August 2015

SRI International

Alumni Association

333 Ravenswood Avenue • M/S AC-108
Menlo Park, CA 94025-3493

Voicemail: 650-859-5100
Email: steering-committee-alumni@sri.com
Web page: http://www.sri.com/about/alumni

MESSAGE FROM VICE CHAIRMAN KLAUS KRAUSE

Klaus Krause

The days are getting shorter, and our thoughts at Alumni Association headquarters are turning to the Annual Reunion, which is coming up September 17. Alumni always enjoy reconnecting with friends and former colleagues, not to mention the delicious food and drink, interesting presentations, and door prizes. Remember, guests are always welcome. Look for your invitation in a separate mailing.

In this issue, you'll find a description and photos of this year's very successful Spring Fling at the Shoreway Environmental Center in San Carlos. Who knew that garbage disposal and recycling of other waste products could be so interesting?

Robotics and cybersecurity are hot topics these days, and we have three articles showing SRI's leading-edge involvement in these technologies. You may be surprised at the progress in humanoid robots, the use of an online video game to improve cybersecurity, and the success of robotic surgery pioneered by SRI. From a historical perspective, Don Nielson discusses SRI's "invisible product," which I won't give away here. This year's recipients of SRI's highest honor for technical achievement, the Fellows Award, are also featured.

On the international front, we have another in the always entertaining Taxi Tales series and an account of a visit by UK alumni to Bletchley Park, the headquarters of Britain's successful efforts to break Nazi codes during World War II. We also note the death in England of Sir Nicholas Winton, "the British Schindler," who saved many Jewish children from the Nazis, including our former UK correspondent Peter Miles.

Finally, we introduce Member Profiles, a new section featuring personal stories by or about Alumni Association members. Our first profile describes the impressive career of Capp Spindt, who is still doing research for SRI 54 years after he was first hired as an intern. We look forward to your submissions of profiles for future issues.

Note: Chairman Pete Valenti is working on recovering from health challenges and has asked me to fill in for him for the time being. We owe Pete a debt of gratitude for his past leadership and dedication, and we wish him a successful and speedy return to full health.

Klaus

The Annual Reunion is September 17, 2015. See announcement on page 13. The flyer for this event will be sent to all association members in a separate mailing.

Spring Fling: Visit to SEC in San Carlos

No – not *that* SEC, but the Shoreway Environmental Center, a huge, state-of-the-art recycling facility for San Mateo County, located about 8 miles north of Menlo Park, off Highway 101. The operation is a complex amalgamation of some private-sector and numerous public-sector entities. Impressive!

Who would have thought garbage in garbage out could be the formula for a fun interesting day. I take my hard hat off and toast the great job done by Tom Anyos and his wife for making the event so eventful. Cheers!

Barry Minkin

This year's Spring Fling outing drew about 30 alumni and companions, few of whom had previously visited a full-service center of this nature and scale.

We started the April 29 event at 11:45 a.m. with a great box lunch (from Whole Foods) and soft beverages in the picnic area in front of the visitors' entrance, sitting on benches made of recycled wood and old tires. At 12:30 p.m., two college-age environmental students gave us an overview of the Center's organization and activities, as well as of the scope of our tour. Our young female guides were outgoing, competent, and efficient leaders, each adding value to our experience.

Following that introduction, each participant donned a lime-colored safety vest. Later in the tour, we were provided with white hard hats, goggles, earplugs, and headphones with wireless audio reception.

The wireless headphones were a great help in enabling us to easily hear our leader's comments in a very noisy environment.

Bob Schwaar

Our walk-through involved scaling stairs to passageways and catwalks that reached a dizzying, five- to six-story height from floor to ceiling. We visited the main sections: Transfer Station, Public Recycling Center, Materials Recovery Facility, Collection Service, and Environmental Education Center. Our guides gave brief introductions and also answered questions at each new phase of the tour and as we walked along.

I was really impressed by the Center's educational programs for students. They even have an annual "Trash to Art" contest.

Ann Krause

The accompanying photos show views of the tour activities and facility operations. Informative details about the Center and its functions can be found at www.sbrecycling.net and www.rethinkwaste.org.

Thanks to Tom Anyos, Murray Baron, Boyd Fair, Klaus Krause, and Don Nielson for Spring Fling photos.

