

Summer 2015

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University of Alabama in Huntsville

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THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

SUMMER ISSUE 2015

FRONT DOOR

New Student Services Building Gives UAH Welcoming Entrance

INSIDE:

ACADEMICS

Bio student takes on competition



RESEARCH

Lightning sensor set for launch



ALUMNI

Music and business in harmony



HIGHLIGHTS: THE GREEN FUND, NURSING OUTREACH, ATHLETICS, AND LIT PHOTOS!

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A Welcome Addition

New building will serve as 'front door' to campus

Thanks to its enviable location in the heart of the Rocket City, The University of Alabama in Huntsville (UAH) enjoys a strong relationship with the community that surrounds it. Its geographical proximity to local federal and corporate partners has led to internship opportunities for its students, employment for its graduates, and collaborative research partners for its faculty. It's also led to some confusion about just where the city ends and the campus starts! But all that will soon change with UAH's brand-new Student Services Building.

"For a while now, the university has been in need of a 'front door' to campus, something to accentuate UAH's presence as the anchor tenant for Cummings Research Park and within the city at large,"

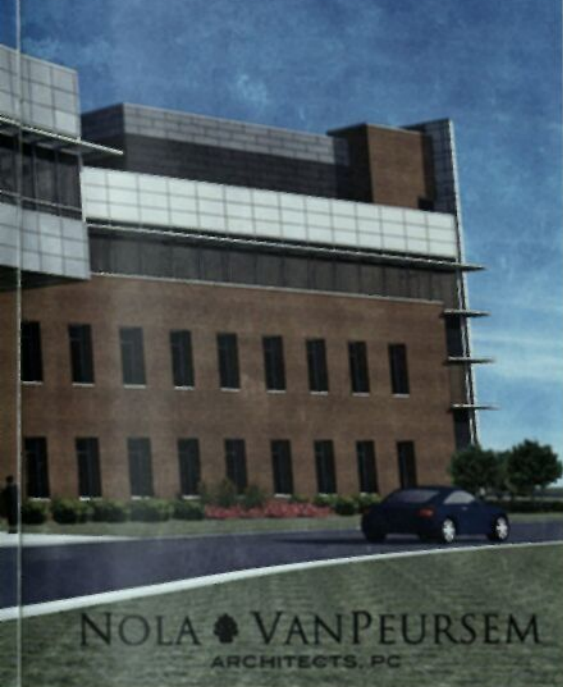
says Dr. Robert Altenkirch, UAH President. "With this building, we will be able to provide a welcoming and identifiable entrance to the campus for prospective students and visitors while at the same time consolidating all student-related services into one convenient location for those currently enrolled."

Though it will sit on the same general site as Madison Hall, which has since been demolished to make way for the new building, it will not occupy its predecessor's footprint. "We wanted it to be aligned with the greenway roundabout and the main entry roundabout," says campus architect Larrell Hughes. "And we wanted it to be very close to the greenway so that it would be easily accessible to students."

That's because the majority of the

building's 90,000 square feet will serve as the new home for all student services across campus, including a main Welcome Center, Undergraduate Admissions, Enrollment Services, the Bursar's Office, Student Financial Services, the Registrar, the Office of Diversity, the Office of International Engagement, and the School of Graduate Studies.

"It's going to be a big improvement, and a real time saver, for students to be able to take care of all their university-related needs in one central location," says Dr. Kristi Motter, Vice President for Student Affairs. "But it's not a question of functionality over form. This building will be a beautiful new addition to the campus landscape on top of serving a vital role to current and prospective students."



The new Student Services Building will open in the spring of 2016.

The project began last fall with a request for proposals. Hughes and his fellow planning committee members received submissions from 19 firms, 6 of which were selected for on-campus interviews. The unanimous winner was Nola | Vanpeurseem Architects, the same group that designed and built UAH's Severe Weather Institute and Radar & Lightning Laboratories (SWIRLL) and Charger Village Residence Hall.

Hughes describes their design as "aesthetically pleasing," with brick and zinc panels. "It's going to be a very contemporary building," he says. "The design will be complementary to the Shelby Center but is intended to be the focal 'front door' of campus. As such, it will provide an identity for the first-time visitor and the community as a Welcome

Center and student service area."

As always, safety was a guiding principle in the new building's construction. Because it contains no classrooms, it was not required by state mandate to include a tornado shelter. There is, however, a designated safe zone in the event of severe weather. "We have enhanced the structure for a portion to provide a safe place to go, similar to a tornado shelter," says Hughes. "It can accommodate everyone in the building."

The building is also a significant improvement over its predecessor in terms of sustainability. Designed with LEED Silver guidelines in mind, Hughes says its interior will employ renewable products while a "tremendous amount of windows" will encourage the use of day lighting over electrical lighting.

Moreover, its HVAC system will be tied into UAH's central plant for heated and chilled water. "This eliminates the need for independent equipment at the building, allowing us to install just pumps instead of chillers and boilers," says Hughes. "So there are considerable material savings to the cost of the system and to the total operational cost of the building."

Now all that's left is to complete construction on the \$15 million building. With the foundation, rough-in plumbing and electrical, and steel portions already finished, the grand opening is tentatively set for the spring of 2016. And after that? The UAH campus will welcome students and visitors alike, as it always has – only this time with a new front door.



