SRI Alumni Association

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MESSAGE FROM CHAIRMAN TOM ANYOS
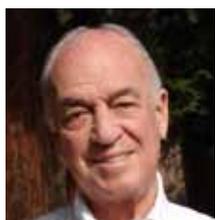
Tom Anyos

It's Alumni Reunion Time

This year's annual SRI Alumni Reunion will be on Friday, September 13, from 4:00 to 7:00 p.m. at the I Building. If you will be in Menlo Park, this is your opportunity to catch up with old friends, meet new ones, and learn what's been happening at SRI over the past year. We are hoping that Curt Carlson, President and CEO, will be able to join us to report on the status of SRI. Curt's travels have caused him to miss past reunions, but this year we are keeping our fingers crossed. He is always a fascinating and thoughtful presenter. Make sure you put Friday the Thirteenth on your calendar!

In this issue, you'll read some heartfelt remembrances of Doug Engelbart, who died in July. In SRI news, two outstanding staff members have been named SRI Fellows, and our research continues to make important contributions to society. Historically, learn a little more about one SRI man's role in the planning of Disneyland and his lasting legacy. Internationally, our colleagues in the UK had an interesting tour of the Globe Theatre, and we take a ride in an ill-equipped taxi in Milan.

As you read this issue, please consider joining the SRI Alumni Association Steering Committee. It's fun to be involved, and you can help the Association maintain its vigor and attract new members.

Looking forward to seeing you on Friday, September 13!

Tom

> *The Annual Reunion is September 13, 2013.*
> *See announcement on page 14.*
> *The flyer for this event is enclosed with this mailing.*

Opportunity to Join the Alumni Association Steering Committee

This year, a number of Steering Committee Chairperson spots will open as members move out of the Bay Area or complete their terms. As a committee member, you will interact with former SRI colleagues as you help plan events, work on the archives, edit the newsletter, or think of new ways to entertain members of the alumni association. Just contact Tom (tomanyos@aol.com) to learn how to join. We need your help!

Recollections of Doug Engelbart

By Jack Goldberg

Doug Engelbart passed away on July 2. He is probably the most celebrated of SRI International's researchers. His life and achievements have been abundantly remembered in numerous obituaries. Excellent sources of information about him are the web page of the Doug Engelbart Institute, www.dougengelbart.org, and Don Nielson's survey of SRI's technical achievements, *A Heritage of Innovation*. In this note, I offer some little-known information about Doug's start at SRI and a view of his extraordinary history of acceptance and challenge.

Early Experience in Electronics

Doug's first exposure to electronics was helping his father in a radio repair shop. When he was drafted into the Navy in World War II, he entered a radar technician training program and served for a time in the South Pacific. He was exposed to two themes there that became the core of his thinking on Human Augmentation: the use of cathode ray tube displays for radar target position indication and a seminal paper by Vannevar Bush on a vision of an information work space for storing and retrieving data. His first civilian job was at Ames Research Center, where scaling of forces over wind tunnel models of different sizes was a key issue.

First Contact with SRI

Doug started the Ph.D. program at UC Berkeley in pursuit of skills that could be applied to the advancement of mankind. His research yielded a class of elements for building logical systems from gas discharge devices. He patented his results and formed a company to exploit them. An investor recommended that he ask SRI to evaluate their potential, which was how he got to know the institute. The opinion was negative, probably in anticipation of the new semiconductor technology. In this encounter, he met Hewitt Crane, who was developing a digital logic technology based on multi-aperture ferrite cores. After a time, Crane invited Doug to join that program. Doug had become disillusioned about an academic career and decided that SRI offered greater potential for his long-range objectives.

Doug joined Crane's program and made some very valuable patented contributions. At the time, there were many contending technologies for digital systems, using almost every conceivable combination of physical phenomena. Doug promoted a project on The Philosophy of Logic Realization, an unfortunately obscure title for laying down criteria for doing digital logic with arbitrary physical phenomena. One of the side results of this work was the realization that semiconductor logic devices would be capable of scaling over practically unlimited reduction in size, a result that provided the physical basis for Gordon Moore's prediction of growth in semiconductor performance. This result assured Doug that the high computing power needed to support his augmentation ideas would eventually be available. This story illustrates a general characteristic of his work: carrying forward insights from one area of work to nominally unrelated new problem areas—in this case, scaling, from wind tunnels to semiconductor devices.

Augmenting the Human Intellect, Acceptance and Misunderstanding

Alongside these excellent results on hardware implementation, Doug was formulating what became his life passion: technology that would enable problem solvers to cope with problems of ever increasing complexity. An early paper caught the attention of Rowena Swanson of the Air Force Office of Scientific Research. She then funded Doug's writing of his key manifesto, *Augmenting the Human Intellect*. This document became an instrument for promoting the building of a test bed for his ideas. The scope of his ideas was enormous and profound, and his explanations gave rise to many interpretations. Inevitably, different people formed their own versions of what augmentation meant. Some were offended at the thought that they were going to have to depend on a machine to do their thinking. Doug sought and received substantial SRI support to get his system going, possibly one of the best investments that SRI ever made. After a while, he gained the respect and substantial support of program managers in ARPA.

An interesting early rejection came from HP. Doug offered Bill Hewlett and Dave Packard his recently invented mouse. They each declined the offer on the grounds that they simply were not in the computer business. In contrast, Steve Jobs was enormously enthusiastic about the mouse, but of course he had his own visions of how it could be exploited.

Doug attracted some excellent scientists and implementers. The result of their work was presented to the world in 1968 (in the San Francisco Civic Auditorium) at what became known as The Mother of All Demos. The demonstration presented mature versions of features that were then

very new but ultimately became essentials for human-computer work environments. Many technologists were simply overwhelmed by the power and excellence of the demonstration.

The mouse became the icon for Doug's work, an imperfect and even misleading kind of acceptance because it was an ingenious tool for only one of the services of his environment. Nevertheless, identifying him as "the person who invented the mouse" has the merit of compactness and familiarity and will probably stick. Xerox PARC, an early user, was often credited for the mouse, but recent histories have probably settled the question.
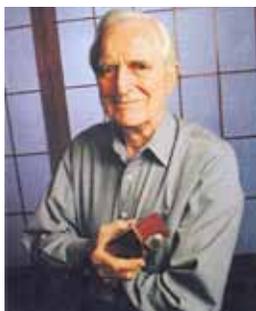
Expansion, Attenuation, and Vindication

The way the mouse became synonymous with Doug's work illustrates a general phenomenon: Just as the world became excited about one of his creations, he had long pushed ahead into bold new objectives. For example, his early results focused on augmenting an individual intellectual worker. From there, his target became groups of workers, then communities of workers, then communities of communities. The ARPANET was one of his first outward thrusts as a medium for collaboration among problem solvers. SRI was the second computer host on the network, and its Network Information Center became a major organizing force for the network community. A second and perhaps his greatest new thrust was dynamic augmentation, that is, making augmentation continually more powerful to meet the expanding complexity of world problems. Learning how to become more powerful became an objective in itself. A key notion was *bootstrapping*, in which the contribution of a new tool would be multiplied by using it as the foundation for or as an enrichment of other tools. A popular phrase in Doug's community was *collective intelligence*, which suggests a cooperative, evolving community that continually increases its own problem-solving ability.

Doug's ideas were not universally accepted. A typical problem in the valuing of his ideas was the promise that artificial intelligence soon would make it unnecessary to augment human problem solving. Doug's gently framed response was that until that day comes, let's do something for the human problem solver. He wanted to help people engage a problem rather than hand it over to a machine.

Unfortunately, the momentum of Doug's SRI work could not be maintained in the then-current funding environment, and there were many conflicts stemming from the changing hardware environment (this was before the era of low-cost workstations), competition for research funding, and expanding employment opportunities for his team members. Ultimately, his group was moved prematurely to a commercial environment.

