucleation and Growth to Fragmentation) family of micromechanical failure models for solids. After he retired, he moved to Oslo, but he continued to do consulting work as Senior Staff Scientist Emeritus at SRI until his death.

Author of many professional publications and coauthor of three books, Don was named a Fellow of the American Physical Society in 1994. In 2000, he received the John S. Rinehart Award, which recognized him for "seminal contributions to the understanding and modeling of dynamic fracture, fragmentation, and shear localization." In 2009, Don was awarded the Society's highest honor, the George E. Duvall Shock Compression Science Award.

His imprint on those who knew him is indelible. With unequaled wit, interpersonal skills, and a penchant for activities "just beyond my abilities," Don was so much fun to be around. He was a ski patroller at Tahoe's Heavenly Ski Resort and a frequent abalone diver, and he introduced and encouraged many of his colleagues to ski and dive.

Don is now patrolling at another Heavenly. May his powder be light and deep.

Based on an obituary written by Don Shockey

Philip Fialer*

Philip Fialer, a former electrical engineer at SRI, died in Palo Alto on December 27, 2013, at age 75.

Born in San Francisco, Phil graduated from the prestigious St. Ignatius High School in 1956 and then attended Stanford University, where he received bachelor's (1960), master's (1964), and doctoral (1970) degrees in electrical engineering. In 1970, he joined SRI's System Technology Division, where his work focused on projects in radio-wave and radar technology. In 1984, he cofounded Mirage Systems, Inc., an SRI spin-off that develops advanced radar systems and associated software, particularly for subsurface imaging. After he left SRI as a Staff Scientist in 1988, he held senior management and technical positions at Mirage Systems.

Brilliant but self-effacing, Phil was the consummate Renaissance man who relished "puttering around." While at Stanford, he was a DJ on the campus radio station and even helped invent a computer date matching service called Happy Families. He was a gourmet cook, a voracious reader with eclectic tastes, a skier, and a lover of folk musicians like Joan Baez and John Denver. He played the guitar, had an uncanny memory for song lyrics (and loved to sing them), looked forward to Stanford homecoming events and occasionally football games, and enjoyed unwinding in Hawaii's Kona Village, cruising to Alaska, and skiing at Lake Tahoe.

Phil is survived by Sue, his wife of almost 30 years; daughters Michele, Melissa, and Shannon; two nieces; and a host of other relatives and friends.

Richard Hamilton

Richard "Dick" Hamilton, a former SRI staff member, died in Palo Alto on November 28, 2013, at age 89.

A resident of Palo Alto for more than 70 years, Dick was born in Santa Barbara, California, and grew up in Los Angeles. He served in the U.S. Navy from 1943 to 1945, receiving his wings as a Naval Aviator, and was a flight instructor while stationed in Corpus Christi, Texas. He earned his degree in economics from Stanford University, where he continued his studies and received his MBA.

Dick had a two-part, 20-year career at SRI, from 1954 to 1962 and from 1972 to 1984. As a Senior Industrial Economist in the Industry Consulting Division, he conducted major market studies for C&H Sugar, Del Monte Food Corp., and many other major corporations and governments. He also was Director of Marketing Planning for Dole Pineapple for 10 years. These positions allowed him, sometimes accompanied by his family, to visit more than 30 countries around the world.

Dick enjoyed woodworking, photography, politics, and the theater, especially Shakespeare. He was an avid fan of the local professional and Stanford sports teams and, most important, of his boys' athletic pursuits and, later, his grandchildren's activities.

Dick is survived by Marjorie, his wife of 68 years, whom he called his Lady Marjorie; sons Brodie and Jim; five grandchildren, six great-grandchildren, eight nephews and nieces; and many caring friends.

Raymond Henry Sr.

Ray Henry, a Senior Purchaser at SRI Princeton and previously at Sarnoff Corporation, died peacefully on March 8, 2014, at age 67.

Ray was a hard-working man and a well-loved member of SRI's purchasing team. He was devoted to his family, and he loved the Dallas Cowboys and his Dunkin Donuts coffee.

Ray is survived by daughters Jennifer and Kari-Ann, son Raymond Jr., stepchildren Jodiann and William; grandchildren Kolby, Joanna, Naomi, Connor, TJ, Jesse, and Billy; siblings William, Barbara, Robert, Jean, Karen, and Ronald; and many nieces and nephews.

Kenneth H. Jacobson*

Ken Jacobson, a former political scientist at SRI, died January 21, 2014, at age 76.

Born in Ridley Park, Pennsylvania, Ken received degrees in political science and a Ph.D. in international relations from George Washington University. From early 1975 until mid-1984, Ken was one of SRI's few resident political scientists—and one of the best. He understood international/global politics better than anyone else, and he delighted in thinking and talking about both domestic and international politics. Clarity of thought defined his speeches; facility and grace were the hallmarks of his writing. And wit marked the essence of his personality: from irreverent impersonations in one-on-one encounters to finely honed satire in annual April Fool's Day publications.