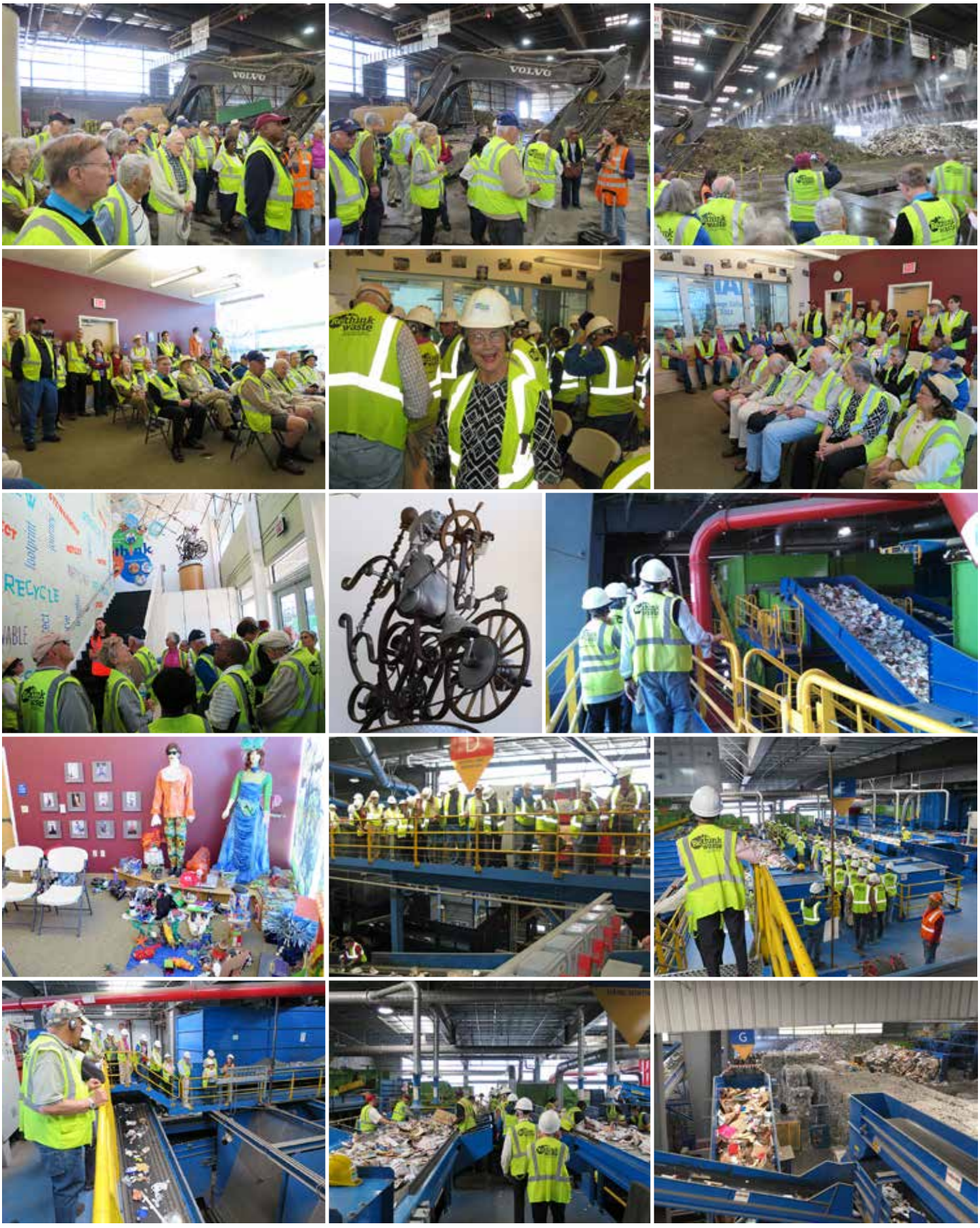









Transfer Station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SRI Fellows for 2015 Named

SRI's Fellows Award is the institute's highest honor for technical achievement. Fellows selected for 2015 are Geneva Haertel, director of assessment research and design in SRI Education, and Mark Petrie, a senior chemist in the Advanced Technology and Systems Division's Chemistry and Materials Laboratory.

In her distinguished career in educational methodology, **Geneva Haertel** has been instrumental in the development of sophisticated technology-based assessments that enable measurement of important aspects of knowledge that previously were not measured. Geneva is at the forefront of the great educational challenge to understand what factors are most significant in predicting educational achievement.

Mark Petrie has special expertise in the synthesis of high-energy compounds (i.e., explosives, propellants, and high-density fuels). These propellants enable design of missiles with a 25 percent increase in range over current systems. His recent development of a stable form of aluminum hydride (a hydrogen storage material) with a fraction of typical battery weight could lead to significant military and commercial applications for this portable energy source.

SRI's 2015 Fellows were strongly endorsed by leaders in their respective areas of research and clearly demonstrate the intellectual and professional attributes associated with the Fellows program.

SRI Robotics' High-Impact Platform Technologies Showcased at DARPA Robotics Challenge Expo

SRI Robotics demonstrated its leading-edge robotics technologies at the DARPA Robotics Challenge (DRC) Expo on June 5 and 6 in Pomona, California. Known for pushing the boundaries of the field, SRI Robotics unveiled PROXI™, a new humanoid robot that can operate up to 20 times more efficiently than current humanoid robotic platforms. A mass-producible robotic hand and advances in wearable robotics also were displayed.

PROXI™, SRI's humanoid robot

"SRI, which is at the leading edge of robotic manipulation developments, is applying new component technology to expand the design space for robotics," said Rich Mahoney, Ph.D., director, SRI Robotics. "We are laser-focused on three key areas that will enable a new generation of solutions: low-cost, high-performance manipulators; wearable robotics; and versatile high-rate micro-manipulation. The DARPA Challenge—which convenes some of the world's most advanced robotics R&D organizations—is the ideal opportunity to show how we are addressing real problems with new applications."

SRI Robotics featured the following platform technologies at the Maximum Mobility and Manipulation Exhibits in the DRC Technology Expo:

- A new low-cost humanoid robot that achieves high performance and high efficiency. Its mechanical design incorporates a novel transmission to reduce friction and increase efficiency to 97 percent. Future applications include support for disaster response, manufacturing, and medicine.
- A new robotic hand that can sense pressure and contact, and use force-controlled gripping to manipulate objects made from a wide variety of soft and hard materials. It can handle a payload of up to 100 kilograms for hefty applications, and has a finger tendon sensor to pick up delicate objects for potential use in industrial applications.

- SuperFlex™ wearable technology that extends beyond the capabilities of current robotic exoskeletons. It uses new lightweight, high-power, muscle-like actuation; comfortable, soft skin attachments; and electronically releasable spring elements that minimize mass, bulk, and noise and eliminate constraints on natural joint motions. Beyond military applications, SRI is exploring applications such as assisting individuals with musculoskeletal diseases by offsetting muscle fatigue and augmenting muscle strength.
- Micro-manipulation technology that reliably controls micro-robots for high-throughput smart manufacturing of macro-scale products in compact, integrated systems.
- Taurus™ dexterous robot, a potentially life-saving telemanipulation tool for military and domestic bomb squads to defuse vehicle-borne improvised explosive devices (VBIEDs). The robot also has potential household applications, such as safeguarding an elderly person at home.