In time, the research community came to recognize the magnitude of his contribution and the recognitions started to flow, including honors from the White House and Stanford and Yale, prizes, symposia, and, not the least, the SRI Gibson Award. Individual products of diverse system developers have been created that realized many of his cornerstone prescriptions. A full appreciation of his vision remains incomplete, and after all these years many ask the question, Why didn't I get all that Doug was saying to us?

Beyond recognizing these world-changing achievements, let us also remember what a gentle and patient person he was and how he loved people and exploring new things.

Jack Goldberg joined SRI in January 1951. His first significant project was the logical design of the Bank of America ERMA computer. He was one of the founders of the Computer Science Laboratory and was its director for more than twenty years. CSL grew concurrently with Doug Engelbart's Augmentation Research Center and the Artificial Intelligence Center. His research interests centered on fault-tolerant computing and parallel processing. He followed Doug's work from its beginnings and shared in the pleasures of countless personal and family recreations. They remained in contact after the SRI days.

Doug Engelbart and His Vision – A Personal View

By Don Nielson

My credentials for writing about Doug don't stem from working with or for him but from an attempt about a decade ago, as part of a book I was writing on SRI, to tell Doug's story yet again but this time from an SRI perspective. That was the only differentiator I had from others who have written about him: What did SRI think of him as he struggled to reveal his vision? It was in delving into this question that I gained a personal understanding of what he was about, and that's what I want to convey here, admittedly at a high level. I came to know Doug personally only over the last twenty years or so, but I admired him greatly, both for his remarkable foresight and for being a warm human being.

Doug's earliest vision was of the use of computers to augment human capability and then, through the elevation of our own thinking and collaborative effort, to attack the world's most difficult and important problems. His language beyond this simply stated vision often lacked the definition and precision needed to convince others that what he wanted was realizable. His uncertainty was reflected in a number of requests for internal SRI funding that began in 1960, not quite three years after he arrived at the institute. A couple of these were directed at individual or personal information retrieval and, for a while, even teaching machines.

Fortunately, at SRI and soon in the government, Doug found some people willing to give him a shot. With some attention and with funding in hand, he then had to give expression to his vision, and that started with determining what computer augmentation really meant. How could it best be realized, first by an individual user and almost concurrently by a set of collaborators?

Although at that time the notion of computer-aided cognition was arising in the research community, everything was pretty incremental. Doug had a more complete vision of it, but the vision still needed expression. As early as 1964, he was pressured by his ARPA client to create something tangible. What Doug and his very capable group ultimately brought forward in their famous 1968 demonstration in San Francisco was a type of computing glaringly different from what existed and, in retrospect, strikingly predictive of what was to come. This was the genesis of a compelling new man-machine relationship that was both mechanical and cerebral. In one insightful demonstration, Doug and his colleagues showed how computer use could become so immediately responsive that it felt "personal." It could extend a user's reach in both information gathering and, he hoped, intellect. Though user collaboration was also there to a degree, it was necessarily constrained within a single timesharing machine.

Most people weren't ready for such change, but Doug's concepts did capture the imagination of a set of young observers, many of whom couldn't wait to take the next steps. That those next steps might not be exactly in Doug's defined direction or under his control irritated him a bit. And though some of his disciples would leave with their "religion" intact, they soon ran into a world that was becoming preoccupied with this more personal way of computing. Though in truth he and his colleagues had originated that environment, Doug believed it was a distraction to his more elevated collaborative goals.

Unfortunately, because these ensuing innovations in computing did not fall exactly into the language and pace of his vision, Doug had trouble seeing or accepting what was happening around him. He clung to his Augment system, and when asked to embrace related innovations as they arose, he would mostly brush them off as incomplete or distractive. If you tried to compliment him by saying that something new was derived from his work, you had to be prepared for an extended discussion.

Another way to look at the 1968 demonstration is that it was the first time others could readily see at least a facet of his dream. It was his first great experiential revelation and, sadly and in all honesty, it would be his last.

But that doesn't mean other facets of his dream weren't taking shape outside his direct influence. First of all, additional factors he foresaw would become the engines that propelled the evolution of computing. Two of these factors were the economies afforded by the digital revolution and the emergence of computer networking. The former was previewed in his early papers on the scaling of digital systems and the latter by his volunteering to operate at SRI ARPA's first Network Information Center, which for over two decades was the *only* gateway to computer network participation, including the Internet.

As the world of computing progressed, Doug continued to focus inwardly, still searching for new language and new listeners to whom to express his dream. Newly phrased concepts emerged from his efforts, but their amorphous nature and ambitious scope didn't lend themselves to the grounding so powerfully felt in the 1968 demo. This more philosophical approach kept him outside the mainstream of computer and information system development. But I believe something ironic happened. Within many of his concepts lay kernels of need that were actually being realized, albeit separately rather than in one integrated whole. Though he couldn't seem to embrace them, many of these emerging realities were and are the embodiment of Doug's dream, at least embryonically. Here are some easily drawn examples of his "unfulfilled" concepts and their actual, if "external," realization:

- Wikipedia, now by far the world's largest encyclopedia, is clearly a realization of his *Dynamic Knowledge Repository*.
- Advocacy websites such as Change.org and social media, at play even inside today's chaotic political revolutions, are his *Networking Accelerators*.
- Rapid prototyping, the ability to compress the product development cycle by orders of magnitude and to use contributions by people regardless of where they are located, is a globally practiced embodiment of *Networked Group Collaboration*.
- And, finally, the mastering of today's complex integrated circuits and genomic systems, which no one person can know completely, is nothing if it is not *Collective Intelligence* or *Collective IQ*.

Clearly, many of Doug's original concepts are alive and well. I see Doug's vision easily in all the complex and ubiquitous developments of the information world being played out before our eyes! May I now suggest that his peers see that impact as well?

To give further credence to the notion that Doug's SRI work sowed a lot of seeds in what would prove to be very fertile ground, you need only look in one other direction. After Doug lost his client sponsorship at SRI and SRI sold his intellectual property and lab to Tymshare, Inc., in early 1978, he spent a long time struggling without much success or recognition either for what he had done or for what he continued to espouse. But after a decade or two, the technical world's attention swung toward him and what he had given it. As his insights became more evident, the recognition began to flow. Just look at the sidebar (next page) for a not quite complete list of his awards from 1987 to almost the time he left us. Though he would modestly downplay it all and still reach for his dream, the world he knew truly and eventually honored him.

This would not be the first time that justified fame came as a result of a stop along the way to another goal. Columbus will be forever known only for what he happened upon on his way to India. I see Doug's life a little like the voyage of Columbus. As much as anyone, he is deservedly recognized for creating what we all think of as computing today. No, Columbus didn't get to see India, and Doug, by his own admission, didn't see the end of his vision. But I believe the evidence of his influence surrounds us all and will never end.
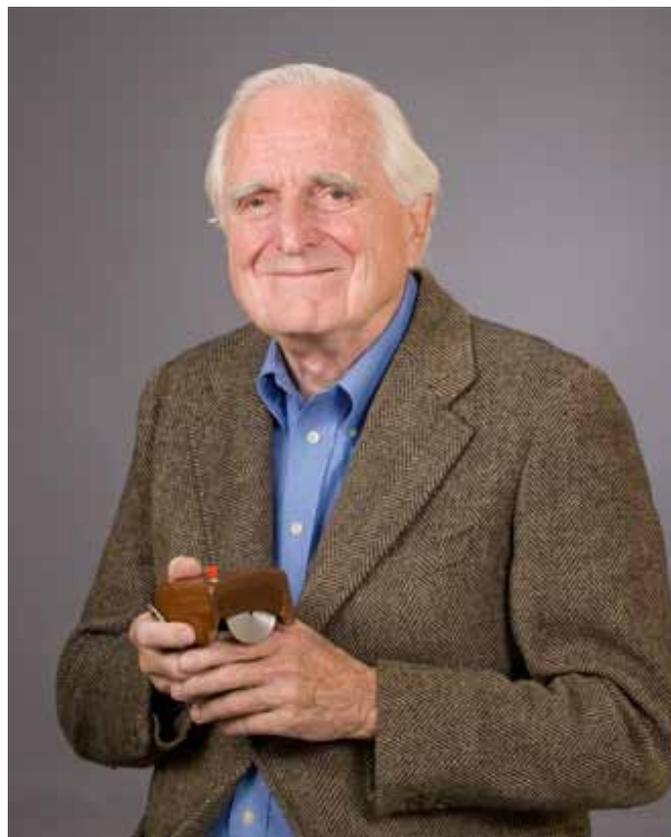
Most of Doug Engelbart's Awards

