

A newsletter for employees and friends of the Y-12 National Security Complex.

AUGUST/SEPTEMBER 2013

7TH ANNIVERSARY
the **Y-12**
times

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Chris Whaley (left), president of Roane State; Jackie Nichols, president of the Anderson County Chamber of Commerce and state Rep. John Ragan attend the Open House for the new UPF offices at Union Valley Road.

UPF Open House

A couple hundred of the Uranium Processing Facility project's federal and contractor staff recently relocated to a facility on Union Valley Road in Oak Ridge. Office space is not available on site at Y-12 to accommodate all of the UPF project's 770 personnel, so the Union Valley work space, directly across the street from Y-12, will help consolidate staff and provide for the project's growing work force.

To many, the relocation represents an office move. For the project team, it represents much more than that. The new space is symbolic of the project's renewed commitment to transparent communication and a collaborative workplace.

"We've got a strong project team assembled, and we're strategically located right outside the gate to Y-12," said UPF Federal Project Director John Eschenberg

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United Way Campaign Kick-Off

Y-12's 2013 United Way Campaign officially kicked off at the end of August with an event featuring Holly Warlick, head basketball coach of the University of Tennessee Lady Vols.

She encouraged Y-12 employees to increase their giving and challenged the site to do more for the community. "I hear you all are in the top five of giving to United Way — don't you want to be number one?" she asked. "Y'all need to be on top. Y'all need to be number one."

Speaking of number one, Warlick talked about her new team, which will try to repeat as Southeastern Conference champions, and the work they do beyond basketball. "We try to get our young ladies to give back," Warlick said. "I'm a big supporter of United Way. I promise you it goes to a good cause."



Holly Warlick visits Y-12 to kick-off the 2013 United Way Campaign.

United Way cont. on page 2

at the July 25 open house hosted by R&R Properties, owner of the new building. The close-knit cubicles with low partitions that take up most of the floor plan are reminiscent of mega-project design facilities 25 years ago, he said. "This wide-open space drives communication and collaboration, and this is what will ensure our success," Eschenberg said.

Carl Strock, the UPF project director for B&W Y-12, also acknowledged the improved work space and the importance of UPF to Y-12 and the nation. "If you're doing a world-class project, you need the right facility to do it in," he said. "This building meets our project's functional needs, allows for our growing numbers, and the proximity to the Y-12 plant is great. You walk out the front door, and there's the future."

At peak construction, UPF staff is expected to climb to 1,500, with many of those jobs in the field. In three leased facilities, the UPF project will be able to accommodate close to 1,000 workers.

"We need to support our communities," she added. "I love living here."

Other speakers included Bob Kesling, voice of the Vols and chair of this year's United Way of Greater Knoxville campaign; Bill Reis, vice president of Environment, Safety and Health; Elaine Streno of Second Harvest Food Bank; Mike Thompson, vice president of the Atomic Trades and Labor Council; and Chad Wallace, vice president of the International Guards Union Association of America, Local 3.

In addition to the speakers, this year's event included the cornhole tournament and three-point basketball finals; a bake sale; silent auction items; food vendors; local agency booths; and both Infrastructure Programs' Steve Laggis and Projects, Sustainability and Facilities' Durand Carmany kissing a 500-pound pig — all to benefit United Way.

The campaign will continue through mid-October.

If it doesn't look right, QUESTION IT

Maintaining a healthy nuclear safety culture is one of the most vital things we do, and recently members of Engineering, Production, and Facilities, Infrastructure and Services attacked head-on what could have been a nuclear criticality safety concern. "During a daily activity, a casting stack tipped over while being lowered from the melting furnace," explained Engineering's Tyler Lovelace.

Design Authority Representative Tony Boser said, "Anytime a tip-over occurs, Criticality Safety Engineering is called to review the resulting configuration. That's when Tyler [Lovelace] and Jerry [Lichtenwalter] stepped in ... and as a result, a long-standing issue was resolved."