SRI Releases New Game for DARPA Crowd-Sourced Software Verification Program

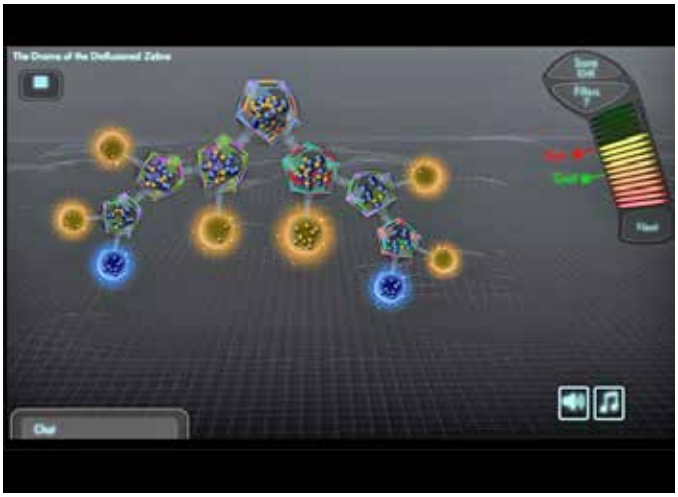
Citizen Scientists Interested in Cybersecurity Can Now Play Binary Fission at www.verigames.com

SRI, in partnership with the University of California, Santa Cruz (UCSC), the Air Force Research Laboratory, and the U.S. Defense Advanced Research Projects Agency (DARPA) Crowd-Sourced Formal Verification (CSFV) program, has created a game where sophisticated gamers can help improve security of the country's critical software. Binary Fission was designed as a fun and accessible way for "citizen scientists" to help increase the reliability and security of mission-critical software by verifying that it is free of cyber vulnerabilities.

From a gaming perspective, the goal of Binary Fission is simple—sort colored atomic particles or "quarks" in as few steps as possible. Players use up to 100 filters to sort the particles into separate pools. As players move their cursor over a particular pool, they are shown in real time how successfully a particular filter would sort the quarks in that pool.

Binary Fission also allows more sophisticated interactions: rather than defining behavior of software elements from scratch, players can mix-and-match pre-made descriptions. The search for such descriptions—technically called "loop invariants"—takes advantage of visual pattern recognition that people are better at than computers.

"We're very excited about the play experience in Binary Fission," said lead game designer Heather Logas of UC Santa Cruz. "Informed by new research about formal software verification and inspired by the citizen science phenomenon, the game is both very playable and also should contribute well to the underlying science problem."



Examples of critical software behavior, along with some pre-made invariants, are used to generate each level in Binary Fission. The quarks in the game actually represent values of variables inside the critical software, and the sorting filters represent the potential invariants to be explored and applied. By combining filters efficiently, players can help to verify that the software is free of security vulnerabilities. Binary Fission also emphasizes community, an important aspect of successful citizen science projects, through integrated chat, active community management, and regular community events.

"The auxiliary Binary Fission feature set is very light, since our goal is to keep players focused on solving problems," said John Murray, Ph.D., program director in SRI's Computer Science Laboratory (CSL) and principal investigator for the overall project. "However, as a citizen science project, our recruitment policy draws in players who are interested in solving cybersecurity issues."

Currently, formal software verification is rarely used because relatively few people have the necessary training in verification techniques. In addition, finding loop invariants in software programs has historically been a challenging task requiring extensive training and insight.

"SRI is well versed in formal software verification, with over a quarter of a century spent assuring that mission-critical computer systems are error-free, secure, and interoperable.

We are pleased to work with our partners in DARPA's highly innovative, creative, and fun program," said Patrick Lincoln, Ph.D., CSL director. "We learned a lot of valuable lessons with our first game of this type, Xylem. For our gaming approach to succeed, we need a more sophisticated game for a more sophisticated audience. We have leveled up our research, and with more automation, interaction, and sophistication, Binary Fission is our best game yet."

Binary Fission is one of five games that DARPA is releasing under its CSFV program. All games, including the first SRI- and UCSC-created game, Xylem, are freely accessible through the Verigames website at http://www.verigames.com/.

UCSC and SRI are also collaborating with researchers at CEA, the French Alternative Energies and Atomic Energy Commission (Commissariat à l'énergie atomique et aux énergies alternatives), to develop tools for software analysis and formal verification that feed into Binary Fission.

This material is based upon work supported by the United States Air Force Research Laboratory (AFRL) and the Defense Advanced Research Projects Agency under Contract No. FA8750-12-C-0225. Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of AFRL or DARPA.