Short and Sweet

Aleksandra Pivovarova, a UAH graduate student in the Department of Biological Sciences, placed second at the Regional Three Minute Thesis (3MT[®]) Competition held in New Orleans, LA, this March. Pivovarova qualified to participate in the event, which was hosted by the Conference of Southern Graduate Schools, after placing first in UAH's 3MT competition this past fall.

"This is a tremendous honor for Aleksandra and for our faculty," says Dr. David Berkowitz, Dean of the School of Graduate Studies. "This is the second year that a UAH student has been among the winners of the competition, so it's clear our biology students are being well received for their ability to do research and to communicate it in a clear and simple manner."

Pivovarova, a native of Kemerovo, Siberia, was one of 26 graduate stu-

dents to compete in New Orleans. "The competition was fierce, but in the best way possible," she says. And though she ultimately lost to a presentation by a doctoral student in neuroscience, she was "excited and surprised" about her second-place win – as was her mom. "She said, 'Not bad for a girl from Siberia,'" says Pivovarova with a laugh.

As before, her presentation – entitled "The Effect of Monocarboxylate Transporters Inhibition on Viability of MCF7 and MDA-MB-231 Breast Cancer Cell Lines" – focused on identifying factors that contribute to cancer growth and then using them against cancer. Prior to heading to New Orleans, she sought guidance on improving her delivery from UAH Communication Arts professor Kristin Scroggin. "Her input allowed me to refine my communication skills and greatly improved my overall presenta-

tion," says Pivovarova.

As a result she was able to stay focused in spite of both the larger crowds and the stiffer competition. "I realized that I was simply trying to explain what I do in the lab in the way that would, hopefully, make the people in the room just as excited about my research as I am," she says. "Although I was still quite nervous, now I feel a lot more comfortable with presenting in front of a big audience."

Still, it was only once the competition was finally over that Pivovarova jokes she "was finally able to breathe!" – and finally able to explore the city around her. "I spent a few hours just walking in downtown New Orleans, and I absolutely loved it," she says. And while she may not have taken first place at the 3MT, Pivovarova says she still won in the end. "I am such a foodie, so eating the local dishes was the best reward for me!"

Helping Hands



When a patient is readmitted to the hospital within 30 days of discharge because they failed to receive adequate care, it's known as an avoidable readmission. And unfortunately it happens more frequently than it should, particularly among medically underserved populations like the elderly and those who live in rural areas.

"Many of these patients are eligible for transition services, but if the referral is not made prior to discharge, then they fall through the cracks and have to manage on their own," says Maria Steele, a clinical assistant professor in UAH's College of Nursing.

The Centers for Medicare & Medicaid Services (CMS) recently launched a new initiative under the Affordable Care Act called the Community-based Care Transitions Program (CCTP). Its goal is to facilitate the coordination of community partners to improve the care patients receive as they transition from the hospital to their homes.

Among the organizations selected to participate in the program is Huntsville-based Top of Alabama Regional Council

of Governments (TARCOG), the region's designated Area Agency on Aging. And assisting with this endeavor is UAH's College of Nursing, a longtime TARCOG partner through its Coalition for Health Enhancement of Elders and Referral Services (CHEERS) project.

"I teach a course called 'Caring for Families, Aggregates, and Populations: Theoretical Applications,' and CHEERS is an option for the clinical requirement," says Steele. "So when TARCOG was selected for the CCTP, we teamed up to focus on medically underserved populations in the Huntsville area."

It starts with the CCTP coach, whose job it is to coordinate the patient's care services as they transition from the hospital to their home. "The coach tells the patient about our program and asks if they would like an RN to come visit them for eight weeks and help with health assessment," says Steele. "If the patient agrees, our student contacts them to set up the first home visit."

During that visit, the student will develop a teaching plan that identifies the patient's main risks. "We focus a lot

on risks in the home – fall prevention, and medication safety and compliance," she says. The teaching plan is then executed over the next two months, with the student visiting weekly and Steele herself visiting at least once to ensure the program is on track.

Steele says she's received feedback from many of her CHEERS students about just how "eye-opening" the experience is. "It broadens their understanding of different problems in the community, and it makes them more knowledgeable about what services would be helpful in the home for elderly patients or patients in rural areas," she says.

And as for the patients themselves? "Hopefully, at the end, they are more knowledgeable about self-care management of their illness." That may not sound like a lot, but to the people who receive these services – particularly those not eligible for home healthcare – it's invaluable. "Getting our skilled nurses into the community," says Steele, "can make the difference between a patient being readmitted to the hospital and being in their home."

The University of Alabama in Huntsville

Making Charger Pride a Family Tradition

“I wouldn’t have even thought of going anywhere else for my graduate degree,” says Ginnie Patterson. “UAH feels like home and it’s so familiar, and I’m also getting an accredited degree at one of the top business schools in the state.”

It’s considered a legacy when a child attends the same university as their parent or grandparent. But the Patterson siblings are creating their own single-generation legacy at UAH. Five have already pursued their academic career at UAH – Albert is a recent graduate; Ginnie, Elizabeth, and Marie are currently attending; and Joseph is enrolled for the fall semester. And as for the remaining four? “Most likely they’ll go to UAH too!” says Ginnie.

Albert, the eldest son, can be credited with beginning the family tradition. “I have wanted to be an engineer ever since I can remember, so UAH was the logical choice,” he says. After earning a bachelor’s degree in mechanical engineering and a master’s degree in industrial systems engineering, Albert landed an analyst position at Computer Sciences Corporation. “I was recruited and hired almost two months before graduation, and the company was willing to wait for me.”