Operations were placed on hold during the review while the physical condition of each furnace and the operational history were analyzed. The review revealed that the flexible hydraulic and cooling water lines were in vulnerable positions.

"Joey [Griffith, Production support manager] showed us where a tip-over had melted the furnace enclosure glass," Lichtenwalter said. "His feedback is what led us to determine that if a tip-over occurred on the opposite casting line, where the hydraulic lines would have been in the way, a new abnormal condition could have occurred."

"If one of these lines got caught in a hot stack tip-over, it could cause enriched uranium and a moderator to collect in the unsafe geometry bowl," Lovelace said. "The team decided the flexible lines had to be replaced with metal piping, and the lines were moved clear of the area. The cooling lines to the lower furnace were removed."

“

I ask all employees to take personal responsibility for safety and challenge existing conditions that may create a safety hazard, just as this group of employees did.

”

—Jim Haynes,
senior vice president and
deputy general manager

Our nuclear safety culture is grounded in the following traits:

1. Leadership safety values and actions
2. Problem identification and resolution
3. Personal accountability
4. Work processes
5. Continuous learning
6. Environment for raising concerns
7. Effective safety communication
8. Respectful work environment
9. Questioning attitude
10. Decision making

“Quality of Life” projects under way

After decades of use, break rooms, restrooms and conference rooms in the production facilities are finally getting much-needed renovations thanks to a new initiative. “The ‘Quality of Life’ initiative was created to improve habitability in the production facilities,” said former Vice President of Production Joel Duling. “Because it directly affects our employees’ quality of life, having support for this initiative is very important to us.”

Last fall, the initiative received \$500,000 for refurbishment projects. However, with more than 100 common areas needing improvements, a systematic approach to renovation was needed. The Production Facilities Department established new standards for habitability based on criteria used by restaurants, schools and other public facilities. Facility upgrade specialist Marty Keith then walked down every common area with the building managers and scored each area. Several hourly workers graded the areas as well. Upon completion, the areas were ranked, and the most deficient were selected to undergo renovation first.

In May, renovation of the 9723-25 (9212) break room — Production’s largest and most-used break room — was the first project finished. Improvements include a new water filtration system; new cabinets, countertops and sinks; new ceiling tiles and flooring; fresh wall paint; upgraded lighting; and resurfaced tables and additional new chairs.



Facilities, Infrastructure and Services employees install new flooring in the Building 9723-25 (9212) break room.

“The upgrades have been well received. Employees are seeing work being done in a timely manner, and it makes all the difference in the world,” said Atomic Trades and Labor Council health and safety representative Jim Wicker.

Hands-on experience helps interns

Y-12 once again welcomed a talented group of students to the site this summer. The 16 interns, who were funded by a variety of federal programs at no cost to Y-12, spent the summer working on specific projects, which they presented to senior managers in August.

Javier Martinez, a senior in electrical engineering at Hampton University in Virginia, worked in Development. He helped develop a Giant Magneto-Impedance Magnetometer, a device used to measure magnetic fields. It has potential applications in biomedicine, navigation and national security.

“I really appreciated the hands-on experience and the innovation of the product,” Martinez said. “I was exposed to new software and really enjoyed the development and research involved in building a new product.”

In addition to their projects, interns took site tours, visited Oak Ridge National Laboratory, and participated in career planning and professional development workshops, where they learned money management, organizational skills and general insight about how businesses operate. All events were organized by the Human Resources division to provide interns with a well-rounded learning experience while at Y-12.

“I didn’t know what to expect, but it was an enjoyable and enlightening experience,” said Sebastian Pena, a senior at St. Ambrose University in Davenport, Iowa, who worked on budgets for the Y-12 Garage. “I became more efficient and gained a lot of technical knowledge.”

B&W Y-12 President and General Manager Chuck Spencer spoke to the interns before their final presentations. “I appreciate the fact that you were willing to come to Y-12 for the summer,” he said. “I have been involved in intern programs at many DOE [U.S. Department of Energy] sites, and I hope you’ll consider coming back to Y-12 someday to start your careers.”



