

MARCH/APRIL 2014

the Y-12 times

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Hard work pays off for apprentices

Apprentice graduates and their families celebrate their accomplishments. From left: Jim, Kem and apprentice graduate Lance Branum; graduate Jessica, Gabriel and Berkley Griffin. Bottom: graduate David and Lucas Gates.

You don't often think of graduation in March, but it was a lucky day on 3/3 at 3 p.m. when Y-12's Apprentice Program graduated 27 new journey workers.

"The program requires a big commitment," Beth Green, director of Resource Management, said. "These employees work their 10-hour days and then go to school at night for another four hours. It is very intensive."

These apprentices were selected from more than 2,600 applicants, completed an aptitude test and interviewed with Human Resources and various union and chief stewards before starting the arduous program.

Apprentices worked side-by-side with a skilled craftsman for the program's duration. The heating, ventilating and air conditioning; electrical; welder and pipefitter apprentices completed a five-year program and were part of the first apprentice class in 2008 following the program's 26-year hiatus. The insulator apprentices finished a four-year program.

"Apprentices rotate throughout Y-12 and get to see every craft execute their tasks," Air Conditioning and Refrigeration Chief Steward Tim Milligan said. "They learn the ins and outs and all the specifics of Y-12 before graduating."

The Apprentice Program is a partnership between Y-12 and the Atomic Trades and Labor Council. The curriculum is defined by the U.S. Department of Labor, and employees receive their journey worker card in addition to their diploma. "A journeyman's card is recognized everywhere. It signifies dedication, hard work and a specific skill set," Milligan said.

National Nuclear Security Administration Production Office Manager Steve Erhart commented on how important these skilled workers are to Y-12. "This program is a great way to transfer knowledge from our highly skilled workers to the new work force. The apprenticeship program has positioned Y-12 for the long-term to ensure our future production capabilities."

There was no luck about it; these journey workers were devoted to their strict training program and are prepared for their positions at Y-12. Congratulations to Jonathan Bowling, Adam Braden, Lance Branum, Daniel Brown, Jessica Buffalo-Griffin, Kevin Christmas, Benjamin Dickerson, Erin Earley, David Gates, Brandon Gibson, Chris Hackworth, Jason Harris, Richard Henry, Joshua Howard, Rodney Howard, Raymond Hutzler, Samuel Irwin, Benjamin Kerwin, Kristie Lee, Michael Lopez, Lee McCurry, Tommy Melhorn, Joseph Riordian, David White Jr., Donna Whitson, Cinnamon Williams and Zachary Yost.

Y-12's budget: good news

Larry Wiker, acting Chief Financial Officer, shared some good news about Y-12's fiscal 2014 budget. Y-12's budget is in, and it's only \$8 million lower than the original baseline from the President's Budget request. Earlier projections indicated there would be a \$120 million shortfall. With the approved budget, Y-12 should be able to complete the majority of the site's original mission scope. Read on for Wiker's answers to questions about the fiscal outlook.

Q: How does Y-12's budget look for the rest of the year?

A: The budget for FY 2014 is favorable as a result of the passage of the Consolidated Appropriations Act, 2014 by Congress.

Q: No furloughs or layoffs are expected, correct?

A: The FY 2014 budget outlook supports the current staffing levels at Y-12; thus no furloughs appear necessary at this time.

Q: Are we able to perform work in all areas?

A: We had some minor areas of reductions in work scope, but overall, the site mission as originally planned for FY 2014 is supported by the current budget.

Q: What are indirect programs? And how do they factor into the budget?

A: Indirect programs provide functional support to the site (examples are Finance, Legal, Human Resources, etc.). Every dollar spent on an indirect program is one less dollar applied to direct mission deliverables. It is incumbent on each indirect program to work on continuous productivity improvement in order to allow for the maximum budget dollar to be applied to direct mission deliverables.

Q: What about hiring, attending development training, purchasing supplies and equipment — will employees be able to do these things?

A: We are lifting the restrictions on these activities on a gradual basis, pending a clear understanding of the FY 2015 budget outlook. The first look we had into FY 2015 was the President's Budget submitted to Congress.

Q: What is Y-12's FY 2015 budget outlook?

A: The annual budget process starts with the President's Budget submission to Congress and ends with some type of appropriation bill that gets passed by Congress and signed into law by the President. We currently do not have any firm FY 2015 budget numbers for Y-12 to base its planning upon. Until we know our FY 2015 budget numbers, it is prudent for us to handle staffing decisions judiciously and limit our discretionary spending.