Ginnie was the next to attend, earning an undergraduate degree in accounting before deciding her senior year to stay on; she’s now about to complete her

master’s degree in business administration. “I wouldn’t have even thought of going anywhere else for my graduate degree,” she says. “UAH feels like home and it’s so familiar, and I’m also getting an accredited degree at one of the top business schools in the state.”

Elizabeth followed soon after, opting to study industrial systems engineering. “I was always more of a technically minded person, and I love efficiency and organizing things,” she says. Currently a junior, she’s already been accepted into the university’s Joint Undergraduate Master’s Program, which will allow her to graduate with both her bachelor’s and her master’s degrees in just five years.

Marie, a sophomore, knew when she arrived that engineering wasn’t for her. “It’s not in my blood,” she says laughing. So she decided to go the business route like her sister Ginnie. “I chose management because I thought it was a good middle ground.” And she chose UAH, she continues, not just because her siblings were already there but also because she knew it would be the perfect fit. “It’s Southern, like us.”



Rounding out the quintet is Joseph, who will begin classes as an industrial systems engineering major come the fall semester. Like Albert and Elizabeth, his mind leans toward the technical – “I want to own my own manufacturing facility to do custom machining,” he says – making his decision about where to go to school easy. Not to mention, of course, the family tradition. “Growing up, UAH is what you’re used to,” he says.

Perhaps the most incredible thing about the Pattersons, however, is not that they have all chosen to attend UAH. It’s that they’ve managed to do so without incurring any debt. “We have zero student loans,” says Ginnie. Instead, each has received a combination of merit, presidential, and departmental scholarships that has allowed them to cover the cost of tuition.

For any expenses not covered by tuition, on-campus jobs fill the gap. Ginnie is a graduate research assistant in the School of Graduate Studies, Elizabeth is a student assistant for the Alumni Association and a peer academic coach for the Student Success Center, and Marie is a student assistant for Gradu-



ate Studies. Albert, meanwhile, relied on a combination of jobs – including a 15-month internship with Boeing – to help pay the bills.

Yet they all still manage to carve out time for extracurricular activities. Ginnie, a former UAH Lancer, volunteers with SaveFirst, which helps low-income families prepare their taxes. Elizabeth, a current Lancer, enjoys reading and watching classic movies. And when she’s not baking artisanal breads, Marie sings with her sisters in their church choir. “It’s a challenge because we have to sing in Latin,” she says.

It adds up to a full and happy life – one that may not have been possible had the Pattersons chosen to attend different schools. “It’s been easier for us to fit in because people know the Patterson name,” says Marie about life on campus. There’s also something to be said for having a support system so close at hand. “If our car battery dies, we can call each other.”

The benefits don’t stop after graduation, either, as Albert can attest. Thanks to his two UAH degrees, he’s earned the respect of his colleagues and a reputation



as “the guy who gets it done and done well no matter what.” And while he may not have intended to start a family tradition, going to UAH has proven to be “one of the best decisions of my life,” he says.

As for whether he’ll encourage the four youngest Pattersons to follow suit, he says he probably won’t have to. “They wear UAH t-shirts around everywhere and like to tell people that they are going to college at UAH ‘when I grow up,’” he laughs. There’s just one possible outlier – a younger brother interested in architecture, which isn’t offered at UAH. But even then, the siblings have a plan.

“He can go to graduate school somewhere else,” says Ginnie, “but we’ll make him go to UAH first!”

◀ Ginnie, who is currently pursuing her MBA, is the eldest of the three Patterson sisters currently attending UAH.

▲ Elizabeth is in her junior year as an industrial systems engineering major, but will stay on to earn her graduate degree as part of UAH’s Joint Undergraduate Master’s Program.

▶ Like her sister Ginnie, Marie is interested in a career in business. She is already halfway through her undergraduate degree in management.

Battery research charged up by NSF grant



Dr. George Nelson with batteries ready for testing and an X-ray nanotomography result on the computer in his lab at the Shelby Center for Science and Technology.

A \$502,000 National Science Foundation (NSF) Faculty Early Career Development (CAREER) Program grant is funding research by Dr. George Nelson, an assistant professor of mechanical and aerospace engineering, into nanomaterial cathodes for lithium-ion batteries. Nanomaterials may make the trade-off between high battery power and smaller size a more favorable one over the wide temperature variations experienced by cars and other devices.

"There have been a number of studies that have documented the variations in battery lifetime caused by variations in temperature," Dr. Nelson says. For example, parking an electric car in the sun instead of the shade can shorten its battery life by as much as two years, costing upwards of \$700 in lost use. "This amount of money does have an impact when you multiply it over the entire marketplace."

One solution is a larger batter. But that

leads to increased use of rare materials like lithium and has environmental impacts when it comes to dealing with the spent batteries, he says. It also increases vehicle cost. "We're looking at how we can design these batteries more efficiently from the nanoscale up," Dr. Nelson says.

To do that, UAH scientists are synthesizing nanomaterials in the College of Engineering's Transport Reaction and Energy Conversion Lab at the Shelby Center for Science and Technology with a goal of understanding how the use of nanomaterials impacts reliability of the battery's cathode at higher operating temperatures. Traditionally, cathodes are made of larger materials on the micron-size scale that fit together more loosely than the smaller nanomaterials.