Intern Ashley Winston, a senior in business administration at Morris College, delivers her final presentation at New Hope Center. Winston spent the summer working with Y-12’s Contracts and Special Initiatives group.

VET GRADS JOIN ENGINEERING

Engineers Brent Gallagher and Thomas Tress are now full-time Engineering employees, having graduated from the University of Tennessee in May. Also graduates of America's Veterans to Tennessee Engineers, they worked part-time for three years at Y-12 while attending UT.

Navy veteran Brent Gallagher worked as an electrician stationed aboard an aircraft carrier in Florida. After four years, including two deployments in the Persian Gulf, he returned to Knoxville, earned an associate's degree and started working as a maintenance technician. Later he was accepted into the Tennessee Engineers program, started school at UT and was placed with Y-12 for the program's paid part-time work opportunity while he attended UT.

"The GI bill is one of the reasons I went to school," Gallagher said. "It was very helpful in paying for college." He appreciated Y-12's flexibility in accommodating school schedules and the on-the-job experience.

"Working 16 hours a day in deployment helped me prepare for the long hours required each day to complete an electrical engineering degree," Gallagher said.

"If it moved, I fixed it," Tress said about his five years as a Marine Corps helicopter mechanic. He traveled throughout the U.S., to Japan and twice to Iraq. He too embraced the GI Bill; "I couldn't have gone to school without it." Tress started at Roane State, transitioned to UT, was accepted into the veterans program and was placed with Y-12.

"In school you learn theory," Tress noted. "At Y-12 you learn what you'll do on the job, and you get more perspective on what engineering is and what it can do. Some of our fellow graduates had ... no clue what they were going to do. For us, it was easy."



Veterans, Thomas Tress (left) and Brent Gallagher, continue to serve our nation as full-time Y-12 Operations Engineering employees.

BACK TO SCHOOL

For kids, "back to school" means the end of summer's freedom, the end of fun. For many adults, it means long nights and short weekends. Either way, it is often an unpleasant experience.

Rob Schriver, a talent management consultant in Human Resources, sees it differently.

"In 1974, I got my communications degree at the University of Tennessee and now, almost 40 years later, I got to go back and teach a class at my alma mater," Schriver said. "It was a dream come true."

Schriver taught English 360: Technical and Professional Writing under a Joint Assignment Agreement with UT. His years of experience developing and delivering training courses at Y-12 proved helpful in this new endeavor. "I brought some training skills and concepts into an academic classroom and tried to make it more lively," he said. "We had a lot of fun."

CONGRATS GRADS

In May, 17 employees were awarded a University of Tennessee master's degree in industrial engineering with a concentration in engineering management.

The degree itself is not new, said Debbie Reed, Y-12's UT liaison director. Other Y-12 employees have pursued it by taking a class at a time, taking a sabbatical or even completing the program online. These new graduates, though, represent the first to go through the 16-course, four-semester program as an ensemble, attending all-day Friday classes in the university's first off-site graduate program.

One program benefit is that "by attending the classes together, our employees have had the opportunity to bond with one another and create a network," Reed said. "If some of the Engineering grads have a question about Production, or vice versa, they're able to call someone they've come to know well through working in classes together."

"Engineering management looks at a process and asks, 'Is it working? How can it be improved?'" she said.

"There's a lot of problem solving and streamlining involved."

Ben Stephens, Y-12's manager of academic partnerships, has worked to establish similar JAAs between Y-12 experts and regional universities. "JAAs allow Y-12 employees to gain new insights, ideas and exposure to academia that they can bring back to work to address plant issues and problems," Stephens said.

Schraver has already seen his time at UT positively influence his Y-12 work. He recently developed three communications workshops and offered them to the Y-12 population. "I was able to bring some of what I was teaching and learning at UT back to these workshops," Schraver said. "I wouldn't have been able to make them so successful without this UT experience."

BACK TO CLASS WITH A NEW PERSPECTIVE

Learning to see things from different viewpoints is one hallmark of a good education. For 30 local educators, a visit to Y-12 on July 11 provided an opportunity to expand their thinking about science, engineering, business and history.

