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Sandia corrals four R&D 100 Awards

Winners in photovoltaics, water purification, grid energy, and RF communications
By Neal Singer

Sandia researchers — competing in an international pool of universities, corporations, and government labs — captured three prestigious R&D 100 Awards in this year’s contest, and were co-winners of a fourth.

R&D Magazine presents the awards each year to researchers whose editors and independent judging panel determine have developed the year’s 100 most outstanding advances in applied technologies.

The awards, with their focus on practical impact rather than pure research, reward entrants on their products’ design, development, testing, and production, and have been called “the Oscars of Invention” by the Chicago Tribune.

DOE Secretary Steven Chu said, “The Department of Energy’s national laboratories and other sites are at the forefront of innovation, and it is gratifying to see their work recognized once again. Their cutting-edge research and development is helping meet our energy challenges, strengthen our national security and enhance our economic competitiveness. I congratulate our R&D 100 award winners.”

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LM Voice employee survey results . . . Largely positive with a few areas of concern

Senior management will develop specific actions to address biggest concerns
By Bill Murphy

The numbers from the 2011 LM Voice employee survey conducted at Sandia during April have been tallied and analyzed, and the results are mostly positive.

For more information
For more information about the LM Voice employee survey results, see these related links on Sandia’s TechWeb:
Paul’s videostream discussing results
http://tiny.sandia.gov/hesz5
Change at Sandia website
http://info.sandia.gov/Change_Sandia/

As will be the case with just about any survey, some numbers — a few, not many — stand out to Sandia’s senior management.

In remarks videostreamed to all Sandians this week, Labs Director Paul Hommert noted that the survey results have been posted on the Change at Sandia website.

(Continued on page 4)
That’s that

The Sandia results of LM Voice, Lockheed Martin’s employee survey, are in and are largely good news. The responses from employees on the vast majority of questions are quite positive, and with almost half the Labs’ population participating, that’s positively reassuring. All told, the survey reflected frustrations, too: issues regarding pay and benefits and the performance management process didn’t fare as well as other questions in the survey, but even there, the results weren’t that bad. On a 1- to-5 scale, those issues scored in the 3 to 3.5 range, which is considered “neutral.” In remarks videotaped to employees this week, Labs Director Paul Hommert acknowledged that the pay/performance management issues are a concern and vowed that his team will address them in a way consistent with the Labs’ values.

Now, I don’t know how much linting our management has to address pay and benefits (my hunch is probably not as much as they — or we employees — would like), but they can tweak the performance management process and I bet they will. I don’t think I’m breaking any new ground in observing that the current process isn’t liked and hasn’t been for a long time. And it’s not growing in affection as time goes by. In fact, the responses to questions about those issues are trending downward. The survey results this year reinforced the notion that a lot of employees don’t think the process is fair or equitable. With these results, a lot of employees are saying, “I can’t take it anymore.”

Again, I ought to emphasize that the survey scores about those issues weren’t bad, but they are trending downward — a direction you don’t want to go — and in comparison to the answers on most of the other plus questions, the go-so scores on the pay and performance management issues are conspicuous outliers.

For senior management, in particular, the results of the survey, taken as a whole, are surely welcome. In a year of pay freezes, of changes to the pension formula and health insurance plans, and of the general feeling of unsettledness that goes along with fundamental change, I would guess that our leadership was braced for the worst. The survey would give employees a chance to vent their frustrations across the board, and there’s that. I think I now know why. One question in the survey asked respondents to rate the extent to which they agreed with the statement: “I am proud to work at Sandia National Laboratories.” And the vast majority of respondents agreed, typically with that statement.

At the end of the day, that Sandia pride counts for a lot, trumps a lot of other frustrations. And that pride is well-founded. When the nation needs us, we’re there. Deepwater Horizon? We were there. The Fukushima reactor crisis, which could have ultimately had an impact on the US in a variety of ways? We were there. Guaranteeing the viability of the nation’s ultimate strategic deterrent? We’re there every day. Developing answers to the nation’s long-term energy needs? Supporting the military — including especially the men and women in harm’s way? Yep. Providing solutions to emerging threats to the nation’s homeland? That’s us. Wherever there’s a technical dimension to a national challenge we’re there.