"There are a lot of people pursuing nanoscale battery materials," he says. The benefit of nanomaterials is that they have much greater surface area for the

chemical interactions that create electric current, resulting in more power for their size. But that can also be a drawback when it comes to lifespan over a wide temperature range. "We suspect that increased temperature will shorten battery life for these materials, more so than traditional materials."

UAH researchers are charging and discharging batteries made with different cathode compositions at various temperatures and using X-ray nanotomography to observe changes in the cathode structure. Together these studies will help determine which higher-power nanomaterials has the longest lifespan.

"I was very, very fortunate to win the CAREER award and an NSF Collaborative Research grant to support our battery research," says Dr. Nelson, who was awarded the Collaborative Research grant in July. "It's a once in a lifetime opportunity, and I look forward to making the most of it."

Grad student lasers in on grant



Amanda Black Clark and Dr. Don Gregory use a developmental test bench laser in UAH's Optics Building.

“Our mission is to develop high-energy lasers to intercept rockets, mortars, and unmanned aerial vehicles,” says Amanda Black Clark.

Amanda Black Clark landed a \$400,000 competitive grant from the Department of Defense High Energy Laser Joint Technology Office for a team effort to develop and test diode-pumped xenon laser technology for the U.S. military.

Clark, who is a UAH doctoral student in Optical Science and Engineering, was

the lead author of the awarded proposal and successfully defended it in Albuquerque, NM, in December; she also works for the U.S. Army Space and Missile Defense Command/Army Forces Strategic Command (SMDC/ARSTRAT) Technical Center's Directed Energy Division.

In addition to UAH and SMDC/ARSTRAT, team members include NASA Marshall Space Flight Center's Environmental Effects Division and the Air Force Research Lab's Directed Energy Directorate. “Our mission is to develop high-energy lasers to intercept rockets, mortars, and unmanned aerial vehicles,” says Clark.

The atomic-level spectroscopy basic research investigates the physical laser parameters in multiple xenon isotopes using a developmental test bench laser in a lab in UAH's Optics Building. “We are building it at UAH to test out the concepts involved,” says Dr. Don Gregory, a distinguished professor of physics and Clark's advisor.

Historically, the military has developed chemical reaction gas lasers that can pose byproduct disposal problems, Clark says, but in more recent years it has moved toward electrical lasers, typically diode pumped solid state. “From a military standpoint, all you need to operate these types of lasers is electricity,” she says. “That's a lot easier to manage than chemical drivers.”

The researchers are measuring the efficiency and power of diode-pumped xenon lasers, which could one day supplant the older technologies. “We are trying to reduce the amount of power and the size and weight required to operate a laser,” Clark says.

The spectroscopy research explores methods of perfecting semiconductor diode power coupling in xenon atoms and stabilizing electron energy levels. The wavelength produced with this new xenon laser is comparable to previous electric high-power solid-state lasers.

RESEARCH



Clockwise from left, RSESC research scientist Thor Wilson, MSFC's Steve Pavelitz, ESSC principal research scientist Mike Stewart and MFSC's Brents Pepper examine the ISS LIS electronics box with NASA quality assurance personnel in a UAH National Space Science and Technology Center clean room.

Enlightening our understanding of lightning

An expanded view of lightning around the globe is coming closer now that UAH researchers have passed NASA qualifying inspections and shipped out a Lightning Imaging Sensor (LIS) for a planned March 2016 flight to the International Space Station (ISS). UAH's Earth System Science Center (ESSC) was the ISS LIS technical and scientific lead on the project, while the university's Rotorcraft Systems Engineering and Simulation Center was the program manager and lead systems engineer.

The ISS LIS was originally built as a flight spare for an LIS mission that launched in November 1997 aboard NASA's Tropical Rainfall Measuring Mission (TRMM). This current model will be used to detect the distribution and variability of total cloud-to-cloud, intracloud,

and cloud-to-ground lightning that occurs in the tropical regions of the globe.

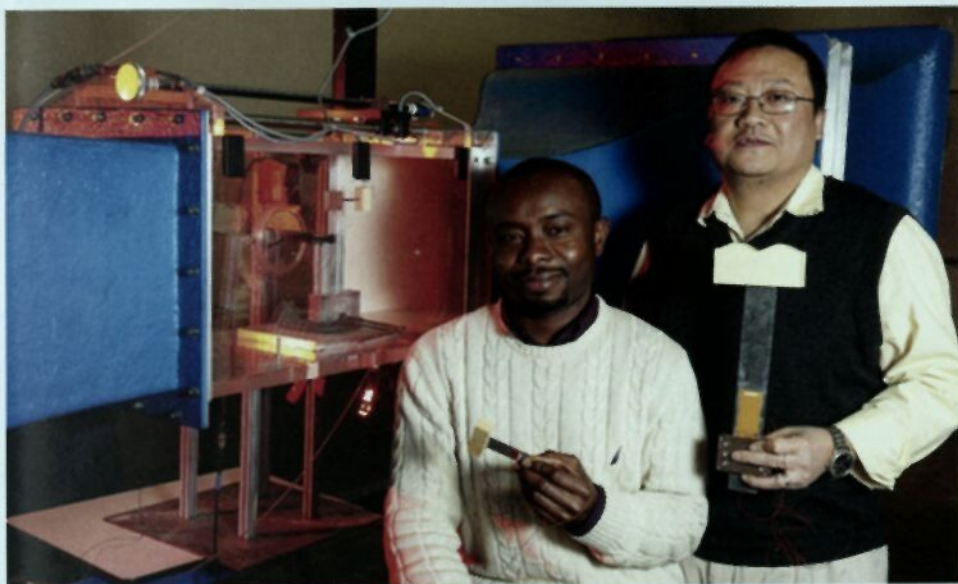
"This development is an excellent follow-on to the original LIS, extending our ability to observe global lightning activity over a longer period of time," says Dr. Hugh Christian, principal researcher at ESSC and the principal investigator for the ISS LIS instrument. "Further, ISS LIS will be in a higher orbital plane, thus extending our observations to higher latitudes."