Y-12 began hosting Educators in the Workplace after Innovation Valley and the Knoxville Chamber partnered on the educational initiative five years ago. Y-12 is naturally a popular choice for educators who teach science, technology, engineering and mathematics courses, but for those who teach other topics, such as social studies and English, Y-12 can be equally appealing. Sherry Rogers, Lenoir City Intermediate/Middle School, said, "I will use today's experience to teach history to fifth graders. They're very interested in World War II."

The day began with a tour of the Y-12 History Center in New Hope Center followed by a sitewide tour led by Y-12 historian Ray Smith. Stephanie Walker, special education supervisor for Roane County Schools, said, "Until you're up on Chestnut Ridge, you have no concept of Y-12's size, and the [building] numbering system is mind-boggling."

The group also visited three demonstration laboratories where Y-12 engineers conducted hands-on experiments, talked about the work performed at the plant and offered career-related tips to share with students.

At the end of the day, the educators had gained a new perspective on Y-12 — from atop Chestnut Ridge and from the employees they met.



Y-12's Q. Grindstaff conducts an experiment for local educators participating in the Educators in the Workplace program.



Course content was designed to meet the needs of the Y-12 work environment, and some Y-12 employees who have Ph.D.s served as adjunct professors. During the second year, each student worked on a capstone project that tied in with Y-12.

A second Y-12 group graduates in December 2013, a third finishes next May, Oak Ridge National Laboratory has started a program and TVA is interested; both will use Y-12's approach as a model, said Reed.

Recent graduates

Ben Arnold
Charles Bynaker
Christopher Crawford
Raynor Eldridge
Dean Ford
Michael Greenwood
Sanchez Harley
Anita Hazlewood
Bradley Hodges
Carlos Houston
Alice Lay
Jason McCall
Austin Smith
Joshua Smithgall
Chad Watson
Daniel Weller
Eric White

Stowe named Technology Fellow



As Y-12's second Technology Fellow, Ashley C. Stowe will further develop a neutron detection crystal for hand-held and radiography applications.

Y-12 recently named Ashley C. Stowe as its second Technology Fellow, following a three-month competition that required each candidate to submit an extensive proposal and prepare a competitive presentation.

Stowe will use his two-year fellowship to build upon recent successes in advanced materials development for neutron detection by exploring all of the potential applications of the chalcogenide semiconductor crystal ${}^6\text{LiInSe}_2$. The semiconductor crystal will be the centerpiece for development of hand-held radiation detectors for nuclear nonproliferation and homeland security applications as well as for an improved imaging array of neutron radiography. Neutron imaging already has been shown to offer greater detail than X-ray radiography and has applications to neutron science, nuclear nonproliferation, treaty verification and Y-12-relevant quality inspection techniques.

The Technology Fellowship was established to give Y-12 scientists and engineers the opportunity and the budget to work on a two-year project of relevance to Y-12 and of particular interest to the technology fellow — one that would advance technology and science at Y-12 and advance Y-12's reputation in the chosen field. "The Technology Fellowship has proven to be an excellent mechanism to advance the state of Y-12's technology and to provide recognition and support to our technical talent," said Tom Berg, Technology Commercialization and Partnerships director.

Stowe currently is a senior chemist in Engineering, working as a radiation detection researcher and instrumentation development scientist. He has worked at Y-12 for five years and has a diverse portfolio of technology projects.