Q: What is the most important thing employees need to know in regard to the Y-12 budget?

A: The external budget process has become less predictable and is extremely fluid. We must always be cautious with our spending and manage our budgets between years so that we can react in a proactive manner to unknowns. A prime example was the Lapse of Appropriations and min-safe actions that occurred last October. Because we were proactive in our spending in FY 2013, we positioned ourselves such that we were able to minimize staff and program impacts during the LOA.



Larry Wiker, acting Chief Financial Officer

foam improvements solve problem

“This time last year, we weren't producing foam because of quality issues,” Y-12 President and General Manager Dave Richardson recently explained to Y-12's managers and front-line supervisors. “But we confronted the problem head on and delivered a solution that addresses long-term corrective actions.”

The foam is a dense polyurethane foam used to protect weapon parts in a drum, whether during shipping or in storage.

The delivered solution significantly modified the foam manufacturing process and resulted in a more consistent product with an acceptance rate that is greater than 98 percent. Changes included:

- Procured raw materials are now more strictly specified.
- New aluminum molds were designed, then machined, and are now used during the foam manufacturing process.
- The new molds have fewer and smaller vent holes located at precise locations, which allow gases to be released, reducing voids and creating a more consistent and predictable density in the material. Also, the molds are preheated for a prescribed length of time (which also influences density).
- Newly fabricated foam is now dimensionally inspected and weighed to ensure the product meets specifications.
- Once certified, each foam piece is assigned a unique number, which is stenciled on the foam and entered into a database. Each piece is now tracked from cradle to grave.

“In the past, only visual inspections were performed on the foam parts,” a container refurbishment supervisor said. “Now, Y-12's made several improvements to ensure foam is not only manufactured to meet shipping requirements but also verified (through dimensional inspection) and tracked.”



A machinist uses a precision square to properly set up a measuring machine prior to calibrating an instrument. The Oak Ridge Metrology Center performed 2,729 calibrations and maintained more than 18,000 pieces of measuring and test equipment in fiscal 2013.

Quality accomplishments earn



An evolution is taking place in Quality Assurance. What was two different organizations only a few years ago is now one diversified organization equally combining the weapons mission and supporting functions.

“Quality Assurance is a site-wide support organization that performs work tied to almost every activity from weapons certification and lab analysis to materials procurement and large-scale projects like UPF [Uranium Processing Facility],” Kevin Corbett, vice president of Quality Assurance, said.

Quality Assurance’s fiscal 2013 accomplishments illustrate the broad scope of work performed to ensure quality expectations are met. “Our most significant achievement was helping exceed the production deliverables schedule despite budget constraints imposed by sequestration. We had to manage overtime more closely than ever,” Corbett said.

Some of Quality’s other achievements include:

- Completed approximately 90,000 laboratory tests in support of plant missions.
- Led an effort to develop a more streamlined action tracking system for the UPF project.
- Implemented 25 productivity improvement initiatives saving more than \$2.3 million.

Corbett said the organization is now focused on raising expectations and driving continuous improvement while continuing to support Y-12’s core mission. He recently established a new Organizational Health Management Team dedicated to helping improve site-wide implementation of quality requirements.

“Our initiative is based on the question, ‘Are we doing the best we can in all areas?’” Corbett said. “Continuous improvement is so important; we can’t accept the status quo. Quality has more than 300 employees with an average of nearly 20 years of experience, and we have successfully supported Y-12’s mission for more than 70 years. Now, we want to find ways to improve our own efficiencies and effectiveness and help other organizations do the same.”

A better way to **LABEL** parts

A new way of marking parts for quality evaluation as units are disassembled has improved tracking and efficiency throughout the work stream. The new process, initiated by Production’s Material Management group and based on a similar one at the Plant Laboratory, relies on permanent adhesive labels applied to the inner plastic bag that protects each item.

The uniquely numbered label includes part identifier, work request, and other data and is printed on paper stock that is water, acid and fade resistant.

Until late 2013, batch cards were the only identifying paperwork following along with the part itself. Now, even if the batch card is lost, the item can still be immediately identified.

Programmers also created a new database, which provides all information to print the labels. A column for field notes was added and a link to the work stream database is a click away. As a result, there is a permanent record of comments, and deciphering someone else’s handwriting is a thing of the past.

All along the disposition route, the process has improved efficiency. For example, the Material Testing Laboratory, Analytical Chemistry and Nuclear Materials Control and Accountability are able to immediately and accurately identify parts, what is to be done with them and where they go next.