Funded by NASA, ISS LIS is being shipped to the Johnson Space Center to be integrated onto the Space Test Program H5 spacecraft. The spacecraft will then undergo environmental testing through August 2015 before being transferred to Kennedy Space Center for integration onto the EXPedite the

Processing of Experiments to Space Station (EXPRESS) Pallet Adapter (ExPA). The ExPA will in turn be attached to a SpaceX Dragon Capsule for the 2016 launch.

ISS LIS will be launched at about the same time as the Geostationary Lightning Mapper (GLM), much of which was also designed and developed at UAH. It will provide significant validation data for the GLM. There will also be complementary instruments on the space station to enable researchers to extend knowledge of Terrestrial Gamma Ray Flashes (TGF).

"We hope to continue our studies of lightning and severe weather, investigate the relationship between global lightning activity and climate change, provide validation for the GLM, and improve our understanding of TGFs," says Dr. Christian.



Felix Ewere and Dr. Gang Wang pose near a wind tunnel they use for testing in UAH's Olin B. King Technology Hall.

Whale Watching

Taking a note from nature's playbook

How can a humpback whale and a device that works on the same principle as the clicker that starts your gas grill help an unmanned aerial vehicle (UAV) fly longer and with more stability? It all starts with biological structures called tubercles that the whale uses for its unique maneuvers in the ocean.

UAH doctoral student Felix Ewere made a mechanical version of the wavy-looking biological structures and attached it to a piezoelectric energy harvester. The piezoelectric principles the harvester uses convert mechanical action into electricity just like the red piezoelectric button on your gas grill does.

"For anything under the action of fluid, two forces are created – a lift force and a drag force," Ewere says. "For the humpback whale, these tubercles increase the lift and reduce the drag as it moves through the water. They are what enable it to breach the surface of the water."

Borrowing from the whales, the new

device is used to harvest energy and can be employed as an airflow or fluid speed- and direction-sensing device. So UAV designers can use the "galloping piezoelectric" principle to design better craft by placing piezoelectric sensor devices all over their models to test them to determine how they behave in the fluid currents of air. Plus, they can attach the devices to the UAV as harvesters to generate power to extend its battery range.

The initial problem was to determine whether greater efficiency using wind could be attained so that the piezoelectrics could better harvest energy. "I just threw the question to him, and he found the answer for me," says Dr. Gang Wang, assistant professor of mechanical and aerospace engineering and Ewere's advisor.

The pair used wind-tunnel experiments to get more force and induce more strain to improve energy-harvest-

ing ability. It turned out that efficiency wasn't increased, but they discovered through experimentation that the devices could serve as a form of passive control. That makes them useful as measuring devices for air flow speed and direction.

Work has progressed on miniaturizing the components to widen applications. Its energy-harvesting capabilities are also being explored for use in charging the batteries that power small devices to track bird populations, extending their research life. Now the theoretical work and design concept phases are drawing to a close, and Dr. Wang is looking for applications funding.

"For three or four years now, we have been drawing up the basics of this, and we have done the basic research," Dr. Wang says. "Now I have the tangible benefits for it, but to take it to the next level, I need a boost from an interested funding agency."

PAYING IT FORWARD



Chapter president David McNair says he and his fellow members "all have that 'someone helped me so I want to give it back' mentality."

Photo courtesy of the Redstone Rocket

The National Society of Black Engineers (NSBE) has a student chapter at UAH, but don't let the name fool you. "We represent all minority students in the engineering fields," says junior mechanical engineering major and chapter president David McNair. "And we've even been working on having non-engineers join us!"

Indeed, since being elected to the top spot last year, McNair has made an effort to expand the focus of the chapter to include any underrepresented students with the shared objective of being culturally responsible and academically and professionally successful. "It's like a support network," he says. "I want to give those who need help and have the same goals that we have somewhere to go."

UAH's chapter is currently the largest in Northern Alabama. It is overseen by an executive board and comprises four committees – fundraising, outreach, national conference, and rocket launch – with meetings for each held on a rotating schedule. The chapter also holds monthly general body meetings, which often feature guest speakers on topics of interest to members.