Congratulations

Y-12 scores an R&D 100 Award

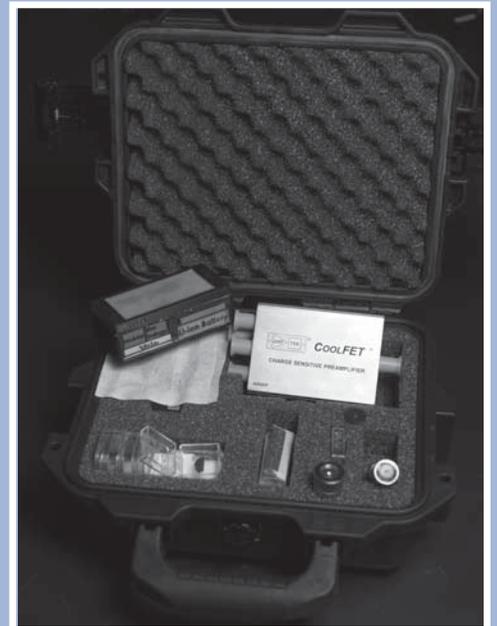
LlSe™, a high-efficiency thermal neutron detector developed at Y-12, has been selected by *R&D Magazine* as one of the top 100 technologically significant products introduced into the marketplace during the past year.

The ${}^6\text{LiInSe}_2$ crystal was developed by Ashley C. Stowe, a Y-12 senior development chemist, working with Zane Bell (a former Y-12 senior scientist now with Oak Ridge National Laboratory) and Arnold Burger (professor of physics at Fisk University in Nashville).

LlSe (pronounced "Lisa") is the first bulk single crystal containing ${}^6\text{Li}$ and is a newly developed replacement technology for ${}^3\text{He}$ thermal neutron detectors. The single-crystalline device will be used in handheld nuclear nonproliferation and homeland security applications to locate fissile materials. This solid-state neutron detector offers the significant advantages of portability, sensitivity, simplicity and low cost. Its simpler, more compact design and higher efficiency are key improvements that will appeal to users.

The new detector also could be used for nondestructive testing and evaluation, radiation safety and health physics, as well as thermal neutron radiography, computed tomography and neutron science when arrays of crystals are conceived.

Congratulations to the LlSe team for receiving this coveted 2013 R&D 100 Award.



LlSe™ was an R&D 100 winner for 2013.



AUGUST

51 years
 Development: **Matthew J. O'Hara**
 44 years
 Engineering: **James A. Burgess** and **Loren E. Carey**
 Environment, Safety and Health: **Boyd T. Gose Jr.** and **Danny P. Rowan**
 43 years
 Facilities, Infrastructure and Services: **Albert McLendon Jr.**
 Production: **Tulley G. Widner**
 35 years
 Business Services and Performance Assurance: **James C. Pease Jr.**
 Engineering: **J. Tom Cox III**
 Environment, Safety and Health: **Dana J. Davis**
 Production: **Robert L. Bandy** and **James M. Dagley**
 Quality Assurance: **Barbara D. Carmichael**
 30 years
 Production: **Cynthia M. Bailey** and **Teresa J. Goodpasture**
 Program Management: **James D. Plemmons**
 25 years
 Business Services and Performance Assurance: **Astrid Brynestad**
 Environment, Safety and Health: **Mark A. Burdette** and **Laura L. Cunningham**
 Facilities, Infrastructure and Services: **Diana L. Johnson** and **Gary L. Phillips**
 Human Resources: **Cheryl S. Sanz**
 Production: **Tonya M. Barnard**
 20 years
 Engineering: **Lloyd J. Jollay III**

SEPTEMBER

46 years
 Facilities, Infrastructure and Services: **Doug H. Kitchen**
 45 years
 Engineering: **Luther E. Galyon Jr.**
 44 years
 Production: **Pete D. Psihogios**
 43 years
 Engineering: **Bernard G. Keylon Jr.**
 Public & Governmental Affairs: **D. Ray Smith**
 Quality Assurance: **Terry A. Chance**
 35 years
 Engineering: **Robert L. Bridges** and **Eric O. Covington**
 Production: **Patricia L. Dulaney**
 Safeguards, Security & Emergency Services: **Kathie A. Hensley** and **Kathy H. Meng**
 Business Services and Performance Assurance: **Emma S. Jones**, **Terry L. Marlar** and **Julia A. Rupert**