1987	PC Magazine Lifetime Achievement Award
1987	Distinguished Alumni Award, Oregon State University
1989	Distinguished Service Citation, Sigma Phi Epsilon Fraternity
1990	Lifetime Achievement Award, Electronic Networking Association
1990	ACM Software System Award
1991	American Ingenuity Award, National Association of Manufacturers
1991	Distinguished Alumnus Award, UC Berkeley CSE (Computational Science and Engineering) Department
1991	Lifetime Achievement Award, Dominican College, San Rafael, CA
1992	Pioneer of the Electronic Frontier Award, Electronic Frontier Foundation
1993	IEEE Computer Pioneer Award, IEEE Computer Society
1994	Price Waterhouse Lifetime Achievement Award
1994	Engelbart Award, Best Annual Paper at International Conference on Hypertext and Hypermedia
1994	Honorary Doctorate Degree from Oregon State University
1994	Fellow of the American Academy of Arts and Sciences
1995	Editor's Choice Award, Mac User Conference
1995	SoftQuad Web Award, World Wide Web Conference
1996	ASIS Special Award, American Society for Information Science
1996	Distinguished Engineering Alumnus, University of California, Berkeley
1996	Certificate of Merit, Franklin Institute
1997	Inductee, Discovery Online Hackers' Hall of Fame
1997	ACM Turing Award (highest award in computer science)
1997	Lemelson-MIT Prize
1998	First Award for Innovation in Human-Computer Interaction, ACM SIGCHI
1998	GR Stibitz Computer Pioneer Award, Computer Museum of America
1998	National Inventors Hall of Fame
1998	RH Brown American Innovators Award, U.S. Department of Commerce
1998	Engineering Hall of Fame, Oregon State University
1998	Fellow Award, International Engineering Consortium
1999	Gibson Achievement Award (first recipient of SRI's highest achievement award)
1999	Honorary Doctor of Science Degree, New Jersey Institute of Technology
1999	IEEE John von Neumann Medal
1999	Benjamin Franklin Medal in Computer Science, Franklin Institute
1999	Software Visionary Award, Software Development Forum
2000	Inductee, Entrepreneurship Hall of Fame, Collegiate Entrepreneurs Organization
2000	Inductee, The Computer Hall of Fame, Computer Museum of America
2000	National Medal of Technology, U.S. Presidential Medal
2001	Honorary Doctor Science Degree, Santa Clara University
2001	Webby Lifetime Achievement Award, International Academy of Digital Arts and Sciences
2001	Lovelace Medal, British Computer Society
2001	Inductee, Industry Hall of Fame, CRN Magazine
2002	Lifetime Achievement Award, ACM SIGCHI
2005	Fellow Award, Computer History Museum, Mountain View, CA
2005	Norbert Wiener Award, Computer Professionals for Social Responsibility
2005	Inductee, Silicon Valley Engineering Council Hall of Fame
2005	Certificate of Special Congressional Recognition, Michael M. Honda, U.S. Congress
2009	Fellow Award, New Media Consortium's highest award
2010	Weatherford Award, Austin Entrepreneurship Program, Oregon State University
2011	Inductee, Intelligent Systems Hall of Fame, IEEE Computer Society
2011	Honorary Doctor of Engineering and Technology, Yale University's first such award

Phil Porras and Ian Colrain Honored with 2013 SRI Fellows Award

This year, the recipients of the Fellows Award, SRI's highest honor for technical achievement, are Phil Porras, a program director in the Computer Science Laboratory, and Ian Colrain, associate director of the Center for Health Sciences.

Early in his SRI career, **Phil Porras** became lead developer of EMERALD (Event Monitoring Enabling Responses to Anomalous Live Disturbances), a network intrusion detection system. Subsequently, Phil has led the Cyber Threat Analytics program for the Army Research Office, SRI's Malware Threat Center, and most recently efforts in software-defined and open-flow networking, which hold promise for revolutionizing computer networking.

Photo by Scott Bramwell, used courtesy of SRI.

In his 16 years at SRI, Phil has also been responsible for millions of dollars of funding and leadership of a significant number of Computer Science Lab staff. His reputation as a premier malware analyst has extended beyond the computing community with widespread media coverage for both Phil and SRI, especially for his role in the global effort to deal with the Conficker computer worm.

Ian Colrain was recruited to SRI in 2001 to establish a human sleep research program. He is an internationally recognized leader in research on sleep, the brain, and alcoholism. Through his efforts, sustained and significant sources of funding have contributed to making human sleep research a program of excellence at SRI.

Photo by Scott Bramwell, used courtesy of SRI.

Ian's research has been published broadly, markedly changing the way we think about sleep and consciousness. In one important contribution, he proposed that a long-known EEG response known as the K-complex can be used as a marker of the functional integrity of the central nervous system, which is sensitive to changes from aging, disease, or altered brain structure due to chronic alcoholism or Alzheimer's disease. Recently, Ian found additional evidence that the K-complex is a useful indicator of brain recovery with abstinence from alcohol—a discovery that could transform treatment for alcoholism.

SRI's 2013 Fellows were strongly endorsed by leaders in their respective areas of research and clearly demonstrate the intellectual and professional attributes associated with the SRI Fellows program.

SRI Seeking to Tap Global Research Market

At an All-Hands Meeting on July 16, SRI President and CEO Curt Carlson acknowledged that the U.S. research and development market is growing ever more competitive for limited government research funds. Yet the R&D markets—$420 billion in the United States and $1.5 trillion globally—offer tremendous opportunity for SRI's services and innovations. SRI's ideas and multidisciplinary approach are distinguishing advantages—SRI's "sweet spot"—in tackling such global topics as clean energy, effective education, and synthetic biology.

New SRI Timeline of Innovation

Have you seen the new SRI Timeline of Innovation on the SRI website? Built by SRI Corporate and Marketing Communications, the timeline presents the impact of SRI's contributions to society in an engaging way and promotes SRI's broad achievements in innovation to potential and existing clients and the community at large—from smog research in the 1940s to Siri in 2007 and beyond. The timeline also exemplifies the difference people can make by working for SRI. Take a look to find the projects you led or contributed to during your time at SRI.

Breakthrough in Huntington's Disease Research

Huntington's disease is an inherited disorder that causes nerve cells in certain parts of the brain to degenerate. Over time, this causes motor dysfunction, cognitive decline, and psychiatric symptoms. No treatments exist to reverse the disease.

Researchers in SRI's Biosciences Division applied electroencephalography (EEG) to measure changes in neuronal electrical activity in a mouse model of Huntington's disease. The result was a breakthrough. They found an EEG signature that appears to be a biomarker for the presence of the disease, identifying early changes in the brain before the onset of symptoms. Until now, most EEG studies in patients with and animal models of neurodegenerative diseases had shown changes in EEG patterns only after disease symptoms occurred. Further, changes in the EEG signals in the mice indicated that the researchers might be tracking the underlying disease process.

Many neurodegenerative diseases cause changes in the EEG signals that are associated with the degenerative process. This work with Huntington's disease is the first step in being able to use EEG to detect the presence and progression of such diseases. This capability could contribute to development of therapeutic drugs for not only Huntington's, but also Alzheimer's and Parkinson's diseases.

Helping Japan Build Successful Start-up Companies

SRI is establishing a collaborative program with the New Energy and Industrial Technology Development Organization (NEDO), Japan's largest public R&D management organization and champion of innovation in the country. The objective is to identify and nurture research projects with the potential of building successful start-up companies in Japan and thereby enhancing Japan's economic competitiveness.