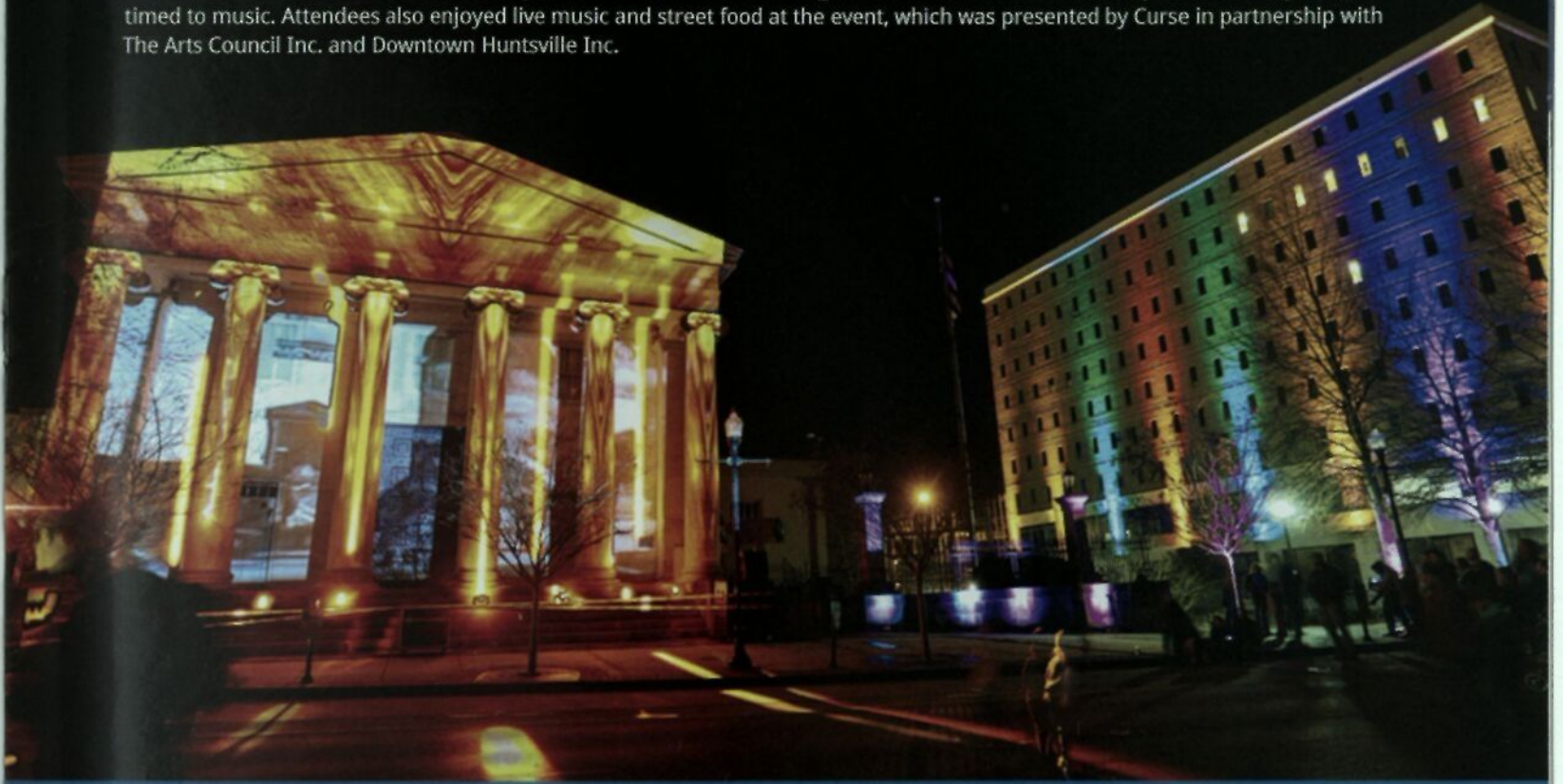
Between meetings, the chapter occasionally partners with fellow student-run organizations like the Society of Hispanic Professional Engineers and the Society of Women Engineers for philanthropic, fundraising, and networking events. However, McNair says that nothing beats the NSBE's regional and national conferences when it comes to meeting new people. "The experiences they provide for young minority science and engineering students is invaluable."

Both last year and this, UAH's NSBE chapter raised enough funds to send not only their own members to the conferences, but also students from other NSBE chapters in the state as well. "What kind of person would I be if I had something and didn't give it to someone else?" he says. "We all have that 'someone helped me so I want to give it back' mentality."

And that's really the ultimate goal of the chapter, says McNair. "We're trying to make engineers who are culturally responsible community servants." But as with any student-run organization, it can sometimes be hard to build momentum in the face of the relentless turnover that college graduation brings.

That's why he's charged the executive board with mentoring younger members who can one day take over as the chapter's leaders – and with continuing to recruit new members as soon as they arrive on the UAH campus. "I don't want to be the person who says, 'I'm done,' and leaves it all in a mess," says McNair. "I want those people who come after us to go way further than we did."

- Team UAH took the top prize at the second annual LIGHT + INNOVATION + TECHNOLOGY (LIT) event, which was held Saturday, March 7, in downtown Huntsville. Four teams competed in total, each illuminating different sides of Courthouse Square with a digital light show timed to music. Attendees also enjoyed live music and street food at the event, which was presented by Curse in partnership with The Arts Council Inc. and Downtown Huntsville Inc.



LIGHT + INNOVATION + TECHNOLOGY



MAKING CHANGE

Green Fund enables student-led sustainability



“Michael’s proposal was exactly what I envisioned when we started the Green Fund,” says Haley Hix.

UAH
GO GREEN

What do a composting facility, a solar-powered charging station, and a net-zero-energy lab have in common? They’re all sustainability initiatives proposed by UAH students in hopes of receiving Green Fund support.

Created in 2013, the Green Fund “gives students the financial resources to pursue environmental projects on campus,” says Haley Hix, UAH’s Sustainability Coordinator and Director of the Chargers for Sustainability.