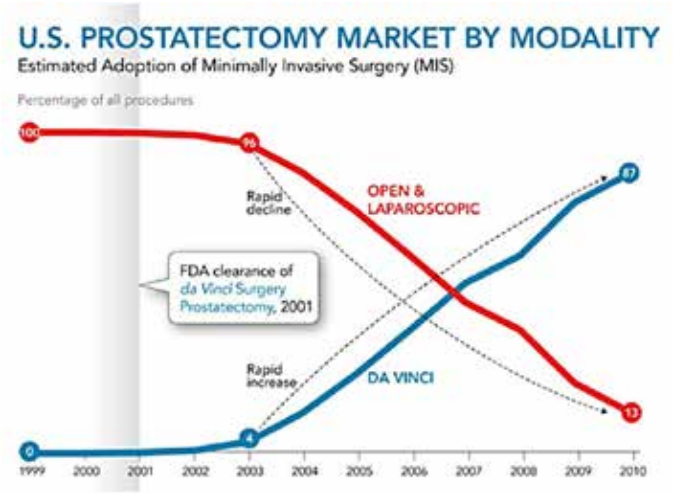
Some Impacts of an SRI-Invented Surgical System

By Don Nielson

In a previous issue of this newsletter (April 2012), Phil Green wrote a short article about the success of the innovative robotic surgical system he created at SRI back in the 1990s. He and his SRI colleagues developed a number of working prototypes of this revolutionary technology before it was licensed to the commercial firm that has become today's Intuitive Surgical, Inc. The principal embodiment of the technology is that company's da Vinci® Surgical System. Details of it can be found on the company's website (http://www.intuitivesurgical.com/).

By chance, I attended a talk recently by the former president of Intuitive Surgical and now chairman of its board, Lonnie Smith. (By the way, Gary Guthart, an SRI engineer who worked on the prototypes and left with the technology to Intuitive, is now its president.) During the talk, I saw some very interesting slides that show how dramatically this technology has come to dominate certain kinds of surgery.

I requested and received copies of several such slides involving prostatectomy and hysterectomy. The chart for the former is shown in the figure; the hysterectomy charts are very similar. Note that the FDA approved the da Vinci® system for prostate surgery at the beginning of 2001. In less than six years, it gained equality with the number of conventional prostate surgeries across the United States, and by 2010 it was being used in 87% of cases! Similar increases were shown for malignant hysterectomies.



As of March 31, 3,317 da Vinci® machines were installed around the world (according to TIME Magazine, July 6-13, 2015, p. 84), and the systems have been used to complete more than 1.5 million surgeries. Although that may not be an enormous number on a world scale, they are making an important impact on a wide variety of surgery types.

This is an instance where creative technology, first created at SRI, was able to proceed into the marketplace with good speed, establish a unique product place, and grow to a commanding presence. Intuitive Surgical's market capitalization currently is about $21 billion.

SRI's Not-So-Obvious Product

By Don Nielson

Apart from SRI's normal fare, a more invisible "product" should make SRI even better known than it is. That other product stems not from SRI's explicit accomplishments but from the atmosphere in which they developed. This unrecognized output is the plethora of companies that SRI people have created—some with tangible SRI help, some with SRI blessing only, and some with mostly no SRI involvement.

This creative output comes, I believe, from the kind of atmosphere SRI maintains and, correspondingly, the kind of talent it attracts. At the project-leader level at SRI, the expectation is that a person will hatch an idea that has revenue potential, sell that idea to a sponsor with enough interest to pay for the work, manage the content of the ensuing work and its costs, interact with the sponsor as the project unfolds, and deliver the promised output to the sponsor's satisfaction. All the above in one bundle is remarkably like entrepreneurship: the starting of new companies.

No one at SRI keeps track of this output except those companies in which SRI has some direct involvement or ownership. No comprehensive list exists of who has left SRI to start a new enterprise—and yet such a list could be one of SRI's important gifts to the world. Looking into this kind of SRI contribution, however, is difficult and produces just isolated examples here and there.

It is instructive to recognize a few of those very purposeful launchings for which SRI is now well tuned and from which SRI has garnered some fame. These launchings are true spin-offs, because SRI had some financial interest in them, usually based on some transferable proprietary interest. Prominent among them would be Intuitive Surgical, the world leader in surgical equipment whose minimally invasive approach separates the surgeon from the patient; Siri, the iPhone virtual assistant; and Nuance Corporation, which specializes in automatic speech recognition.

Apart from these examples are new companies that SRI staff usually form immediately after leaving SRI, often building on the experience they gained while at SRI. Because these companies have no direct affiliation with SRI, we can simply call them "offshoots."

My learning about just one of these offshoots—Etak, Inc.—prompted this note. An article describing its genesis and evolution as a company is at http://www.fastcompany.com/3047828/who-needs-gps-the-forgotten-story-of-etaks-amazing-1985-car-navigation-system. Here is a brief summary.

The story involves an SRI employee—Stan Honey—who became famous for a series of popular, commercially relevant innovations. Those innovations began in the mid-1980s while Honey was still at SRI; the topic was navigation systems. That subject first arose for Honey in an area in which he already excelled: sailboat racing. Nolan Bushnell, the founder of video game maker Atari, owned a yacht that he wanted Honey to sail in a 1983 trans-Pacific race to Hawaii. Because doing so was an around-the-clock effort and they needed to know their position continuously, an onboard navigation system became a necessity. Honey and an SRI colleague, Ken Milnes, built a computer program that used several sensors aboard the yacht to calculate the needed course corrections. During that race, Honey suggested to Bushnell that this task would be easier "if we didn't have all this squishy stuff under us!" He went on to suggest that both the technology and the need existed to do the task on land—for automobiles. Bushnell agreed and said he would fund the effort. By the way: They won the race!

So, Honey began the development of a car navigation system. Because a decade would pass before GPS was developed, Honey's system would work on the basis of digital maps and dead reckoning—the accrual of position information using the auto's tires and a direction-logging system. To design and build that system, Honey, Milnes, and several other SRI technical people left SRI to undertake the enterprise. (Division VP Larry Sweeney would transition later.) Still lacking the needed digital-map expertise, they hired an expert from the U.S. Census Bureau.

Because digital maps were critical for their system, they had to hire lots of people to build them. And because this endeavor was the first of its kind, they created algorithms and other tools to make map extraction as efficient as possible. Another indicator of how far they were in the technological past: The only adequate portable storage medium was the vulnerable cassette tape, which they had to take steps to protect in the heat of a car. Moreover, the dead-reckoning approach demanded periodic reconciliation between the car's estimated position and the digital map. They created algorithms for that reconciliation, too.