I suspect I sound like a company spokesperson. If that’s the case, so be it. I’ll tell you this: I can hardly count the number of times over the past 16 years that I’ve felt a swell of pride when, in the midst of some urgent crisis, I tell my parents, my siblings, my friends, “Oh, yeah: we’re helping out on that.” Want an immediate example? My brother sent out an email the other day noting that he and his wife are headed to Kauai for a vacation. I replied casually, “Cool: we’ve got a facility out there supporting the missile defense program.” Ho hum. Just another day at Sandia.

I don’t do any of the great technical work here, but I am as proud as I can be to be part of the mission, even by association. So when I take surveys like LM Voice, I may use the opportunity to red-flag issues that concern me, but also to recognize the lens of my understanding of pride in who we are, where we come from, what we do, and who we work for.

See you next time.

— Bill Murphy (505-845-0845, MS0165, wtmurph@sandia.gov)
Exploring the intersection of biofuels and electric vehicles

By Patti Koning

Biofuels and electric vehicles don’t appear to have much in common, other than both being alternative transportation technologies. They don’t have the synergy of biofuels and combustion engines, for example — biofuels won’t power an electric vehicle — and could even be considered competing technologies. Last October, a Sandia-led workshop, Transitioning the Transportation Sector, held in Crystal City, Va., examined the intersection of the two technologies and the evolving opportunities and challenges found there. Organized by Sandia, the workshop brought together leaders from industry, government, nonprofit organizations, and the R&D community and explored technical, economic, and environmental considerations that provide context for the development of these alternative transportation technologies in tandem.

“Many reports highlight the need for a portfolio of technologies to address our national goals for clean, secure, and sustainable transportation. These reports tend to examine the challenges associated with each technology independently, without considering how they will interact as they evolve. The goal of this workshop was to probe this intersection of seemingly parallel technologies,” says Dawn Manning, 8114, one of the workshop’s organizers.

The 36 workshop participants spanned the automotive, fuel, and electric power industries; federal and regional government agencies; academia; investor and legal communities; biofuels research and development; and climate and environmental organizations. The discussion was framed by two questions:

• What is the outlook for biofuels and electric vehicles given technology, resource, and carbon challenges and opportunities?
• How will regional issues and consumer preferences influence the evolution of biofuels and electric vehicles?

As biofuels and electric vehicles each come with their own set of policy and technology issues, the community has tended to address issues directly related to one technology separately from the other. The workshop group also struggled to discuss the evolution of the two different technologies. But the group did acknowledge the importance of having integrative conversations to consider the broader context of co-evolution of multiple technology options needed to reach the nation’s energy objectives. They also found that a broader systems approach with better analytical assessments — given the diversity of energy options — is needed to consider the interplay of biofuels and electric vehicles.

A diverse set of development paths

Workshop participants also agreed that it is too early to pick winners and losers. Narrowing the field prematurely might result in the loss of potentially successful and innovative technologies. Instead, the country should continue on a diverse set of technological development paths to develop the multiple options needed for success. Intermediate solutions, like hybrids and cellulosic ethanol, can serve as pathfinders for the next-generation technologies that have yet to be developed. Furthermore, stretching petroleum supply by moderating demand through more efficient technologies, like boosted engines, can provide more time for the transition to new technologies.

The group explored the concept of regional testbeds and pilots, such as electric vehicle charging infrastructure and large-scale demonstration projects for biofuels. Consensus was reached that such activities should take place within the US, rather than in areas in which vehicle infrastructure is less entrenched, such as India or China, to maintain the country’s long-term economic prosperity and national security.

Investing in demand was another recommendation from the workshop. The group found that it is not enough to invest in technology development for electric vehicles and biofuels, that demand may also be fueled by lowering the cost of clean fuels, setting a price for higher carbon options, or creating other sources of value for these options. This was highlighted in the luncheon address by Dave McCarthy of the Alliance of Automobile Manufacturers, A US and International View of the Evolution of the Automobile: How, Where, and When Will Biofuels and Electricity Substitute for Oil?

Another recommendation was to consider global solutions. The solution might be large, with the US and China combined accounting for about half of new vehicle sales, and specialized markets may exist for some technologies, such as microelectric vehicles for densely populated metropolitan markets. Many of the workshop participants agreed that the broader portfolio of vehicles will need to be adopted around the world since the large automakers will not tailor to numerous, diverse niche markets.

A separate issue is the potential for biofuels and electric vehicles to create marketplace fragmentation, which does not exist with a single, nationally deployed fuel. For example, electric vehicles may be more degradable in moderate climates because of temperature constraints imposed by battery performance. Regional biomass availability and powerful agricultural interests may make biofuel use more likely in the Midwest and possibly the southeastern US.