Japan is a hub of scientific research and the home of many well-established technology companies. Yet it faces challenges in commercializing its technology on a global scale. SRI and NEDO have launched a technology commercialization accelerator program for promising R&D teams. Using SRI's Five Disciplines of Innovation® process, the teams will learn and use this common language and framework for defining innovation, proposing ideas effectively to the global investment community, and successfully taking innovations to market.

Center for Innovative Research in Cyberlearning

In cooperation with the National Science Foundation (NSF) and in collaboration with Education Development Center and NORC at the University of Chicago, SRI is launching and managing the new Center for Innovative Research in Cyberlearning (CIRCL). Cyberlearning is an emerging field that integrates technology and learning sciences to improve education. The intent of CIRCL is to maximize the potential of NSF-funded projects in the field.

Meetings and online working groups for leaders of NSF-funded research and innovation projects will be organized to identify synergies among approaches, and a CIRCL website was launched in June to support online learning and collaboration among the researchers. The objective of these activities is to integrate what computer scientists, mathematicians, learning scientists, and educational leaders know to make significant, lasting improvements in learning. CIRCL held its first meeting of researchers and stakeholders in June in Washington, D.C., which will be followed by a meeting in Silicon Valley in the fall.

MetaCyc: World's Largest Metabolic Pathways Collection

SRI researchers, in collaboration with the Boyce Thompson Institute and the Carnegie Institution for Science, have been developing MetaCyc, a database that consolidates information about metabolism. Last spring this team reached an impressive milestone: MetaCyc became the most comprehensive compilation of metabolic pathway information in the world, containing 2,000 pathways.

MetaCyc catalogs how organisms biochemically transform one compound into another through intricate networks of synthesis and degradation. It integrates many of the biochemical reactions that have been documented in different forms of life. MetaCyc contains information about more than 10,900 reactions and more than 10,400 compounds from 35,000 cited publications. More than

2,300 organisms are currently represented, from bacteria, archaea, and yeast to plants and animals (including humans).

A significant aspect of MetaCyc is that it synthesizes individual publications throughout the scientific literature—showing the big picture. Further, it combines the work published by individual laboratories into pathways that the researchers in those labs had not recognized.

MetaCyc is one of the databases in SRI's BioCyc database collection, a free online reference used by thousands of researchers in government, academia, and industry. Scientists use MetaCyc to predict biochemical pathways present in newly sequenced organisms and to better understand where in the metabolic network a particular gene or metabolite is involved. This information is particularly useful in metabolic engineering, where cells are manipulated to produce specific substances, such as antibiotics or biofuels.

A Trusted Smartphone

As the business use of employee-owned smartphones and tablets increases, IT departments are struggling to implement cost-effective policies for ensuring both personal privacy and business security. The U.S. Marine Corps Systems Command is sponsoring an SRI project to help the mobile device industry address isolation between the personal and enterprise domains so that government users will be able to leverage the resulting commercial products.

The objective is to develop a user-friendly "multiple-personality" smartphone. That is, the device is to have an architecture that works for the commercial marketplace while meeting the security needs of the Department of Defense and other government departments. For example, a doctor user would be able to access email from patients and medical data, while a military user would be able to access secret data and applications related to operations.

SRI is leading a team that includes Galois Corporation, General Dynamics Broadband, and LG Electronics. The team members are embedding domain isolation, encryption policy, and related technologies into smartphones for evaluation by carriers.

Unexpected Career Path for Teachers in California

A study by SRI, J. Koppich & Associates, and Inverness Research produced an unexpected result. State policies designed to promote and enhance the effectiveness of beginning teachers do not match employment realities. In particular, beginning teachers often do not receive the support they need to be effective in the classroom.

State policies assume that teachers complete their preparation and earn a preliminary credential, take a probationary teaching job, complete a two-year induction program, are evaluated annually, and earn a clear credential and tenure. The research team found that most beginning teachers are not allowed to follow this career path.

Rather, nearly one-quarter of first- to third-year teachers in California work for some part of their careers as temporary teachers or long-term substitutes. Thus, more than half of teachers entering their third year have not earned tenure. Teachers not on the tenure track often are not evaluated, even though they may continue teaching year after year.

Two of the recommendations from this study were that the state keep accurate counts of temporary teachers and require that all teachers—including temporary teachers and long-term substitutes—be supported and evaluated.

Drive-up Biometric ID Authentication System Wins Award

SRI International Sarnoff's Iris on the Move® PassThru™ drive-up identification system was named Best in Biometrics, Identification and Credentialing by the Security Industry Association New Product Showcase last spring. This is the fourth consecutive year that SRI Sarnoff products have been recognized for excellence by the Security Industry Association.

Iris on the Move is a biometric security product for vehicle access points. It captures face and iris images for identity authentication with a processing speed of up to 10 drivers per minute. It operates outdoors in all lighting conditions, regardless of time of day, sun position, or shadows. Drivers need not remove gloves, hats, or eyewear or leave their vehicles. They roll down their window, push a start button, and look at the light. Iris on the Move works with drivers in vehicles of various heights, from small coupes to large pickup trucks.

A Tale of Two Theatres

By David Gibby

On March 17, St Patrick's Day, Jeanette and I met twenty UK Alumni and friends for a guided tour of The Globe Theatre and Exhibition in London. The original open-air theatre, which was built in 1599, was partly owned by William Shakespeare and was used to stage many of his plays. It burnt down in 1613 when a special effect on stage went wrong. A cannon used for a performance of Henry VIII set the thatched roof alight and the fire quickly spread, with the theatre reportedly taking less than two hours to burn down completely. It was rebuilt a few years later, but in 1644 the Puritans banned stage plays, and the site was used for tenement housing.

In 1997 a third version of the theatre was completed, thanks to the inspiration and determination of Sam Wanamaker, the American film director and actor. This theatre is a faithful reconstruction of the original—but the thatched roof has water sprinklers! During the summer season, a range of plays are performed to audiences of up to 3,000 people, seated and standing.

The exhibition included details of the 30-year reconstruction project. It also displayed many artefacts, depictions of life in Shakespearean London, and displays of how the various stage effects were built and costumes were made. In one particularly interesting demonstration, we saw a young volunteer putting on the many-layered costume of a young lady, a task of a complexity and skill that would challenge any modern dress designer.

Afterwards, we had an excellent lunch at the nearby Turkish restaurant Tas Pide.

In this photo are (left to right) Maurizio Petitbon; Jacques Pezier; Hetty, Dawn, and Glenn Carmichael; Bob Morgen; Gillian and Nick Collin; and Charles Stancomb. At another table were Gia Campari, Peter and Margot Weisshuhn, Anne Saunders and friends, Ken and Yvonne Lindup, Mimi Quaife, and Jeanette and I.

Two weeks later, Jeanette and I flew to Athens and then drove to Porto Heli, in the Peloponnese, to the boatyard where we had left our sailing yacht *Harbinger* for the winter. The route took us past the ancient theatre at Epidavros, set in a peaceful countryside. This theatre, built in the fourth century BC (i.e., 2,000 years before The Globe was built), is accepted as the best preserved of all Greek theatres, with perfect acoustics. A piece of paper rustled or a coin dropped on the stage can be clearly heard from any one of the 14,000 seats.

Each year since 1955 a theatre festival has been held and attended by hundreds of thousands of visitors. When we visited it was out of season; the few visitors that day spoke in hushed tones, and the wind could be heard gently blowing through the pine woods. The Globe Theatre and the busy streets of London seemed a very long way away!

Taxi Tales

In the December 2011 Alumni Newsletter, we introduced Taxi Tales*, wonderful reminiscences by Peter Weisshuhn about taxi drivers and adventures during his travels with SRI. Peter was in SRI's Croydon office and worked mostly for European clients, as well as for U.S. and Japanese clients in Europe. In this issue, we travel to Milan with Peter.*

Milan

By Peter Weisshuhn

Getting a taxi in Milan on a rainy evening at rush hour is not easy. So I was glad when the tiny Fiat stopped for me. I threw my briefcase in the back and sat in the front. A colleague had recently been injured in a Rome taxi that crashed. He had sat in the back, where there was no seat belt. In fact, there had been a belt but no buckle. Buckle-less rear seat belts were a Mediterranean specialty: It looked like the car had seat belts in the back, but they were useless, whether for economic reasons or in defiance of the authorities, the enemy of all true Mediterraneans.