They called the company "Etak" (a Polynesian word for "reference points" or "navigation"). They began showing their navigator to the press in late 1984 and selling it in mid-1985 as the world's first commercial car navigation system. But for a variety of reasons, they were able to sell only a few thousand units. I remember taking a ride with Larry Sweeney in a car outfitted with a prototype a bit smaller than the one in the picture. It was such a novelty. And because reading text on its green-on-black screen was difficult, I found it hard to keep my eyes on the road. Still, the navigator was impressive.

As sales waned, Etak shifted to making only the digital maps that it knew every manufacturer would need. At that point, media mogul Rupert Murdoch bought the company in 1989 for $25 million. Etak later changed hands several times, landing at Sony in 1996 for $100 million and finally becoming a part of navigation and mapping company TomTom.

Honey didn't slow down after Etak. In 1996, while at Murdoch Fox Sports, he designed the technology for the "glowing" hockey puck that was more readily visible on TV. When Fox lost its hockey contracts, Honey was able to take the technology and start another company: Sportvision. From there came a string of startling television-viewing innovations: a way to present the first-down line and other features "embedded in the field of televised football," the flight of a pitched baseball and its intersection with an adjustable strike zone, and, most recently, the wonderfully enabling traces on water for the 2013 America's Cup in San Francisco Bay. All these innovations were technically challenging but have had impressive impacts.

So, this story is just one from what must be well over a hundred offshoots from SRI. Here are a few others you might recognize:

Fair Isaac Corporation (1956; Bill Fair and Earl Isaac). Now FICO, it is one of the largest credit-scoring companies in the world.

Raychem (1957; Paul Cook). Raychem began with SRI-derived technology—radiation-treated polymers for wire insulation—and later added shrink-wrap tubing.

Ridge Vineyards (1959; Charles Rosen, Dave Bennion, Howard Zeidler, and Hew Crane). These former SRIers purchased Monte Bello Winery and transformed it into a world-class label: Ridge.

Anderson Jacobson (1967; Reid Anderson with John Van Geen). Anderson and Van Geen marketed one of the first acoustic couplers and the first at 1200 baud. The company exists as CXR in France.

Failure Analysis Associates (1967; Bernard Ross with Stanford colleagues). The company does technical analysis of failure modes and causes. Now, as Exponent, it is worldwide.

Finnigan Instrument Corporation (1967; Robert Finnigan and William Fries). Finnigan and Fries built a smaller, cheaper gas chromatograph. The company is now part of Thermo Fisher Scientific.

Symantec (1979; Gary Hendrix). Symantec started as an AI-based query system and is now one of the largest distributors of utility and security software.

E*Trade (1982; William Porter). This early online discount equity trader is now a very large, full-financial-service company.

Are these companies part of an SRI legacy? You be the judge.

UK Alumni Visit Bletchley Park

By David Gibby

In August 1938, a group of people known only as "Captain Ridley's Shooting Party" arrived at Bletchley Park, a mansion house in the Buckinghamshire countryside. Although they looked like a fairly relaxed party, they were actually members of the British Government's Code & Cypher School who were beginning their job of cracking Nazi codes and ciphers. As their workload grew, about 20 huts were used to house the different teams (which were kept quite separate from each other, working on different tasks). The number of people employed at Bletchley Park itself and elsewhere grew to over 10,000. The most famous of their eventual successes was the cracking of the Enigma system; the story is well told in the recent film *The Imitation Game*.

In 2014 the Bletchley Park Trust began the first phase of an extensive restoration programme, and the place has become a popular visitor attraction (www.bletchleypark.org.uk).

On April 12th, a group from the UK Alumni Association went to see it for themselves and toured the restored huts where the different teams worked, the museum, and other attractions. They were also shown a film, *War of the Birds* (available on YouTube, https://www.youtube.com/watch?v=sZfjbfe5SXM), about the amazing work during the war done using pigeons.

Bob Morgen, who organized the UK alumni reunion, took some photos afterwards. In the group photo are (left to right) Nick and Gillian Collin, Nick Sturcke, Chris and Anne Saunders, Maurizio Petitbon, and Sally Sturcke.

Office of Alistair Denniston, the head of the school.

Typical codebreaker work room.

Nick and Gillian Collin and Maurizio Petitbon in front of the mansion.

Taxi Tales

In this issue, we're taking two very different taxi rides with Peter Weisshuhn in New York.

New York

By Peter Weisshuhn

New York cabbies are renowned for their rudeness. My wife and I experienced this firsthand many years ago. Returning from vacation in Mexico to our then home in Montreal, we had flown into JFK with TWA. We had been delayed and had little time to make the connection with Air Canada—in a different terminal. Rushing out of the TWA terminal, we hailed a cab and stowed our luggage in the trunk. When we asked the driver to take us to the Air Canada terminal—which turned out to be about a mile away—he exploded in rage. Presumably, and not unreasonably, he had expected a full fare into the city. Once we could make ourselves understood, we explained the urgency of our situation and the fact that we had no idea where the Air Canada terminal was in this huge airport.

We feared that he would throw us out, but our heavy luggage must have deterred him. So, still fuming, he drove us to the other terminal. But instead of getting out and helping with the bags in the expectation of a big tip (which he would have got), he stayed in the car and unburdened himself of a stream of curses and expletives.

I lifted our bags out of the trunk and paid him the metered fare, not a penny more. At this, he was convulsed with a new fit, which caused me to leave the trunk and back doors open, forcing him to get out to close them. He was now purple, fighting for breath.