Joe White, automotive editor for the Wall Street Journal, gave the concluding remarks. He addressed the challenges faced by electric vehicles and biofuels in competing with cheap gasoline, which he described as the enemy of all alternatives. He pointed out the mutual self-interest that has evolved between fuel companies and automakers.

“Shifts toward biofuels and electric vehicles will require new relationships with potentially unfamil- iar partners,” said White. He also cautioned that automakers and fuel companies will not compete head-to-head since each will have niche markets.


The significant contributions that Sandia regularly makes to the homeland security mission was a consistent theme running through presentations staged over the two-day visit by Tara O’Toole, undersecretary for science and technology at the Department of Homeland Security.

Hosted by Div. 6000 VP Jill Hruby’s Interna- tional, Homeland, and Nuclear Security Management Unit, the visit provided O’Toole a deep dive into multiple Sandia programs that address a wide range of issues as biodetection and catastrophic incident management as well as securing the US border, critical infrastructure, cybersecurity, and the aviation sector.

The undersecretary’s visit included a stop at Sandia’s Explosive Field Test facility, where explo- sives expert Kevin Henning (5434-1), left, shows O’Toole, second from left, and others hypergolic reactions, in which common household chemicals initiate explosives by igniting spontaneously when mixed. During her visit to the facility, O’Toole learned about the aviation security research that Sandia is conducting in partnership with Lawrence Livermore and Los Alamos national laboratories. (Photo by Randy Montoya)
Kudos to first-line managers

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insights about the state of mind of Labs employees.

responses to specific questions provided useful management issues scored lowest, at a deeper level, scored highest in the survey and pay/performance development — elicited scores in the “neutral” range.

ful of questions — mostly those regarding issues of glaringly in the “excellent” or “favorable” range. A handful of actions addressing your concerns into the goals and milestones that will forward or embed toward this objective. You’ll be hearing more on all of that as the summer progresses.”

The LM Voice employee survey is conducted across the Lockheed Martin Corp., to ascertain the health of the company. The survey takes the pulse of employees in four general workplace-related areas: Employee experience; leadership; excellence; diversity and inclusion; and ethics and integrity. For tracking purposes, the questions asked in the 2011 survey are mostly identical to those asked in 2009.

‘We will use what we have learned’

In 2011, 46 percent of Sandia employees completed the survey, the same percentage that completed the survey in 2009, the last time it was conducted. Kim Sawyer, deputy director and executive Vice president for mission support, commented, “I am pleased that nearly half of all Sandians responded to the LM Voice employee survey. I thank everyone who took the time to share their perspectives. We will use what we have learned to help make Sandia an even more engaging and inclusive environment.”

“It’s not just about what my manager says; it’s how she or he backs it up or starts to make it possible for me to get the job done and achieve my career goals,” Kim Sawyer said. “I am delighted with your comments regarding your direct managers,” he said. “I overwhemingly felt your manager establishes a clear vision for the future, creates an environment that allows you to perform at your best, and ensures solutions are developed to meet the customer’s evolving needs.”

A few sample questions (and the scores) related to direct managers:

- My manager will keep his/her promises (4.05)
- My manager treats employees fairly (4.04)
- My manager sets a good example of ethical business conduct (4.24)
- My manager makes sound business decisions (3.95)
- My manager establishes a clear vision for the future (3.62)

All these responses — and several more in the same subject area — trend upward since the last survey.

Sandia’s culture of innovation

One area to carefully watch, and it’s a significant one, was highlighted by the question: “In my workgroup, we are encouraged to be flexible to come up with innovative solutions.” The score on the question was 3.96, very near the “excellent” range. However, the score represents a downward trend in an area that is at the very heart of the Sandia culture, the 2009 score was 4.06. The downward trend on the subject of innovation also showed up in the response to another question: “I believe in the ability of my work group to develop innovative work products and ideas.” That response scored 4.05, still in the excellent range, but down a statistically significant .09 points from its 2009 score of 4.14.

The survey addressed an area referred to as “attachment,” which it defined as “the degree to which an employee feels the company is an important part of his/her life.” In four questions related to attachment, three showed a statistically significant upward trend. The questions: Sandia has a great deal of personal meaning to me (3.88 in 2011 vs. 3.74 in 2009); I fit in well with the Sandia culture (3.80 vs. 3.72); and, the values and culture of Sandia reflect my own values and personality (3.88 vs. 3.68).