I attempted to fasten my seat belt. It had been tied in a series of knots to disable it, presumably because using it would be an insult to the driver. We all know how proud Italian men are of their driving skills. People have been killed for less than impugning a red-blooded Italian's driving.

As I undid the knots, the driver asked the reason for my unreasonable behaviour. I explained that I worked with my head and did not want to push it through his windscreen should there be a sudden stop.

"Ah, you work with your head? What is it you do?"

I earned my living as a business consultant but thought it simpler to say I was an engineer. This clarified my strange activity at a stroke: "Un ingegnere! Now I understand! My son, too, is an ingegnere and he also uses his seat belt! Ecco, that proves it, all engineers are crazy!"

Having got out at my destination, I took a close look at his front tyre. It was bald. Milan's roads are paved with granite slabs polished by decades of traffic. In combination with rain and bald tyres, they are lethal. Luckily, my driver had had no need to apply his brakes forcefully.

Editors' Note: Peter Miles

Peter Miles, who died in England on June 20, was a frequent contributor to the International Journal section of the newsletter. He shared with us very personal stories, such as his memory of traveling from Prague to England as a *Kindertransport* child and his gratitude to Sir Nicholas Winton, his impressions on a trip to Tibet, and a New Year's trip to see his grandchildren in Brazil. He shared with us his views about the human spirit, such as when he wrote about his patronage of a play documenting a Sudanese Muslim woman's escape from slavery and his admiration of Daniel Barenboim, who is using music as a way to unite youth in the Middle East.

Peter touched our hearts and broadened our perspectives. We will miss him.

*Sir Nicholas Winton and
Peter Miles (May 2011)*

Harrison "Buzz" Price: The Disneyland Legacy

By Don Nielson

It was 1953 when Buzz Price, sitting in SRI's Los Angeles office, received an unexpected phone call from Walt Disney. Walt had heard that SRI might be able to help him plan an entertainment park in the area. Buzz must have convinced him that SRI could because before the call ran its course, SRI had an agreement to proceed.

While there is a lot to the story and a lot of work that followed, suffice it to say that first SRI and then Buzz came to serve the Walt Disney enterprise well. Foremost in that early relationship were two aspects: where should the park be located, and what should its business model be? After a study of climate, demographics, and what was in Walt's mind, the Orange County site was selected. SRI surveyed nearly all the amusement parks of the day to get an idea of what worked and how that could be worked into Walt's concept of a park with a family-oriented atmosphere that could sustain itself financially.

Buzz and other SRI staff members participated, one of whom was C.V. Wood. Wood led the SRI project and would be asked by Walt's brother Roy to join Disney itself and lead the construction of Disneyland. It was a hectic undertaking, and its course can be found in my book, *A Heritage of Innovation*. But Wood and Walt didn't get along, and not long after Disneyland's opening in 1955, Wood was gone from Disney.

Walt had a different view of Buzz Price and tried to hire him. Buzz told him that he believed Walt would listen to him better if he worked on the outside. Buzz formed Economic Research Associates in 1958 and, in the course of more than 100 projects for Disney, became a trusted advisor and friend to Walt. Buzz's son David said, "Dad knew how to distill information and turn the mathematics into a form that was easily understood and digested, and he could do it with humor, wit, and intelligence."

In 2003, Buzz was proclaimed a Disney Legend, and not long after his death on August 15, 2010, he was honored with a commemorative "window" along Disneyland's Main Street.

Walt Disney Parks and Resorts Chairman Tom Staggs, Disneyland Resort President Michael Colglazier, and David Price, son of Buzz Price, (center) celebrate this special honor in April 2013.

Buzz also worked for other amusement park companies, some 3,000 projects in total, and rose to an honored position in that field. In 1994, Buzz received a lifetime achievement award from the Themed Entertainment Association, and that award now carries his name.

See the December 2010 Alumni Newsletter for Buzz Price's obituary.

Windows at Disneyland

To honor people—mainly employees—who made important contributions to the parks, Disney puts their names on the windows of the businesses along Main Street, U.S.A. To merit a window, the person must have achieved a high level of service, respect, and achievement. As a trusted advisor to Walt Disney, Buzz Price certainly fit the qualifications. The business displayed on his window is Price Is Right Land Company.

Do You Have Memories of Life at Stanford Village?

After reading the History Corner in the April 2013 Newsletter ("History of the SRI Property"), Jim Selover sent us the following memory (and map) of his housing assignment at Stanford Village. We're sure many SRI alumni were residents there, too, during their graduate years at Stanford. Please send us a short description of what you remember. We think it would be fun to compile them to create a picture of student and family life on the SRI campus.

Stanford Village, SRI, and Me

By Jim Selover

My first impression of Stanford Village was when I registered at Stanford University for the chemistry doctoral program in 1950 and received my dormitory assignment. The diagram here, dated 1954, shows Stanford Village when it also housed the fledgling Stanford Research Institute. The SRI installations are shown in black, while the remainder were used to house graduate students.

I was housed in Building 114 (the structure above SRI's building 104, Library) along with about 50 other graduate students. At the end of each building were study areas, and along one side were two sleeping porches, each of which housed about 20 students. I was first assigned to one of these porches.

Soon after I arrived, a lottery was held for a private room that had originally been used by the Army for the officer of the day. I was fortunate to win the lottery and was able to become ensconced in my small room with its own private

bath. The room had a single bed, a desk, a clothing stand, and a place for my steamer trunk.

This would be my safe cocoon for my first year at Stanford University.
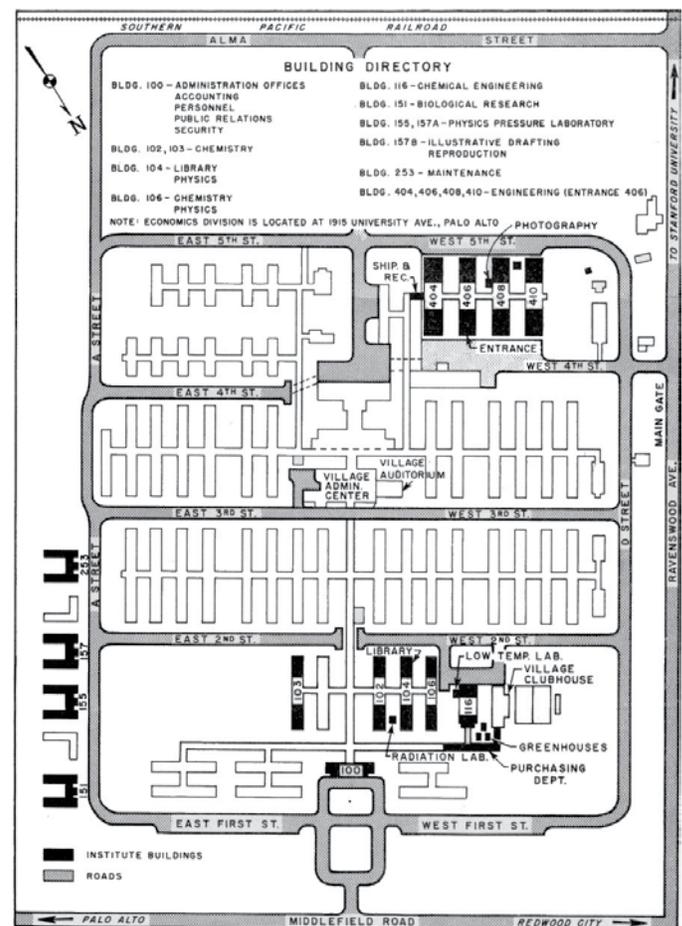
LOCATIONS OF
STANFORD RESEARCH INSTITUTE BUILDINGS
IN STANFORD VILLAGE

A Solution to Your Business Problems? See Allan Dolgow's New Book

Allan B. Dolgow, formerly with SRI International and SRI Consulting (1979–1996), has published a book, *The ABC's of Simple Computer Models That Improve Business Operations.*

The book is a compendium of solutions to business problems from Allan's experiences as an international business management consultant at SRI and Dolgow Consulting.