Well, we just made our connecting flight and had a good laugh, but we may have taken years off that poor man's life. Hopefully, the satisfaction he derived from his outbursts outweighed the tip he denied himself. Not all rewards are of the monetary kind.

Years later, I was back in New York City. This time, my driver was utterly different. She was a small, delicate looking, grey-haired lady. She might have been a grandmother. I wondered how one so frail, so vulnerable, would ever want—or be allowed—to drive a cab in that tough city. This was well before Rudolph Giuliani became mayor and declared war on crime. So I asked her. No, she was not just substituting for someone. This was her cab and she had driven it for many years.

Had she ever had trouble? Oh yes, she had. She had been robbed three times, the last time twice in the same day. That was last year. The first robber had taken all her money. She had had only two fares before the second one struck. When she handed him her purse with its paltry contents, he grabbed her by the throat. He squeezed so hard that he crushed her larynx. She stayed in hospital for five weeks, and her voice was never quite right again.

So why on earth was she carrying on? *"It's a living."* That's all the explanation she volunteered. I was left to wonder: was this a case of the frontier spirit that conquered the West? Or was it the sheer bloody-mindedness that can afflict the old? But then, does it matter?

Sir Nicholas Winton Dies at Age 106

Readers may remember previous newsletter articles about Sir Nicholas Winton by our late UK correspondent Peter Miles (August 2009 and August 2011 issues). Peter was one of the more than 650 Czech Jewish children taken by train from occupied Prague to England in 1939, saving them from being sent to Nazi concentration camps. Sir Nicholas, a London stockbroker at the time, took on the dangerous task of making all the arrangements in Prague and raising funds to enable children to participate in Britain's Kindertransport program, which authorized unaccompanied Jewish children up to age 17 to be admitted into England.

Sir Nicholas's heroic work was all but forgotten until his wife found an old scrapbook in the attic with photos and documents detailing the effort, including the names of the children. Honors and awards followed once the story became known, especially through a BBC documentary and an Emmy-award-winning film about him. He was knighted by Queen Elizabeth II in 2003, and in 2014 he received the Czech Republic's highest honor, the Order of the White Lion, from Czech President Milos Zeman. The Czech government nominated him for the Nobel Peace Prize in 2008. A statue of Sir Nicholas stands at Prague's main railway station, and another statue stands at the railway station of the town of Maidenhead, England. Other memorials commemorating the children of the Kindertransport have been placed at London's Liverpool Street Station, where the children arrived in England.

Sir Nicholas died peacefully in his sleep on July 1, at age 106.

Capp Spindt

Does life imitate art? For Capp Spindt, maybe so.

Currently in a Vacuum Microelectronics Director Emeritus position at SRI, Charles A. (Capp) Spindt says that he landed his first internship—in 1959 at Stanford Research Institute—because his interviewer saw a resemblance between Capp and Steve Canyon, the eponymous hero of a long-running American adventure comic strip. Steve Canyon, an easygoing veteran adventurer with a soft heart who was running his own air transport business, returned to the U.S. Air Force during the Korean War and stayed in the military for the remainder of the comic strip's run.

There is a resemblance!

Likewise, lookalike and easygoing Capp served in the Air Force as a fighter pilot before he finished his electrical engineering degree at San Jose State University. Following his service in the Air Force and now working as an intern at SRI, Capp received a compliment from his boss: "His best feature was that he wasn't handicapped with a higher education." (Capp did earn a Ph.D. in 1990!) More than once his boss told him that an idea he was describing wouldn't work—before Capp could finish saying how well it had worked! A half-century later, Capp is still working part-time in an emeritus position in the same group and with the same technology.

Capp is one of the world's foremost experts in nanofabrication tools and technology as applied to vacuum micro and nano devices. His credits include inventing the Spindt cathode, a cold cathode based on the phenomenon of field emission of electrons from metals when subjected to fields on the order of 10 million volts per centimeter. Capp developed means for fabricating microstructures capable of producing the huge electric fields necessary for field electron emission with less than 100 volts. His invention has had application to flat-panel displays, traveling wave tubes, and cold ionizers for mass spectrometers and as plasma contactors for charge management on satellites. Capp is the author of 18 patents to date. While directing the Vacuum Microelectronics Program at SRI, Capp cofounded the International Vacuum Nanoelectronics Conference in 1988 with a colleague from the Naval Research Labs. The conference brought attention to the technology, and articles featuring Capp's work have appeared in many publications. At age 83, Capp expects his publications output to continue apace.

Capp's first term at SRI extended for just more than 40 years, from June 19, 1961, to February 9, 2002. SRI rehired him two days later, and his second term continues to this day, although at a reduced work pace. He still goes to the office and helps mentor new interns. How many other SRIers can point to a single-company career extending for 54 years?

SRI honored Capp as an SRI Fellow in 1992. He was inducted into the Alumni Association's Hall of Fame in 2004.

Capp was married for 30 years and has two children. His daughter lives in Seattle with her husband, who works for the National Oceanic and Atmospheric Administration; they have two teenage daughters. She also runs her own jewelry business. His son has two daughters and one son and lives in Menlo Park. His son has a Ph.D. in applied physics and is the Director of Research for a Silicon Valley startup company.

Does life imitate art? More likely: Capp has translated art—and science—into a highly successful life.