Quality Assurance: **Wayne A. Randles**
 Facilities, Infrastructure and Services: **E. Gene Stevens**
 30 years
 Business Services and Performance Assurance: **Susan E. Hughes**
 Engineering: **David D. Bunton** and **William L. Collier**
 Production: **Richard J. Dilly**, **Alan F. Moore** and **John D. Williams**
 Quality Assurance: **James H. Norvell**, **Mary E. Roy** and **Kenneth A. Thompson**
 25 years
 Business Services and Performance Assurance: **Rebecca L. Williams**
 Environment, Safety and Health: **Kathy J. Boatman** and **Johnny M. Skinner**
 Production: **Deborah R. Braden** and **Joey S. Griffith**
 Safeguards, Security and Emergency Services: **John L. Brown Jr.** and **Michael C. Goins**
 20 years
 Chief Financial Officer Division: **Linda G. Bowling**
 Engineering: **Stacey S. Landers**
 Production: **Pamela F. Singleton**
 Quality Assurance: **John R. Lucero**

In memoriam

Nolan McAfee of Facilities, Infrastructure and Services passed away July 26. He had 17 years of company service.

Co-worker **Tim Milligan** said, "Nolan and I hired in on the same day in 1995. All of us on the HVAC crew have a lot of good memories that will never be forgotten, and Nolan will be greatly missed."

In memoriam

Scott Allen Crisp of Security passed away July 31. He had 12 years of company service.

Brian Conlon, co-worker, said, "Scott served on the Protective Force 'Special Response Team' for more than 10 years. His dedication to duty and loyalty to his fellow teammates were above reproach. It was a true blessing to have known him."

In memoriam

Phillip Schuetz of Uranium Processing Facility passed away Aug. 10. He had four years of company service.

Co-worker **Cindy Ford** said, "Phil was a remarkable manager with a true compassion for people. He gave real meaning to UPF's Pink and Purple Thursdays in support of pancreatic and breast cancer research. We have some big shoes to fill, but we will certainly carry forward our support for what Phil started."

Charles T. McLoughlin of Engineering passed away Aug. 11. He had 46 years of company service.

Mitch Evans, co-worker, said, "Charlie was a great person to work with. Working with him was a pleasure."

Co-worker **Jerry Burgess** said, "Charlie was a guiding light. He was one of a kind."

Jack Moye of Production passed away Aug. 13. He had 33 years of company service.

Michael Monday, co-worker, said, "Jack had the upmost respect and dedication to his family and friends. He will be missed dearly."

Gam N. Ferguson of Production passed away Aug. 28. He had 11 years of company service.

He is listed as a member of the organization in which he last worked. Y-12 offers condolences to his friends and family.

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Young Innovators' Society Awesome Eyeballs visit Y-12 Tweens spawn ingenious mercury experiment



Middle schoolers visit Oak Ridge to learn and discuss the students' proprietary method of reducing mercury in fish.

A chance conversation at a Huntsville manufacturing meeting has heads turning in Oak Ridge. A science, technology, engineering and math (STEM) science club of rising sixth graders in northern Ohio is onto something big — reducing mercury levels in fish.

Four scientists-in-the-making and their mentors traveled to Oak Ridge for two days of touring, working and planning. The “Awesome Eyeballs” are part of The Young Innovators' Society, or YIS, a non-profit organization of volunteers who work with K-12 students to pursue STEM learning and leadership.

To define their annual challenge, the Awesome Eyeballs brainstormed scientific issues and landed on reducing mercury levels in fish. However, it was when Dennis Miller (Program Management) met Nadine Otterman, executive director of YIS and mentor for this club, that the pieces of the puzzle fell into place. “With such a novel approach and the direct applicability to Y-12, I knew these kids needed to come to Y-12 to realize the full potential of their research. We often say our future is in the hands of our youth; this was an opportunity to let them show us what they can do,” said Miller.

The club developed a proprietary treatment technology and is now in discussion with Y-12 and Oak Ridge National Laboratory researchers to develop an experimental plan to create a field application likely to have direct benefit to Y-12's efforts to improve the environmental quality of

East Fork Poplar Creek. “I've dreamed about the opportunity to help detox fish,” said young innovator Michael Otterman.