The ABC's illustrates how complex problems were solved by using spreadsheets. It presents each business problem, describes the environment where the work was done, and details the solution. The Index gives all the formulations used. The book is a useful primer for new or experienced management consultants and company staff assigned the task of problem-solving.

This privately funded limited edition was sent to selected university business libraries.

Have a Memorable Friday, September 13 – Attend the 2013 Annual SRI Alumni Reunion

This year's annual SRI Alumni Reunion will be held on Friday, September 13, from 4:00 to 7:00 p.m. in the International Building at Menlo Park. If you will be in the area, please plan to attend. See old friends and colleagues, enjoy delicious refreshments, hear the latest news about SRI, and make Friday the Thirteenth (in the thirteenth year of the millennium) your lucky day by winning one of the fabulous door prizes! A special feature of the reunion will be the induction of two SRI alumni into the SRI Alumni Hall of Fame.

The charge is $25 for each attendee. Please complete the enclosed sign-up sheet and return it by September 6.

We hope to see you on September 13.

> If you receive the newsletter electronically, you have the choice to (1) wait for mailed printed copies of the reunion invitation flyer and membership renewal forms to send in your replies or (2) print copies from the forms posted on the website and send in your replies.

Alumni Association Membership Renewals Due by October 15

A year has gone by already. It's time to renew your SRI Alumni Association membership for 2014. The fee is $20 per member, due by October 15, 2013.

If you plan to attend the annual Alumni Reunion (see above), you may mail your reunion sign-up form together with your membership renewal form and write a single check for both.

All members who renew by mid-December will be included in the 2014 Alumni Directory, which will be issued in early January.

> ### Directory Addendum
>
> The enclosed directory addendum (covering the period April 5, 2013, to August 2, 2013) contains new members and corrections. Please add it to your 2013 Directory.

The SRI Alumni Association welcomes new members:

James Colton
Jon Eidelson
Adrienne Eng
Naomi Levenson
John "Matty" Mathieson
Jenny Rafia
Pedro Romero
JD Smith

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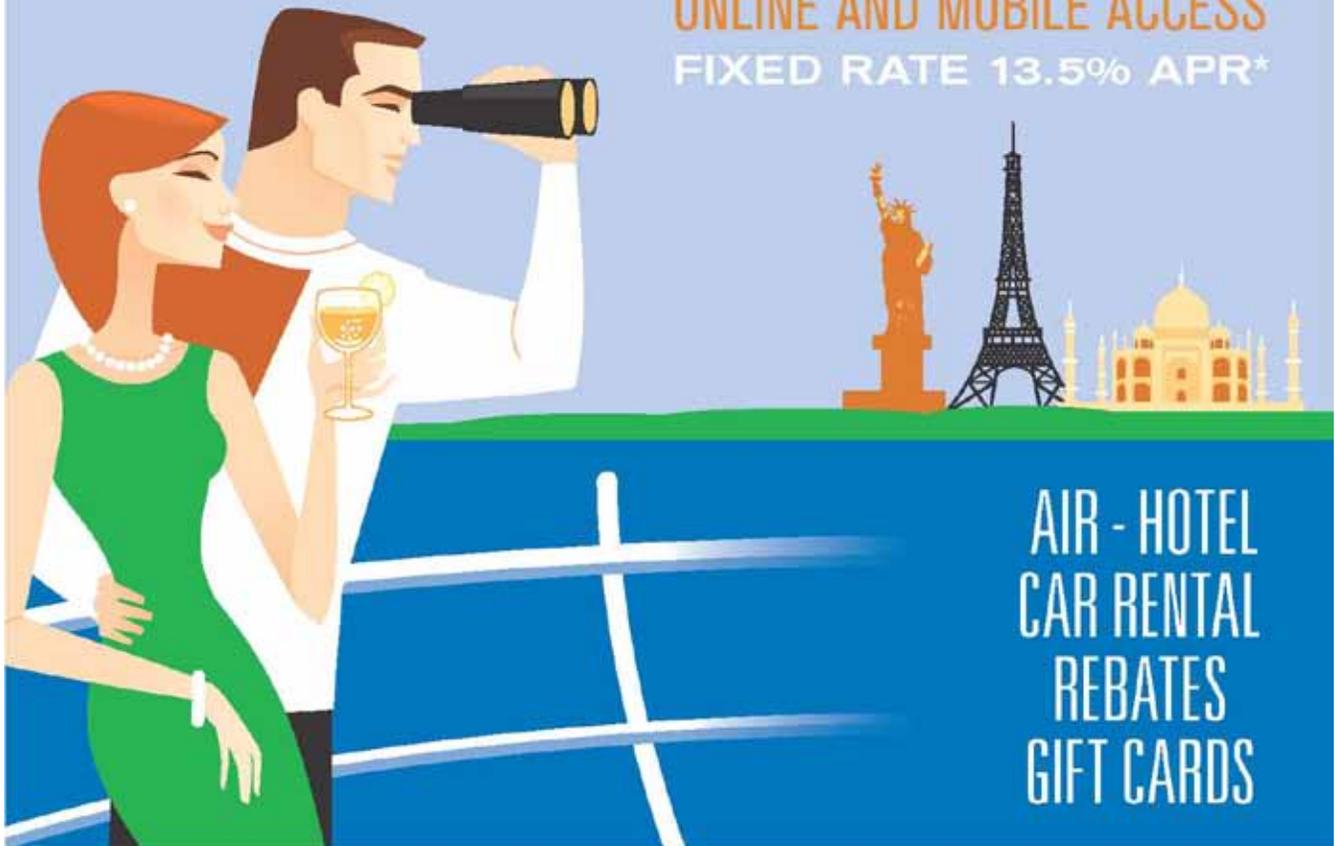
Eric Arons

Eric Arons, a Senior Research Engineer in the Applied Optics Laboratory, died on June 13, 2013, after a 4-year battle with brain cancer. He was 44 years old.

Eric joined SRI in 1996 after earning a Ph.D. in physics from the University of Michigan. He was a talented researcher who worked on a wide range of projects involving optics, optical sensors, signal processing, and various applications of these technologies.

Outside of work, Eric was a man of many talents and interests, including kayaking, backpacking, windsurfing, and ultimate Frisbee. In addition to his athletic prowess, Eric was a talented musician, playing guitar, jazz bass, and trumpet. He was also a civic-minded individual and a tireless volunteer, here and abroad: tutoring and mentoring disadvantaged children, campaigning door-to-door in the Midwest, and serving his beloved San Francisco Mission community causes.

After his diagnosis with glioblastoma multiforme, he fought the disease by participating in promising clinical trials. As a commitment to the global fight on cancer, he founded the Huck Cancer Ultimate Frisbee Tournament in partnership with the LIVE**STRONG** Foundation and sponsored a team at the SF Brain Cancer Walkathon. In the end, he donated his body to UCSF Medical Center to be used for cancer research.

On August 5, the Applied Optics Lab held a ceremony at SRI dedicating a tree to Eric's memory, in recognition of his strong environmental beliefs and activities.

Eric is survived by his mother, Toby; sisters Donna and Wendy; brother William; and nieces and nephews Ruth, Benjamin, Avalon, Leda, Elijah, and Nicolas.

Marjorie K. Balazs*

Marjorie Balazs, a former SRI staff member, died peacefully on March 9, 2013, in St. Louis County, Missouri. She was 80 years old.

Perhaps believing that women could not go very far in science, a college chemistry professor advised her after two years of chemistry studies, "You might as well stop now, because you will never be more than a chem. tech." Rather than stop, Marjorie earned a bachelor's degree in math and chemistry education from Washington University, a master's degree in chemical education from Stanford University, and a master's in chemistry from the University of San Francisco.