This article is based on an article in the June 2015 issue of Trail Tips*, the newsletter of Sons in Retirement, Mission Trail Branch 35, Los Altos.*

2015 Annual SRI Alumni Reunion in Menlo Park: September 17

SRI Alumni Association members who will be in the Bay Area on September 17 are encouraged to come to the annual reunion. It will be held in the International Building from 4:00 until 7:00 p.m. You will hear about the state of SRI from John Prausa, Chief Operating Officer, and Manish Kothari, President, SRI Ventures, will give a talk entitled *Recent advances in robotics: Breakthrough work being done by SRI*. A special feature of the reunion will be the induction of one or more SRI alumni into the SRI Alumni Hall of Fame. You can count on sumptuous hors d'oeuvres, excellent drinks, delightful conversation, and plenty of door prizes.

The charge is $25 for each attendee. An invitation to the reunion and sign-up sheet will be mailed separately to all association members, including those who receive the newsletter electronically. Please complete the sign-up sheet and return it with your check by September 11. You may also print copies of the sign-up form from the alumni website.

Alumni Association Membership Renewals Due by October 15

It's almost time to renew your SRI Alumni Association membership for 2016. Membership renewal forms will be mailed to association members in September. The fee is $20 per member, due by October 15, 2015. All members who renew by mid-November will be included in the 2016 Alumni Directory, which will be issued in January.

Member Profiles

This issue contains the first in what we hope will become an ongoing series of member profiles. This is the current incarnation of a section called "What Are They Doing Now?" that appeared in the newsletter in earlier years. We solicit your contributions, whether your own profile or that of another Alumni Association member. Everyone has a story to tell—tell us yours!

The SRI Alumni Association welcomes new members:

James Beeby
Peter Gibb
Dennis L. Holeman
Jian Peng
Joel Ruffin
Scott C. Sharp

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

Directory Addendum

The enclosed directory addendum (covering the period April 1, 2015, to July 31, 2015) contains new members and corrections. Please add it to your 2015 Directory.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Robert Dressler

Robert "Bob" Dressler a former engineering staff member at SRI, died on May 3, 2015, at age 75, while on vacation in Vienna.

Bob grew up in Valley Stream, New York, and loved learning from an early age. His hard work and intellectual curiosity were rewarded with an undergraduate scholarship to the engineering program at Rensselaer Polytechnic Institute, followed by a Hughes Aircraft Fellowship for the doctoral program at Stanford University, through which he earned a Ph.D.

In 1985, Bob brought his intellect and creativity to SRI, where he had a six-year career as a Research Engineer in the Information Science and Engineering Division. At SRI and other companies throughout his career, he was known for inspiring teamwork, providing sound advice, and maintaining patient focus in all his projects.

In addition to his intellectual pursuits, Bob was very athletic. He loved all sports and sporting events, both as a participant and as a fan. He was a loyal supporter of Stanford athletics and a diehard 49ers fan. He spent his summers waterskiing and swimming.

Bob is survived by his wife, Carol; children Allison, Lindsay, Jenny, and Adam; grandchildren Logan and Beau; sister Lynne; and his nieces and nephews.

Merle Evers*

Merle Evers, a former industrial consultant at SRI, died in Palo Alto on April 16, 2015, at age 94.

Born in Schleswig, Iowa, Merle was a graduate of Iowa State University and Stanford Business School. He began his long and successful SRI career in 1955. In the Menlo Park office, he was Director of Planning and Administration in the Industrial Consulting Division. Around 1982, he transferred to SRI's office in Croydon, England, as Director of Industrial Consulting in the Industrial Management and Economics Group. He worked there until his retirement in 1985.

Merle's later years were divided between his lifelong passion for travel and his devotion to family. He is survived by children Robert, John, and Nancy; 7 grandchildren; and 10 great-grandchildren.

Clyde Jeter

Clyde Jeter, a former SRI staff member, died of a heart attack on May 31, 2015, at age 92.

Born and raised in South and North Carolina, Clyde joined the U.S. Navy in October 1941, at age 18. After basic training, he was sent to a submarine base in Hawaii. When he didn't qualify for submarine duty, he was assigned as a cook in the officers' mess—a common assignment for African Americans in the military in those days. During that assignment, he had a memorable encounter with John F. Kennedy, then an Ensign with a PT flotilla based in Hawaii. Later, he saw action on ships in the Solomon Islands, the Philippines, and Leyte Gulf. After the war, he was stationed at Alameda Naval Air Station and at Moffett Field, where he again met John Kennedy, who recognized him from their previous meeting. During his time in the service, Clyde also had occasion to meet Presidents Truman and Eisenhower. Clyde's first-person account of his experiences appears as a chapter in *Voices from the Pacific War: Bluejackets Remember*, by Bruce M. Petty (Naval Institute Press, November 2003).

After retiring from the Navy in 1973, Clyde joined SRI, where he served as a Janitor for two years before taking a custodial position at Ravenswood High School in East Palo Alto. At the school, he mentored many young men and became an unofficial counselor and guide for those who felt they needed his advice and supervision.

Clyde is survived by his daughter, Margaret, and by grandchildren Yolanda and Joey.

Donald Lauriente

Donald Lauriente, a former SRI staff member, died in Mesa, Arizona, on May 8, 2015, at age 77.

Born in British Columbia, Canada, Don attended the University of British Columbia, where he earned a B.A.Sc. degree in metallurgical engineering. After graduation, he joined Cominco Ltd., a Canadian mining company, where he worked for 20 years. In 1981, he began working as a consultant, providing a broad range of services to the mining, chemical, fertilizer, and agricultural industries. In 1984, Don joined SRI in Menlo Park as a Senior Consultant and Business Manager – Fertilizers. While at SRI, he was the principal author of many reports on fertilizer topics in the *Chemical Economics Handbook*. He left SRI as a Senior Consultant in Facilities Engineering in 1993, but he contracted to continue managing SRI's fertilizer consulting business while reactivating his own consulting business in Vancouver, B.C. During the eight years of that arrangement and afterward, he led numerous single-client and multiclient projects on fertilizer-related industries.