The new database provides all information to print the adhesive labels. Manager Dan Linehan said, “The new method minimizes the potential for losing track of items.”

Multiple organizations contributed to the project. The productivity improvement, which is estimated to save more than \$99,000 per year, was funded primarily by Stockpile Services and Stockpile Systems.

STRESSED? Take a deep breath before reacting

Any lifestyle change usually brings stress with it. To help combat added stressors, Y-12's Lead Psychologist Bill Conklin recently shared ways employees can cope with stress.

"It's hard to keep the main thing, the main thing when we're facing uncertainties or changes," Conklin said. "But we need to remember what we can and cannot control."

Common signs of stress include physical (aches, disrupted sleep), emotional (anxiety, irritability), social (withdrawal) and behavioral (bad habits) issues. "We need to recognize and acknowledge stress. Identify the sources," Conklin said.

"Y-12 employees have functioned under the specter of change since the July 28, 2012, incident. That's about 20 months of prolonged stress, and it takes a toll. It's important we practice self-care," he said.

That self-care includes tending to the basics of sleep, diet and exercise. "Let go of stress-inducing activities and continue those stress-reducing activities. And remember, when you have added stress, it's unlikely a good time to start major projects," he advised.

If you feel overwhelmed, you can call on Occupational Health Services' psychologists. "We're happy to talk to employees or employee teams," Conklin said. You can contact him at 574-3434, Linda Shissler at 576-9951 or Betsy Bridges at 576-9956.

So before you get angry because you burned your dinner or you respond hatefully to a family member, realize that the level of stress with which you're dealing is not permanent. "We will make it through, and we can handle the change that comes our way. This is a time where that positive psychology stuff can really come in handy," Conklin said.

Conklin explained, "Positive psychology focuses on the good stuff you (as well as organizations and communities) have. Build on those strengths, and the implications for you are tremendous. Just imagine getting more out of your day-to-day life: your relationships, your job and yourself.

"It's exciting to take what is good and make it even better. In that way, there'll be less room for the stuff that's not so good," he said.

Behind the scenes

What is FMES? Not many people can spell out the acronym, but almost everyone is affected by what it does.

While most of us go about our daily routines, the Facility Management Enterprise System — or FMES — is working behind the scenes to keep up with operations all over the plant. FMES, developed by software engineers in Y-12's Information Technology organization, consolidates a tremendous amount of data to provide real-time status updates and notifications.

There are 15 unique "Electronic Status Boards" displaying key information on dedicated large-screen monitors across 20 locations from the shift managers' offices to the Fire Protection Operations Alarm Room. There are more than 100 FMES screen pages that users can access to manage daily activities, and there are currently more than 700 users who can check the status of equipment, maintenance, repair and even weather. Thousands of data points can be displayed in a single chart, while tracking, trending and funding needs can be assessed with a glance.

The FMES technical lead, Terrance Hatfield, sums it up: "FMES is designed to adapt to the dynamic needs of the growing user base and has expanded significantly in the past two years, offering new capabilities including System Health, Go Board, Outage Tags and a variety of new administration tools."



System engineers and shift managers are two groups of users of the Facility Management Enterprise System. FMES works behind the scenes to keep up with plant operations.

FMES puts data at the user's fingertips and consolidates information needed to keep Y-12 operating smoothly. Decisions can be made by seeing the big picture, and time and money can be saved by anticipating and correcting problems before they happen. While FMES may not yet be widely known, it's a big winner for Y-12.

Y-12 energy savings here to stay

We spend our workdays in an aging plant that requires significant resources in time, effort and money to keep facilities and equipment in operating condition. Some of the world's most advanced manufacturing processes take place in 70-year-old facilities.

Y-12 has launched a number of projects to establish energy savings as a standard way of business. The Federal Energy Management Program has set up a way for federal agencies and subcontractors to use Energy Savings Performance Contracts to reduce their energy footprint. This effort will lead to significant benefits at Y-12, including becoming more energy efficient, using renewable energy, conserving water and reducing emissions. Johnson Controls Inc. was selected for the \$48 million contract.

"Y-12 uses the savings to pay for new, more efficient equipment that will use less energy in the plant," said Frank McHenry, ESPC Manager.

Some energy conservation measures — or ECMs — have been initiated (see inset). One ECM is the steam decentralization project that would rescope the steam delivery system by doing away with steam distribution to facilities in certain areas of Y-12.