In her early career, Marjorie had a number of appointments as chemistry teacher and analytical physical chemist. When she worked at SRI in the 1960s, she began developing new and better techniques for detecting contaminants in water used during silicon wafer manufacturing. These innovations were the impetus for her founding Balazs Analytical Laboratory in Sunnyvale in 1975, which she owned and operated for 27 years. Her lab gained a reputation worldwide for work in high-purity water, chemicals, and films.

Among Marjorie's many honors were an award from President Reagan in 1986 as an outstanding woman entrepreneur in the United States, Bay Area Business Woman of the Year 1986, and an honorary doctorate from the University of San Francisco in 2011. At SRI, she became the first woman chair of the SRI Staff Advisory Group.

Marjorie is survived by brother Karl, sister Carol, and many nieces, great-nieces, and great-nephews.

Oren Lee Christensen*

Oren Christensen, a former SRI staff member, died in Davis, California, on December 4, 2012, after a long battle with cancer. He was 90 years old.

Born in Selma, California, Oren grew up in Fresno and attended Fresno State College and UC Berkeley, where he studied civil and structural engineering, earning Phi Beta Kappa honors. After serving in the U.S. Navy, Oren worked in civil and structural engineering design; in 1959, he became supervisor of the Facilities Planning Group at Lockheed Missiles and Space Company preparing siting

and design criteria for satellite ground stations in various locations. He also received an MBA from the University of Santa Clara during this time. From 1965 to 1977, he directed facilities planning for SRI. He left SRI to take a position as vice president for new building programs, Federal Reserve Bank of San Francisco and Los Angeles. On retirement in 1987, he continued as a building program consultant for several years before devoting his time to volunteer activities in Santa Rosa and Davis.

A member of First Presbyterian Church of Santa Rosa and University Covenant Church of Davis, Oren was active on both churches' building programs. Music was an integral part of his life, and he always found time to sing in church choirs. One of his greatest pleasures came from volunteering at Mondavi Center for the Arts. He also devoted time to Grace House, which provided services to the homeless, until his health declined.

In 2000, Oren and Eunice Adair were married and combined their families, both having lost their spouses to cancer. Oren is survived by Eunice, daughter Sharon, son Darrell, stepdaughters Susan and Laura, seven grandchildren, and four great-grandchildren

Walter Conway

Walter Conway, a former SRI technology consultant, died of pancreatic cancer at his San Francisco home on June 25, 2013, at age 64.

A graduate of Purdue University and MIT's Sloan School of Management, Walt was a Senior Consultant in the Services and Consumer Industries Division from 1981 to 1990. While at SRI, he led banking and information technology management projects worldwide. During his career, he also held security-related consulting and management positions with Commonfund, Visa, DRI-McGraw Hill, and 403 Labs. He was a frequent speaker at professional conferences and author of numerous papers. In recent years, he consulted with colleges, universities, and other institutions to plan, implement, and manage their credit card and e-commerce systems securely.

Walt shared his management expertise as a board member and board president for Episcopal Community Services, the largest provider of homeless services in San Francisco. He also did pro-bono consulting as a member of Stanford University's Alumni Consulting Team.

Walt is survived by his wife, Meredith; sister Joy; brother Bill; and 13 nieces and nephews.

Douglas Engelbart*
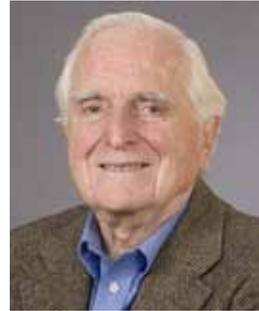
Doug Engelbart, computing pioneer and SRI alumnus, died of acute kidney failure at home in Atherton on July 2, 2013, at age 88.

Born and raised near Portland, Oregon, Doug graduated from Oregon State College with an electrical engineering degree in 1948. He went to work at the Ames Research Center in Mountain View, but in 1951 he left to enter UC Berkeley, where he received a Ph.D. in electrical engineering in 1955. After a brief stint on the UC faculty, he took a position at SRI in 1957. He set up and led SRI's Augmentation Research Center (ARC) from 1959 to 1977. He and his ARC team developed a number of computer-based innovations designed to augment the human intellect and collaborative capabilities. These innovations included the computer mouse, multiple overlapping windows on the screen, hypertext, and context-sensitive help. His team's presentation of these advanced innovations to a thousand computer professionals in 1968 in San Francisco was so impressive that the demonstration became known as "The Mother of All Demos." In 1969, the ARC also became the second node of the ARPANET, the predecessor of the Internet.

Doug left SRI when the ARC was transferred to Tymshare, Inc., which was eventually acquired by McDonnell Douglas. Neither company supported Doug's vision for the role of computing, and he retired from the commercial world in 1986. In 1988, he and his daughter Christina founded the Bootstrap Institute and the Douglas Engelbart Institute to conduct further research and promote his vision.

Doug received many honors over the years, including the National Medal of Technology, the ACM Turing Award, the Lemelson-MIT Prize, and the IEEE John von Neumann Medal. From SRI, he received the Gibson Achievement Award in 2001.

As SRI President and CEO Curt Carlson put it, "Doug's vision was to solve humanity's most important problems by using computers to improve communication and collaboration. His contributions to society cannot be measured. He not only created a compelling family of world-changing innovations, he inspired a generation of researchers to make additional major

contributions to society. The way he and his team worked—using rapid iteration, collaboration, and multidisciplinary teams—is one of his most important contributions to SRI. SRI was blessed to have known and worked with him."

Doug was married for 47 years to his first wife, Ballard, who died in 1997. Her importance to him was clear when, after the uproarious applause at the end of his famous demonstration, he expressed his appreciation for her loving support. Doug is survived by his second wife, Karen; daughters Gerda, Diana, and Christina; son Norman; and nine grandchildren.

Alan Havens

Alan Havens, a former SRI staff member, died unexpectedly on March 11, 2013.

Alan's career at SRI began in 1980. He was a network technician in Communications & Technical Services. Alan made a big hit in 1987 in SRI's first talent show, Star Search. He wrote a song, "The Room Where You Sit," and sang it to the tune of "On the Street Where You Live." It described plaster falling, bats flying free, spiders crawling—you get the idea. He was the hit of the show for the four years it ran. Alan retired from SRI in 2006.

James "Jim" Kloss

Jim Kloss, a 20-year staff member, died in Grass Valley, California, on June 9, 2013, after a long illness. He was 72 years old.

Born and raised in Chicago, Jim graduated with a master's degree from the journalism program at the University of Illinois at Urbana. He was working on his Ph.D. in communications when a visiting *Chicago Daily News* editor persuaded him "to take a firsthand look at the media in action" by joining the paper's staff. The "look" lasted from 1967 to 1977. Jim covered major news events from the street riots at the 1968 Democratic National Convention and their aftermath to the trial of Tom Hayden and other members of the so-called "Chicago 7."

After the *Daily News* ceased publication, Jim moved to California and joined SRI in 1982. He worked in Corporate Communications as Managing Editor of the *SRI Journal*, a wide-ranging newsletter about the institute, and then as a Specialist Technical Writer/Editor until he retired in 2002. An avid golfer himself, one of his SRI

projects was to work with the PGA of America to help them expand and improve on their training program. After retirement, Jim moved to Grass Valley, where he continued his working relationship with the PGA as a consultant.

Jim is survived by Mary, his wife of 27 years; sons Richard and Michael; and grandchildren Marston and Kyriana.

Fred Marshall

Fred Marshall, a former research engineer at SRI, died suddenly of cardiac arrest on March 19, 2013, at age 89.

Born in Macon, Georgia, on March 31, 1923, he would have been 90 years old on Easter Sunday 2013. His last email (on the day of his death) shared all the details of the family celebration that was planned. But he had another celebration that would take its place.