While Sandians express a solid attachment to the Labs, a response to one question raises concerns for recruiting and retention efforts. The question, “I would recommend Sandia as a great place to work,” scored 3.72, down from 3.83 in 2009. On the other hand, the ques- tion, “I hope to continue working at Sandia for another five years or more (not considering retirement)” earned a score of 4.01, which is in a neutral “excellent” range.

Performance management and rewards

If there was a sore point revealed in the survey it is not a new one: Sandians are largely ambivalent about issues related to performance management and rewards. In several pointed questions related to the issue, most responses fell within the “neutral” range, meaning they garnered scores of 3.0 to 3.40.

Those scores place the issue solidly in the “areas for improvement” category. Identifying a challenge, the trend was downward on responses to several questions in this subject area, specifically to questions related to the perceived fairness of the performance management and rewards distribution process.

Some other conclusions to draw from the survey:

- The perceptions regarding diversity and inclusion at Sandia were uniformly favorable.
- Perceptions about trust were mixed; first-line managers and co-workers earned solid levels of trust. However, the question: I trust Sandia to treat me fairly earned a 4.2 score, putting it in the neutral range. Yes, observed above, issues related to ethics and Sandia’s ethical culture scored extremely well, mostly in the excellent range; senior management fared well here, showing upward trends in areas related to setting good examples of ethical business conduct.

Sandians to a very large extent consider their co-workers to be ethical in their business conduct.

- Perceptions about the quality of work/life balance at the Labs are trending upward, 3.92 in 2011 — nearly in the excellent range — vs. 3.86 in 2009.

One question in the survey perhaps encompassed all the other questions in a nutshell. It garnered a score of 4.16, indicating that respondents “strongly agreed.” The question: “I am proud to work for Sandia National Laboratories.”

Of the 88 posed questions in the survey that could be answered on a 1-to-5 scale (with 5 representing the most positive response), all but 10 showed either an upward trend toward the positive over the past two years or remained statistically neutral.

In the analysis, a score of 4 to 5 is considered excellent; a score of 3.0 to 3.49 is considered neutral (an area for improvement), and a score of less than 3.0 is considered unfavorable, an issue requiring immediate attention.

In the 2011 survey, the responses came overwhelm- ingly in the “excellent” or “favorable” range. A handful of questions — mostly those regarding issues of performance management/rewards and career development — elicited scores in the “neutral” range.

While at the macro level, ethics-related issues show up in the survey, the same percentage that completed the survey in 2009, the last time it was conducted. Kim Sawyer, deputy director and executive vice president for mission support, commented, “I am pleased that nearly half of all Sandians responded to the LM Voice employee survey. I thank everyone who took the time to share their perspectives. We will use what we have learned to help make Sandia an even more engaging and inclusive environment.”

We will use what we have learned to help make Sandia an even more engaging and inclusive environment.”

— Deputy Labs Director and Executive VP for Mission Support Kim Sawyer
Researchers at DOE facilities received 36 awards. Sandia’s sister defense labs in NNSA — Los Alamos and Lawrence Livermore national laboratories — won three and two awards, respectively.

Sandia’s four winning entries are:

**Microresonator Filters and Frequency References**, submitted by Sandia researcher Roy Olsson III (1749). “The next generation of mobile computing devices will require advanced radio frequency (RF) filter and oscillator banks covering multiple RF bands,” says Roy. “Our miniature acoustic resonators fill this need.”

Microresonators are small acoustic resonators that have highly precise sound and are manufactured using the same technologies that mass-produce integrated circuits (IC).

“Microresonator technology allows hundreds of filters and oscillators operating over a wide (32kHz – 10 GHz) frequency range to be realized on a single IC chip. They will perform RF filtering and frequency synthesis functions in next-generation wireless handsets, cell phones, and other wireless devices, offering higher performance and frequency diversity in a smaller package and at a lower price than current technologies. These miniature acoustic resonators fill this need.”

— Researcher Roy Olsson III

**Microresonators for Water Purification**, submitted by Sandia project lead Susan Rempe (8635), jointly with Sandia Fellow and University of New Mexico professor Jeff Brinker (1002) and Jing-Bing Jiang of the University of Illinois at Urbana-Champaign, submitted by Sandia project lead Susan Rempe (8635), jointly with Sandia Fellow and University of New Mexico professor Jeff Brinker (1002) and Jing-Bing Jiang of the University of Illinois at Urbana-Champaign, jointly with Sandia Fellow and University of New Mexico professor Jeff Brinker (1002) and Jing-Bing Jiang of the University of Illinois at Urbana-Champaign. The new biomimetic membranes purify water through reverse osmosis (RO) technology. “We made a synthetic membrane that mimics the nanoscale design features of natural water purification channels,” says Susan. “By doing so, our initial membranes achieved a 10-fold improvement in water purification efficiency compared with state-of-the-art RO membranes.”