These areas would replace steam heat with natural gas or space heaters. By upgrading one of the chiller facilities (another ECM), failing and outdated equipment would be replaced with new, more efficient equipment.

Y-12 Energy Conservation Measures

- Steam decentralization project
- Chiller facilities upgrade
- Lighting upgrades
- Steam and condensate system improvements
- Compressed air system improvements

Y-12's infrastructure is a mix of modern and old; but managers, planners and engineers are recasting the plant into an energy-efficient, modern facility to position Y-12 as a leader at the front of production and stewardship requirements.

Totally awesome since the 1980s

Y-12's Ron Simandl and John Brown began teaming in the 1980s when they researched alternative materials for everyday laboratory operations. "Much of our work was in response to environmental drivers," Simandl said.

Recently, the duo (along with Tammy Graham, who worked the commercialization aspect) was recognized by the U.S. Department of Energy for their sustainable inventions.

The team received the Change Agent 2013 DOE Sustainability Award. "It makes us proud to see the good greening work Y-12 employees are doing be recognized by DOE," Sustainability and Stewardship Program Manager Jan Jackson said.

During the 80s, the Environmental Protection Agency established acts and regulations that affected work at manufacturing plants.

"The EPA phased out or even outlawed the use of various solvents, resins, etc., and we were tasked with looking for alternatives," Simandl said. "Fluorinated solvents were forced upon us because the EPA totally outlawed the use of chlorinated solvents.

"Our contribution was to get one of the two commercial fluorinated solvents to actually work for us. They [the fluorinated solvents] are rather unforgiving and have to be tweaked to get them to work," Simandl explained.

What started as problem-solving for Y-12 turned into more. Simandl said he and Brown "were only trying to solve plant problems. In two cases, the inventions had broader application. The broad application and effectiveness of RonJohn® solvent was a big surprise."

Simandl said, "I guess we just got lucky," when talking about their success; this dynamic duo is one Y-12 is happy to have.

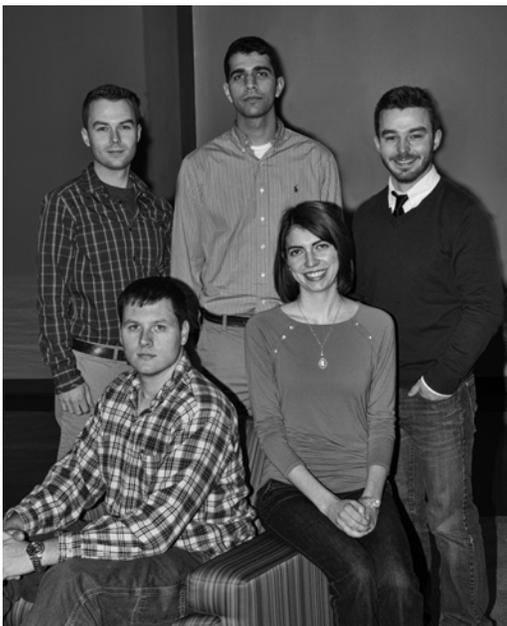


Laboratory associate John Brown and research chemist Ron Simandl are recipients of the Change Agent 2013 DOE Sustainability Award.

Around Y-12 ...