Fred served in the U.S. Navy during World War II, clearing mines in the South China Sea. After receiving degrees in electrical engineering from Mercer University and Georgia Tech, he pursued a career in radio engineering and research at Georgia Tech, Stanford University, and SRI. His SRI career began in 1970. He was a Senior Research Engineer in the Ionospheric Dynamics Lab when he left SRI in 1991.

Fred is survived by daughter Betsy; sons Fred, Bob, and Dave; nine grandchildren; and five great-grandchildren.

Peter Miles*

Peter Miles, a Senior Management Consultant in SRI's International Operations in Croydon, UK, from 1975 to 1990 died in England on June 20, 2013, at age 87.

Born into a prominent Czech Jewish family in Prague as Petr Bedrich Meisl, Peter was saved from Nazi persecution in German-occupied Czechoslovakia by the *Kindertransport*, an operation organized by an English stockbroker named Nicholas Winton. Peter was one of 669 Czech Jewish children taken on trains from Prague to England in 1939 just before the outbreak of World War II. Fortunately, he had an uncle in England who received him there, so Winton did not have to find a foster home for him. Peter wrote about his experiences

and his reunion with now centenarian Sir Nicholas Winton in several Alumni Newsletter articles.

Patrick Henry Omlor

Patrick Henry Omlor, a former SRI staff mathematician, died in Perth, Australia, on May 2, 2013, at age 81.

He worked as a Computer Applications Analyst in Finance and Administration from 1958 until 1972, doing math-oriented research and computer programming. After leaving SRI, he relocated to Perth, Australia, where he worked on computing applications for Alcoa and consulted with a local university on creating difficult mathematics problems for examinations.

Steve Rooks

Steve Rooks, an SRI staff member for 43 years, died peacefully on May 20, 2013, in Mountain View, after a long struggle with cancer. He was 69 years old.

Steve was a Receiving Clerk in Shipping and Receiving and formerly worked in Chem Stores. His passions were running with friends, being involved with his church, and volunteering with the American Red Cross, especially in major disasters. On his own time, Steve helped victims during the Santa Cruz floods in 1982, Hurricane Hugo in 1989, Hurricane Andrew in 1992, the floods in St. Louis in 1993, and, more recently, Hurricane Katrina.

Steve is survived by two sisters, three brothers, and more than 65 other family members.

Ray Rosenman
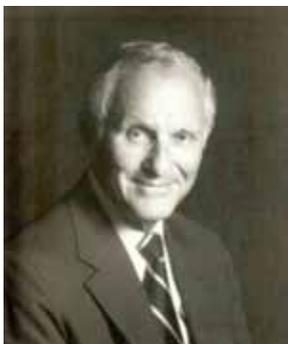
Ray Rosenman, a former SRI health sciences researcher, died peacefully on May 30, 2013, after a long illness. He was 93 years old.

Born in Akron, Ohio, and raised in Detroit, Michigan, Ray received A.B. and M.D. degrees from the University of Michigan, followed by service in the U.S. Army Medical Corps late in World War II. After his military service, he completed residencies in internal medicine, cardiology, and cardiovascular research. After moving with his family to San Francisco in 1950, he devoted half-time to the clinical practice of internal medicine and cardiology and half-time to experimental, epidemiological, and clinical research in lipid metabolism, hypertension, and coronary heart disease. He was Associate Chief of the Harold Brunn Institute for Cardiovascular Research at Mount Zion Hospital and Medical Center in San Francisco from 1951 to 1977. He then transferred his research program to SRI, where he continued his cardiovascular studies in the Health Sciences Program until he retired as Director of Cardiovascular Research in 1992.

During his 45-year career, Ray presented the results of his research at more than 200 research society meetings and gave more than 700 lectures at hospitals, medical schools, medical societies, and other scientific groups in every state of the United States and in 26 countries. With Meyer Friedman, M.D., he was the co-founder of the concept of Type A Behavior and coauthor of the influential and award-winning book *Type A Behavior and Your Heart*. He was also honored with numerous awards and memberships on committees of prestigious medical associations.

Ray is survived by daughters Sally and Laurie; grandsons Michael and Brian; great-grandchildren Matteo, Lucas, Natalie, Mila, and Sebastian; and long-time close friend Dr. Vera Price.

Jan Frederik "Frits" Schimscheimer
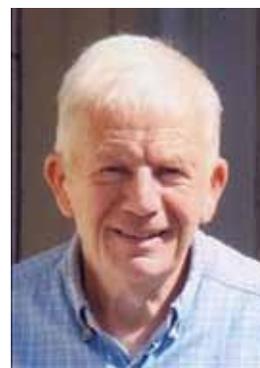
Jan Frederik Schimscheimer a former SRI staff member, died on March 26, 2013, in Emerald Hills, California, at age 79.

Known as Frits by all who knew him, he was born in Amsterdam, the Netherlands. He grew up in a family marked by great resilience, strength, and integrity, who endured five years of living in occupied Holland during World War II. He graduated from college in Amsterdam and then became a Chemical Engineer at Royal Dutch Shell. In 1957, Frits and his wife, Gerda, emigrated to the United States and settled in California, where he worked for Royal Dutch Shell and then IBM and SRI. He started working at SRI in 1967 and left in 1969. He was a Polymer Scientist in the Chemistry Department, where he filed and received several patents for his work. After working for several companies in Europe and on the East Coast, he moved his family back to California, where he spent the last 25 years of his career with

the Chemical Systems Division of United Technologies in Coyote.

Frits is survived by Gerda, his wife of 55 years; sons Fred and Mark; daughters Carole and Ingrid; and grandchildren Michael, Stephen, Christina, Carolyne, and Sabrina.

Earl Scribner*

Earl Scribner, a former SRI staff member, died on February 15, 2013, at age 78.

A native of San Francisco, Earl graduated from Mission High School and was hired by the San Francisco Naval Shipyard Hunter's Point as an apprentice electronics mechanic. After serving in the U.S. Army during the Korean War, he entered a two-year electronics program at City College of San Francisco (CCSF). He then was hired by SRI as a microwave technician in the Electromagnetic Techniques Lab and later became a laser technician. In 1968, Earl left SRI and accepted a position as full-time electronics instructor at CCSF while attending San Francisco State College evenings working toward his bachelor's degree and two lifetime teaching credentials. For 18 summers between 1968 and 1991, Earl worked at SRI on various laser radar studies involved in meteorological programs using fixed, mobile, and airborne lidar systems.

Earl is survived by Sachiko, his wife of 47 years; daughter Dianne; and sons Clifford and Steven.

Mark Stickel

Mark Stickel, a Principal Scientist in the Artificial Intelligence Center at SRI, died of lung cancer in Hillsboro, Oregon, on April 13, 2013, at age 65.

Born in Wilmington, Delaware, Mark got his Ph.D. from Carnegie Mellon University in 1978 and came to SRI in 1981 after a stay at the David Sarnoff Laboratories. His work at the AI Center focused on automated deduction, natural language processing, and computer security. He was a world-class researcher in automatic theorem proving, a form of automated reasoning or deductive inference. Mark was known as the developer of one of the first associative-commutative unification algorithms, which allow accelerated treatment of operators, like addition or multiplication, that can ignore the order of their arguments. He also developed general methods for building the properties of a theory (such as theories of time or space) into the inference operations of a reasoning system. He was the author of a number of notable theorem-proving systems used in many applications, including systems for reasoning about planetary astronomy, geography, biology, medicine, and business enterprise services. Although Mark "retired" from full-time work in the mid-1990s, he continued his association with the AI Center until his death.

For his contributions to the field, Mark received the 2002 Herbrand Award, the highest award in automated reasoning. He was program chair for the 1990 Conference on Automated Deduction (CADE), the main conference in his field. He was elected Fellow of the Association for the Advancement of Artificial Intelligence in 1992. He was coeditor of the book *Automated Reasoning and Mathematics: Essays in Memory of William W. McCune*; the book arrived two days after Mark died.

Mark is survived by his wife, Anna.

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*Member of the SRI Alumni Association