“Biomimetic Membranes for Water Purification,” submitted by Sandia project lead Susan Rempe (8635), jointly with Sandia Fellow and University of New Mexico professor Jeff Brinker (1002) and Jing-Bing Jiang of the University of Illinois at Urbana-Champaign. The new biomimetic membranes purify water through reverse osmosis (RO) technology. “We made a synthetic membrane that mimics the nanoscale design features of natural water purification channels,” says Susan. “By doing so, our initial membranes achieved a 10-fold improvement in water purification efficiency compared with state-of-the-art RO membranes.”

The selective, high-flux desalination membranes are the world’s first commercially available, high-voltage, high-frequency, high-current, high-temperature, single-chip SiC-based thyristors. Their performance advantages are expected to spur innovations in utility-scale power electronics hardware and to increase the accessibility and use of distributed energy resources. Stan worked with Ranbir Singh of GenSilC.

“Ultra-high-voltage Silicon Carbide (SiC) Thyristor,” submitted by Sandia researcher Stan Atcity (6111). This DOE Energy Storage Systems project, managed by Sandia in partnership with GenSilC Semiconductor Inc. and the U.S. Army Armament Research, Development and Engineering Center (ARDEC), has developed an ultra-high-voltage silicon carbide thyristor. The semiconductor device allows next-generation “smart grid” power electronics system to be built up to 10 times smaller and lighter than current silicon-based technologies. These packaged power devices are the world’s first commercially available, high-voltage, high-frequency, high-current, high-temperature, single-chip SiC-based thyristors. Their performance advantages are expected to spur innovations in utility-scale power electronics hardware and to increase the accessibility and use of distributed energy resources. Stan worked with Ranbir Singh of GenSilC.

“R&D 100,” submitted by Sandia researcher Ward Bower (6111) jointly submitted this invention with lead researcher Mahesh Gandhi of Princeton Power Systems Inc. The inverter is designed to reduce the levelized cost of energy (LCOE) of photovoltaic (PV) power by being more efficient, more reliable, and more cost-effective than currently available inverters in the market. Furthermore, the DRI will provide valuable grid-support functionality that encourages high penetration of PV power systems into the electrical grid and also provide “added value” for the system owner and local utility. The process reached its commercialization stage with aid from DOE’s and Sandia’s Solar Energy Grid Integration Systems (SEGIS) solicitation. Aiding in development of the device were Scott Kuszmaul (5946), Sigfredo Gonzales (6112), and Abbas Akhil (6113).

“R&D 100 Awards,” submitted by Sandia researcher Ward Bower (6111) jointly submitted this invention with lead researcher Mahesh Gandhi of Princeton Power Systems Inc. The inverter is designed to reduce the levelized cost of energy (LCOE) of photovoltaic (PV) power by being more efficient, more reliable, and more cost-effective than currently available inverters in the market. Furthermore, the DRI will provide valuable grid-support functionality that encourages high penetration of PV power systems into the electrical grid and also provide “added value” for the system owner and local utility. The process reached its commercialization stage with aid from DOE’s and Sandia’s Solar Energy Grid Integration Systems (SEGIS) solicitation. Aiding in development of the device were Scott Kuszmaul (5946), Sigfredo Gonzales (6112), and Abbas Akhil (6113).
Active shooter exercise prepares Labs for worst-case scenario

One year after the tragic shooting incident at the EMCORE facility at Sandia Science & Technology Park that claimed two lives, Sandia’s Emergency Management organization conducted an exercise to test the Labs’ ability to respond to an active shooter incident. The exercise engaged all aspects of the Labs’ emergency response capability, from first response by security and medical personnel, to field coordination, interface with other jurisdictions, and public and media interactions. In an effort to make the scenario as realistic as possible, the exercise featured employee/actors playing the roles of the shooter and victims. Security personnel engaged as they would in a real-world situation, responding with bright red non-operable exercise “firearms.”