- We all know someone who has fought cancer, so sign up to support the American Cancer Society at the 2014 Anderson County/Oak Ridge Relay for Life, May 16 at 6 p.m. at Oak Ridge High School. "Let's show our community how much Y-12 employees want to add birthdays to all affected by cancer," team captain Karen Lacey said. To donate or register for the team, visit the Y-12 Gatekeepers' website (http://relay.acsevents.org/site/TR/RelayForLife/RFLCY14MS?fr_id=60742&pg=entry).
- If you can't participate at the Relay for Life, you can support the team by purchasing a meal at Construction's annual picnic, May 8. All proceeds go to the Y-12 Gatekeepers team. See the YSource event tab for more information.
- During March, National Nutrition Month, LiveWise Dietitian Karen Lacey offered Y-12 employees a tour of a local grocery store to educate them and their families on making good choices when shopping. Participant Susan Slover said, "I was surprised at the lack of nutritional value of so many things I was used to thinking were good for you." Also during the month, Y-12 was recognized by the American Heart Association as a 2013 Gold Fit-Friendly Worksite.
- Two more Quality of Life projects were recently completed. "Two break rooms have new flooring, freshly painted walls and new kitchen equipment to use," Marty Keith, a team lead, said. These changes show employees their recommended quality-of-life improvements are important in continuing to enforce our strong Nuclear Safety Culture. "When we make improvements that affect employees' daily interactions at Y-12, we're helping make our work environment safer," Nuclear Safety Culture Program Manager Paul Wasilko said.
- Congratulations to Julie Cramer, Kevin Cress, Marvin Lowery, Uvalde Mendez, David Mosby, Carl Quinn, Drew VanDeGriff and Syreeta Vaughn who recently earned a master's in industrial engineering with a concentration in engineering management at the University of Tennessee. Students pursuing this degree complete the 16-course, four-semester program as an ensemble. "This particular program is one of the success stories of the Y-12/University of Tennessee Partnership," Debbie Reed, Y-12's UT liaison director, said. "Being a nontraditional student isn't easy. Anyone who works full-time and still has the discipline and drive to take on college studies deserves special recognition."
- Seventeen Y-12 volunteers shared details of engineering fields to more than a thousand students through Engineers Week activities in Anderson, Knox, Roane and McMinn counties in February. As Career ONE manager Renee McGhee said, "... the impact on the nation's future work force is priceless. Amazingly, these few engineers reached more than a thousand students, and all it took was time, energy and a whole lot of pride in their profession."

Returning to the classroom



Y-12 engineers are eager to share their knowledge with middle-school-aged children. Engineer Ahmad Alsharif said, "Activities that expose students to science and engineering in school are extremely important."

It is science fair time at many schools, and six engineers from Y-12's Career ONE program judged the science fair at Oliver Springs Middle School. The engineers were quite pleased with what they saw.

"I was impressed with how the kids took their hobbies and interests, be it sports or cooking or anything else, and applied science to it to make a project," said electrical engineer Ahmad Alsharif, who judged the sixth-grade projects.

The science fair is one of the many community activities the Career ONE program is involved in. In addition to Engineers Week activities, they also do presentations and talk with local high schools and colleges about futures in engineering. Career ONE manager Renee McGhee explains that the community outreach is great for the engineers and it's one aspect of the nationwide STEM initiative.

"A lot of students aren't quite sure what engineers do and what a career in engineering might look like," McGhee said. "It's important for students to learn about engineering careers from Career ONE participants, because their high school and college days aren't that far behind. These engineers are very relatable to the students."

Alsharif agreed with McGhee. "It's great to get out in the community and talk to them about engineering. I had the opportunity to attend the ASM Materials Camp in high school, which exposed me early on to engineering at Y-12," he said.

Oliver Springs Middle School was also very appreciative of the judges. Sixth-grade science teacher Lindsay Hagman said that afterwards, "The students were coming back to their classrooms beaming because they all enjoyed the conversations they had with their judge. It was such a good experience for our children."



MARCH

46 years

Quality Assurance: **Joseph P. Konopka**
Strategic Planning and Transformation: **Thomas E. Smith**

44 years

Production: **Homer Gallaher**
Quality Assurance: **Carl E. Bennett Jr. and Willie T. Thomas**

43 years

Human Resources: **Dennis E. Ball**

Projects: **Eunice M. Hobbs**

41 years

Engineering: **Joe G. Arnold and Jerry W. Whittaker**

40 years

Business Services and Performance Assurance:
Donna M. Watson

35 years

Business Services and Performance Assurance:
Celia M. Townsend
Facilities, Infrastructure and Services: **Gary L. Burnett**
and **Dorothy H. Graham**

Human Resources: **Mary S. Arnwine**

Production: **Kenneth R. Chittum and William A.**

Young

Quality Assurance: **Peggy T. Hughes and Daniel E.**

Riggs

Safeguards, Security and Emergency Services: **Olin R. Brewer**

30 years

Business Services and Performance Assurance:
Robert M. Wilson

Chief Financial Officer Division: **William C.**

Hudson Jr. and Sharon E. Rose

Facilities, Infrastructure and Services: **Lori C.**

Cappiello and Sheila R. Finney

Production: **Gary L. Hensley**

Program Management: **Tim J. Brannon**

Quality Assurance: **Sophie J. Bobrowski and Emma S. Lankford**

Safeguards, Security and Emergency Services:
Stanley A. Cale

25 years

Engineering: **Nancy G. Bowden**

Production: **William A. Heineken**

Program Management: **Thomas A. Berg**

20 years

Production: **Patricia D. Price**

APRIL

45 years

Production: **Douglas Chandler**

Quality Assurance: **Emmett J. Walker**

Uranium Processing Facility: **Brian A. Shanks**

44 years

Business Services and Performance Assurance:

Richard D. Jarrell

Engineering: **John R. Jackson**

Facilities, Infrastructure and Services: **James A.**

Montgomery

43 years

Facilities, Infrastructure and Services: **Rufus Bowen Jr.**

Safeguards, Security and Emergency Services:
Stanley R. Burney

41 years

Production: **Charlotte D. Schaefer**

40 years

Engineering: **Gregory A. Niemeyer**

35 years

Ethics and Internal Audit: **Gwenda R. Childress**

Facilities, Infrastructure and Services: **Roy W.**

Carpenter and Donnie L. Jones

Production: **Marshall L. Rickard**

Safeguards, Security and Emergency Services:
William L. Green

30 years

Chief Financial Officer Division: **Teresa N. Thrower**

Engineering: **James T. Fowler, Quirinus G. Grindstaff**
and **Dewey P. Harless**

Environment, Safety and Health: **Margaret W. Terrell**

Production: **Pamela D. Johnson**

Quality Assurance: **Mary W. Dye**

25 years

Business Services and Performance Assurance:

James F. Hughes

Engineering: **Angela L. Reed**

Environment, Safety and Health: **John H. Shumpert**

Facilities, Infrastructure and Services: **Nancy E.**

Culberson and Timothy H. Simerly

Production: **Timothy F. Neal**

Safeguards, Security and Emergency Services:

Joseph A. Pasillas

20 years

Facilities, Infrastructure and Services: **Jerry E. Duncan**

In memoriam

Ronald Disney of Quality Assurance passed away Feb. 9. He had 6 years of company service.

Danny Reed, who worked on the field crew team with Disney, said, "Ronnie was an all-around good guy. He was a good friend and co-worker. He made work fun."

Y-12 offers condolences to his friends and family.

Change in MEDIC blanket coverage

For several years, Y-12 employees have donated blood on-site at MEDIC blood mobiles. These donations help make it possible for MEDIC to continue supplying life-sustaining blood to all 8 hospitals in Knoxville and to 20 other hospitals in 21 counties in East Tennessee and Southeast Kentucky.



<http://www.medicblood.com/>

As an added benefit, Y-12 employees and their dependents received "blanket coverage" through MEDIC. This arrangement offered financial protection from paying blood processing fees for a transfusion at any U.S. hospital and was offered based on a total blood donation amount for the site. Because Y-12's donation level for 2013 was below the MEDIC requirement for blanket coverage, this coverage for Y-12 employees and their dependents will run out at the end of April.

However, MEDIC will still ensure protection for individual blood donors. A single blood donation will cover an employee and the employee's dependents for one year, excluding pre-existing conditions. MEDIC blood donation dates will be posted on YSource as they are scheduled.

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Hog wild for Y-12 software

A recent Y-12 business competition may result in much-needed help for farmers thanks to Tennessee inventor Jake Gish, winner of the third annual Y-12 Innovation Competition. Gish proposed using three Y-12 software programs to track feral hogs, which cause an estimated \$1.5 billion annually in U.S. agriculture and livestock damage.

Gish, owner of Beyond Right Now Technologies, hopes to commercialize Y-12's Safeguards and Security Tracking, Analysis, and Reporting System, pairing it with off-the-shelf unmanned

aerial vehicles, or drones, to provide farmers with an integrated perimeter surveillance and detection system. Eventually, that technology would be combined with two Y-12 data analysis and prediction softwares, offering a packaged platform, which Gish calls the Pig Punisher, with all the tools needed to identify and mitigate the feral hog problem.

"The drone would be used to collect surveillance data on the behaviors and migration patterns of feral hogs," Gish explained. "We can then run that data through these software programs and allow farmers to more safely track and predict migration patterns, making control more efficient."

Like past Y-12 Innovation Competition winners, Gish will get start-up capital and consulting support from business development experts. The event, part of a long-standing partnership with Chattanooga's Enterprise Center, featured five

regional entrepreneurs pitching business plans based on Y-12-developed technologies to a panel of local business representatives and inventors.

"This event allows us to help give start-up businesses the boost they need to be successful," said Jeremy Benton, Y-12 Commercialization manager. "But it also gives us new perspectives on how our technologies could be used by private industry."



One Tennessee inventor has proposed using three Y-12 software programs to track feral hogs, a nuisance for many American farmers.