In retirement, Don divided his time between Olympia, Washington, and Mesa, Arizona. His passions in life were family, friends, and food. He also enjoyed sports, including hockey, baseball, sailing, and skiing.

Don is survived by his wife, Ann; daughters Katherine, Diana, and Jacinda; grandchildren Dylan, Joseph, Joshua, and Davin; sister Corinne; stepchildren Kevin, Dean, and Dawn; step-grandchildren Christopher, Taylor, and Andrew; step-great-grandson Jackson; and nephews Scott, Tom, and their families.

John Meloy

John Meloy, a former SRI staff member, died at home in Mariposa, California, on May 17, 2015, at age 78.

Born and raised in Wisconsin, John grew up with a mix of academia and nature.

After graduating from Madison West High School, he enlisted in the U.S. Navy. As a communications technician, he rose to the rank of Chief Petty Officer in six years.

John earned his bachelor of science in electrical engineering at Purdue University in 1965. After graduating, he was commissioned as an Ensign in the regular Navy. In 1969, John and family moved to Monterey, where he attended the Naval Postgraduate School and pursued advanced degrees in electrical engineering. His final Navy jobs were in program management at the Naval Security Group Headquarters in the Washington, D.C., area.

John retired from the Navy in 1975 and settled his family in Sunnyvale, where he went to work for ESL Inc. In 1980, John joined SRI as a Senior Research Engineer in the Geoscience and Engineering Center, where he managed a number of defense-related projects and programs.

After retiring in 1995, John moved to Mariposa, where he joined the Sheriff's Community Organized Policing Effort (SCOPE) and Search and Rescue (SAR) volunteer teams. John directed the Sheriff's Project Lifesaver team, dedicated to locating lost wanderers, from its inception in 2004 until 2011.

John is survived by his wife, Diana; children Stacey, John Jr., and Trena; and grandchildren Monica, Caroline, Lola, and Ronan.

Kitta Reeds*

Clarissa "Kitta" Reeds, former publications manager and editor at SRI, died of cancer in Eugene, Oregon, on May 16, 2015, at age 79.

Born in Augusta, Georgia, Kitta attended William and Mary College and graduated from UC Berkeley. She joined SRI in 1964, became a tech writer/editor in 1970, and retired in 2000 as Manager of Group Publications for SRI's Physical Sciences Division, after editing thousands of SRI proposals, reports, and other documents. A humorous account of her life as an editor appeared in her book *The Zen of Proposal Writing* (Three Rivers Press, 2002).

In addition to writing and editing, Kitta streamlined the proposal process to relieve the researchers of all the details of proposal preparation except writing of the technical sections. She also was the first to put all the contractual provisions for proposals online so that the Business Office could prepare that part of proposals easily. Both during her time at SRI and afterward, she designed and led workshops on writing winning proposals. She will be remembered for her blue pencil and her fierce insistence on correct grammar and punctuation, as well as for her quick wit, her vibrant sense of humor, her crossword puzzle expertise, and her no-nonsense approach to work.

Kitta is survived by daughters Jenny and Maia; grandchildren Stephen, Dylan, and Joanna; son Kevin and his daughter, Chelsea; daughter-in-law Diane; and sisters Barbara and Marlys.

Judith Sheehan

Judy Sheehan, a legal specialist at SRI, died suddenly and unexpectedly on May 25, 2015, at age 62.

Born and raised in San Francisco, Judy attended St. Anne School and Presentation High School and received an A.S. degree from Cosumnes River College in Sacramento. Before joining SRI in 2010, she worked at NASA Ames, Veterans Administration Hospital, and Syntex/Roche. At SRI, she was a Senior Regulatory Compliance Specialist in the General Counsel's office. In that position, she had led SRI's human subjects (IRB) review activities for several years, and she consistently received very high praise for the quality and timeliness of her work.

Outside the office, Judy was a very active member of a Saturday morning walking group consisting of friends from Roche, four of whom are current or past employees of SRI. An animal lover, she had been on the board of the Northern California branch of the American Association for Laboratory Animal Science since 1994, much of that time as the executive secretary.

Judy is survived by siblings Mary, Barry, Daniel, and Bill; nephews and nieces Kevin, Julie, Brian, and Katie; and her beloved dog, Tink.

Ko Suzuki*

Ko Suzuki, a former information technology consultant and executive at SRI, died in Mountain View on May 21, 2015, at age 84.

Born in Japan, Ko immigrated to the United States in the 1930s and attended George Washington University in Washington, D.C., where he earned a Bachelor of Applied Science (B.A.Sc.) degree in economics and statistics. After working at RCA in New Jersey, Ko was hired by Walt Disney Productions as a consultant on information and computer technologies. While working on the development of Walt Disney World in Florida, Ko was brought in to create digital graphs and equipment used in the computer scenes in the 1969 movie *The Computer Wore Tennis Shoes*.

Between 1976 and 2002, Ko held a variety of information management positions at SRI, ranging from Senior Management Systems Consultant to Vice President of the Information Technologies Practice. After leaving SRI, he continued consulting on information technologies with SRI Consulting, CompuCom, and finally as President of his own consulting company, Suz Tech.

Until the end, Ko was an avid reader of business and technology publications and a mentor and friend to many people. On the news of his death, numerous condolences came in from around the world.

Ko is survived by his wife, Margaret; son Mark; daughters Nina and Cathy; grandchildren Matthew, Mia, Malcolm, Abby, Chloe, and Grace; and sisters Noriaki and Toshiko, who live in Japan.

*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, Klaus Krause, Judy Lhamon, and Leif Schaumann
Design & layout: Linda Hawke-Gerrans