Photos by Randy Montoya
**MISCELLANEOUS**

- **DRUM SET**, '80s Tama Swingstar, 5-pc.
- **WASHER & DRYER**, Roper (Kenmore)
- **TRAILER**, 5' x 8', w/lights, 5,000-lb.-capacity
- **TWIN BED**, w/head & foot boards
- **WASHER & ELECTRIC DRYER**, Whirlpool
- **DINING ROOM SET**, antique, oak, table

**Miscellaneous**

- **book**

**Ad rules**

1. Link 18 words, including last name and home phone (if you include a work or cell phone, it will count as two or three words, depending on the length of the address.)
2. Include organization and full name with submission.
3. Submit ad and set phone numbers.
4. Type or print legibly, use accepted abbreviations.
5. One and per ad.
6. No ads above the maximum number allowed.
7. No "for rent" ads except for apartments or time share.
8. No commercial ads.
9. All ads are subject to the editorial prerogative, and no mechanism for reminding will be used.
10. We will notify the same ads for more than two times.

**How to submit classified ads**

**DEADLINE:** Friday noon before week of publication.

**Method of payment**

- **mail**: MS 0165 (Dept. 365)
- **phone**: 844-4645
- **e-mail**: The Classified Ads Department is available after hours. The ads must be ready for publication.

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1. Submit a counterfoil in writing.
2. Submit ad with phone number.
3. Include an e-mail address on the counterfoil.
4. Include your phone number.

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4. Include your phone number.

**How to submit classified ads by e-mail**

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2. Submit ad with phone number.
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Shots Fired: EMCORE one year later

Story by Iris Aboytes

On July 12, 2010, a lone gunman arrived at the EMCORE facility in Sandia Science & Technology Park. Minutes later, three people lay dead and four people were injured.

“My friend and EMCORE employee Sharon Cunningham was a bystander,” recalls Terry Jordan-Caller (5422). “Sharon was walking from one building to the next, just in the normal course of her job, when the angry shooter started shooting at anybody he saw. Sharon was fatally injured. She may have known the shooter because he worked there previously, and it’s a small company.

“Sharon was energetic, friendly and welcoming, helpful, and loved to be with her family,” Terry says. “She was an awesome mother to her (then) 6-year-old daughter. Caitlin, who went to preschool with my daughter. Caitlin has a lot of food allergies, and Sharon spent a lot of time researching the foods that would work the best for Caitlin. She was always sure to bring along a homemade cupcake for Caitlin to birthday parties. Caitlin can’t eat the usual cake and ice cream. She always made sure there were fun activities to do (crafts, water play, dress-up, backyard fun) when kids came over to parties at Caitlin’s house.”

For 15 years I was on the University of New Mexico Hospital helicopter that brings injured people for treatment,” says Bob. “I am used to seeing people hurt. I advise people to tell those they care about they love them each time they leave. One never knows what will happen next.”

Marcie Jordan (10667) does not think about that day too often. “Dangers still exist,” says Marcie. “Dangers and dangerous people will always exist as long as people who are hurting, disillusioned, unhappy, or vengeful think they can change their plight, or feel justified, using violence.

“The only thing I would have done differently last year is call my husband a lot sooner to let him know I was safe.”

Amid the many heroes that day were members of the Albuquerque Police Department, whose quick response might have saved additional lives. The amazing police presence was phenomenal. They did exactly what they needed to do. — Sandia paramedic Kevin O’Brien

Cheryl notes that a recent exception from Control Site Access allows visitors to enter IPOC for Sandia-related business without a badge, as long as the visitors remain under escort by a badged individual for the duration of entire visit. “As a result, Cheryl says, "I have become very sensitive to visitors in our building." Among the many heroes that day were members of the Albuquerque Police Department, whose quick response might have saved additional lives," adds Kevin. “The amazing police presence was phenomenal. They did exactly what they needed to do.

The day of the EMCORE shooting, Terry was at work. “I had seen Sharon in a while, but wrote her an email, saying that I heard there was a shooting there, and that I hoped that she and her co-workers were safe,” says Terry. “I wasn’t surprised that I didn’t get a reply, because from the reports, there was obviously a lot of chaos at EMCORE. I didn’t learn that it was Sharon who’d been the first one who was shot until late the next day when a friend called to tell me. “I think of Sharon every time I go out the Eubank gate and notice the EMCORE buildings, and every time I see Caitlin at a party that her mother would have loved to attend.”

SANDIA'S EMERGENCY Management group in mid-June conducted its annual exercise to test its capability to respond to an emergency situation. This year, the exercise was based on an “active shooter” scenario. For photos and more about the exercise, see page 6.