To apply, students must first ensure their project falls into one of two categories: it educates the UAH community about sustainability,

or it makes the campus more environmentally friendly. They must also submit a proposal that includes a description of the project, a budget summary, a timeline, and at least one letter of support from a faculty or staff advisor.

All proposals are then reviewed by the Green Fund Committee, which is made up of roughly a dozen students and faculty members who each serve a one-year term. Anyone can apply to join the committee, but members must be willing to attend two meetings a year to choose new projects and evaluate the progress of ongoing ones.

Last year, says Hix, the Green Fund Committee accepted two proposals. The first was a Ban the Bottle initiative that challenged UAH students to reduce their reliance on bottled water. “They asked for a modest grant to purchase and pass out reusable water bottles and to host an on-campus event to educate the community about the amount of waste associated with bottled water.”

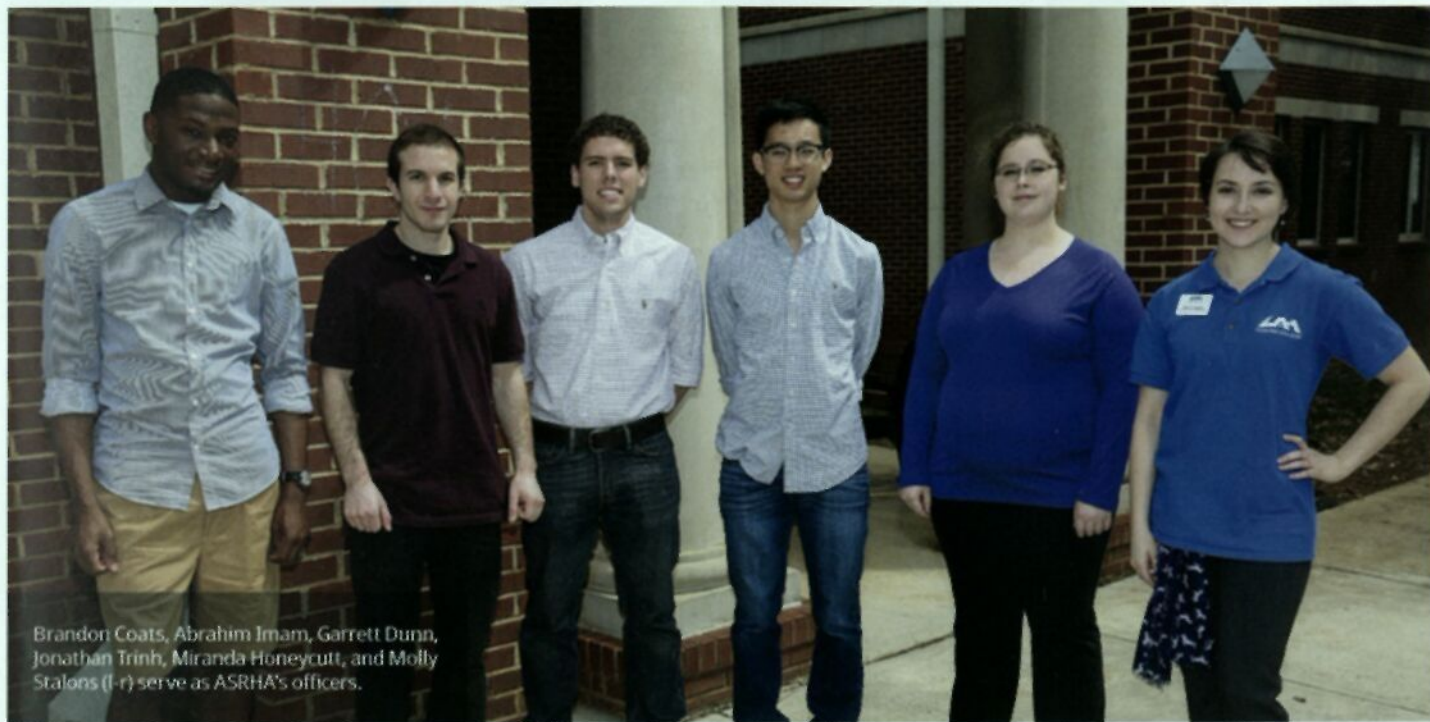
The second was a sustainable natural fertilizer initiative to brew organic compost tea for UAH’s Community Garden.

Submitted by senior biology major Michael Marshall, who also serves as the garden’s director, the proposal received \$10,286 to cover materials needed for the solar power and rainwater fueled composting system.

“Michael’s proposal was exactly what I envisioned when we started the Green Fund,” says Hix. “It meets both criteria – it educates students about sustainable gardening practices through hands-on experience, and it improves the campus environment by creating a natural fertilizer that can be used by our grounds crew.”

This year, Hix hopes the Green Fund Committee will fund several more – and more ambitious – proposals. “In terms of student-led sustainability initiatives, we’re already far ahead of other universities in Alabama,” she says. “But I’d like to see some projects that have a bigger impact and a greater return on investment.”

Of course that shouldn’t stop anyone from submitting a proposal in the meantime, she is quick to add. “Big or small, we’re always looking for the next great idea!”



Brandon Coats, Abraham Imam, Garrett Dunn, Jonathan Trinh, Miranda Honeycutt, and Molly Stalons (l-r) serve as ASRHA's officers.