Ken's early years during the 1970s were spent in Washington, D.C., as a political scientist doing contract work for SRI's Strategic Studies Center. Ken was a major player in and coauthor of many high-level SRI studies and analyses in support of the National Security Council, the U.S. Army Ballistic Missile Defense Program, and other government agencies. When he joined SRI in Menlo Park in 1975, he was Director of the International Political Research Program. He wrote extensively for the Business Intelligence Program, including a couple of major studies that forecast the growth of the U.S. defense industry during the 1980s. He also traveled all over the United States giving presentations.

Ken's outside interests and activities included Giants baseball, reading, and hiking. He was an extraordinary talent, a brilliant colleague, and a cherished friend. He maintained close ties with his SRI friends, and he was a member of the SRI Alumni Association.

Ken is survived by Paige, his wife of 44 years; daughter Kate; sons Byron and Kenneth; granddaughter Leah; and sisters Anne and Thora.

Based on an obituary written by Judith Lhamon

Russell C. Phillips*

Russell Phillips, a former SRI staff member, died at Channing House in Palo Alto on January 28, 2014, at age 90.

A chemical engineer, Russ worked at SRI from 1951 to 1983, retiring as Director of the Chemical Engineering Lab in the Physical Sciences Division. He returned to SRI as a Senior Consultant II from 1987 to 1989.

Eugene Spurlock*

Gene Spurlock, a former SRI staff member, died on January 27, 2014, at age 81.

Gene was a third-generation Californian and had made his home in Menlo Park since 1960. He joined SRI in 1973 and was a Senior Research Physicist in the field of underwater acoustics until his retirement in 1997.

In his career, Gene traveled the continent from Portsmouth, New Hampshire, to Point Loma, California and to Pearl Harbor, Guam, the Philippines, and Japan developing ultrasonic underwater detection techniques for the U.S. Navy, and to Istanbul for the Turkish Navy. He also went to Cairo for the National Science Foundation, working for a month in King Tut's tomb with representatives of Ain Shams University adapting ultrasonic energy to archeological techniques in limestone in search of lost tombs. This work resulted in location of some previously undiscovered chambers, and he received a patent for the innovation.

Gene's interests outside of work focused on his family and on camping and backpacking. He had a lifelong interest in photography; he worked his way through college as a wedding photographer and built a darkroom at home. The consummate handyman, Gene enjoyed working around the house, his sons' and friends' homes, his rental properties, and generally anyone who would have him.

Gene is survived by Lucile, his wife of 58 years; sons Steve and Mark; and grandchildren Lucy, Sophia, Anne, Marie, and Marshall.

Donald Tasto

Donald Tasto, a former SRI staff member, died in Atherton, California, on November 21, 2013, at age 70.

Donald was born in Evanston, Illinois, and grew up in Denver, Colorado. He received his Ph.D. in psychology at St. Louis University in 1967. He moved to the Bay Area in 1978. After working as a college professor, he joined SRI as a Senior Research Psychologist in the Urban & Social Systems Division. His research included fields as diverse as labor studies (the safety and health effects of shift work) and behavioral medicine (job stress and alcoholism). He left SRI in 1979 to become a clinical psychologist in Menlo Park. After receiving a law degree from the New College of California School of Law in 1998, he worked as a private-practice attorney in Redwood City.

Donald is survived by his wife, Jennifer; son Joseph; daughter Jennifer; sisters Mary and Patricia; eight grandchildren; and numerous nephews and nieces.

Viola Elaine Thompson

Elaine Thompson, a former SRI staff member, died of pancreatic cancer on December 6, 2013, at age 91.

Elaine was born in Tremonton, Utah. Her family moved to San Francisco when she was in high school. Her 22-year career at SRI began in 1952. She worked in Central Staff as a cartographer and report production coordinator. During this time she became interested in art, pursuing her art talent with paintings of flowers and landscapes. Her work was shown in galleries in Carmel, Los Gatos, and Saratoga. She opened her first art gallery/gift shop at the Stanford Barn; a few years later, she purchased "The Conversation Piece" in downtown Menlo Park, which she ran for more than 22 years.

Elaine is survived by daughter Penny; granddaughter Erin; grandson Pete; great-grandchildren M.J., Trevor, and Katheryn; half-sister Diana; and many nieces and nephews.

William Viezee

William Viezee, a former meteorologist at SRI, died of pneumonia associated with Parkinson's disease on January 20, 2014, at age 85.

Born in Apeldoorn, the Netherlands, Bill emigrated to the United States in the late 1940s. He served in the U.S. Air Force during the Korean War, earning several service medals, and then attended UCLA on the GI Bill, receiving a degree in meteorology. After working at RAND Corporation in Los Angeles, he joined SRI's Geoscience and Engineering Center in 1961, where his research involved such areas as measurements of stratospheric electricity and lidar studies of lower- and upper-atmosphere particulates and other atmospheric phenomena. He retired as Senior Research Meteorologist in 1995.

An avid bicyclist, Bill commuted between Palo Alto and Menlo Park every day of his 34-year career at SRI. He was also passionate about flying, piloting light planes for 20 years as a member of the Sundance Flying Club at Palo Alto Airport.

Bill is survived by Marie, his wife of 56 years, and by daughters Leslie, Michelle, and Lynne.

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*Member of the SRI Alumni Association

The SRI Alumni Newsletter is published three times a year (in April, August, and December) by the SRI Alumni Association.

Editors: Mimi Campbell and Klaus Krause
Design & layout: Linda Hawke-Gerrans