Reaching Out

Garrett Dunn has always been interested in healthcare. Now he's doing his part to bring it to those who need it most – Alabama's rural residents – as president of the Alabama Student Rural Health Association (ASRHA) at UAH.

"A lot of people think rural underserved areas are hours away, but they can be right outside your door," says Dunn, a senior biology and chemistry double major in UAH's Pre-Health Program. "So we want to raise health awareness in these areas and show students that they can go into health fields to help underserved populations."

To that end, the ASRHA hosts activities, informational workshops, and volunteer events to educate students and the community at large about rural health issues. They have also partnered with the North Alabama Medical Reserve Corps and the National Alliance on

Mental Illness on a variety of service and outreach projects.

Just as important are the chapter's efforts to encourage students to pursue a career in rural healthcare. "Every year we have students from a medical school come and talk to us about rural internships, answer questions, and give advice," he says. Ultimately, he hopes to extend that effort to an even younger demographic. "Studies show that people from rural areas tend to go back and serve rural areas, so we want to set up a mentoring program for rural middle and high school students."

Dunn is only the second student to serve as president of the ASRHA, which was founded in 2013 by UAH alumnus Aaron Henslee. The chapter has close to 30 members and requires only a modest \$15 in dues each academic year. Meetings are held monthly, and the

chapter periodically hosts spirit nights at area restaurants to help raise money for their philanthropic goals.

Not all students in the ASRHA are rural, however. Dunn himself is from Huntsville. But all are interested "in finding out ways they can give back," he says. And he's hopeful it will stay that way. "Our other officers are all juniors and under, so they'll be there to carry on the torch."

As for Dunn himself, he'll soon be graduating and pursuing his own healthcare career. Thanks in part to his extracurricular participation in the ASRHA and an internship with the HudsonAlpha Institute for Biotechnology's prestigious BioTrain program, he was accepted to medical school. That may or may not lead to a residency in a rural area, but if it does, Dunn says, "there are definitely upsides!"



OPENING DOORS

As a well-established professional in the pharmaceutical industry, Talitha Hampton-Mayo ('09 MSE CHE) has attended many meetings. But she can still recall the one with Dr. Mark Bower, then dean of UAH's College of Engineering, about whether she should attend UAH for her graduate degree in chemical engineering.

"Dr. Bower cleared his calendar that day to learn more about me and help me work through my academic options – he never once pushed UAH on me," she says. "Because of that experience, I felt that UAH was the place for me."

And the decision has since paid off. "My UAH degree has absolutely opened doors for me," says Hampton-Mayo, now a project manager at AstraZeneca. "A graduate degree, particularly in engineering, signals that you not only have the commitment to your discipline, but that you have the mental toughness to see an objective to completion."

While at UAH, Hampton-Mayo relied on the wise counsel of her co-advisors: Dr. C.P. Chen, professor of chemical

and materials engineering, and Dr. Emanuel Waddell, associate professor of chemistry. "They pushed me and encouraged me to try new things," she says. "I would not have finished without their guidance."

She also found support as a member of UAH's Minority Graduate Student Association, where she met her future husband David Mayo ('08, MSE). Thanks to the efforts of faculty advisor Dr. Adriel Johnson, Hampton-Mayo says the group created a sense of community that "allowed us to encourage each other, push for academic excellence, share best practices, learn from more experienced members, and mentor those coming behind us."

Today, Hampton-Mayo does the same for up-and-coming career professionals. As vice-president and president-elect of the National Association for the Professional Advancement of Black Chemists and Chemical Engineers, she is both a mentor and a leader. "Early career professionals of all ethnicities and backgrounds must learn how to be flexible

and creative and develop a brand that positions them for success," she says.

She offers these business strategies for getting ahead:

- ▶ Develop and manage your professional brand. Executives, entrepreneurs, and professionals do not accidentally wind up at the top; they create a brand that takes them there.

- ▶ Cultivate a network that is always expanding and includes a diverse mixture of people, careers, experiences, and ideas. The more exposure you have and the larger your network is, the greater the probability is of someone knowing the great work that you are doing.

- ▶ Be BIG and LEAN IN. Hampton-Mayo's mantra: "If you are not at the table, then you are on the menu."

- ▶ Give back. There are a lot of people who have helped you get to where you are, and you have a responsibility to do the same for others.

Lastly, make a difference. "Every day that I come to work," she says, "I know that doing my best work contributes to a better life for someone else."

Playing at Work



“I use the composition, performance and theory knowledge, and skills that I learned at UAH every day,” says Andy LeGrand. “The same goes for the marketing and accounting courses from the business portion of my degree.”

Andy LeGrand ('07 BA Music) may be the successful owner of LeGrand Music Studios in Knoxville, TN, but he still remembers the sage advice that Phil Weaver, classical guitarist and adjunct instructor at UAH, shared with him during his days as a music student. “You’ve just gotta get out there and play,” he would say. “Just do it. Make things happen within a music scene.”

It stoked a passion LeGrand had had since the age of four, growing up in Atlanta, GA. “My father taught me my first melody on the guitar,” he says. “I was in a children’s choir when I was a boy.” Later, he attended Pebblebrook High School, a performing arts conservatory, where he “toured heavily” with a vocal trio. It wasn’t until 2004, however, that he opened his own studio in Guntersville, AL, where he and his wife Holly had moved for her job.

Shortly thereafter, LeGrand says, “I was fortunate enough to find the UAH Music Department.” Over the next couple of years, he completed his coursework for a degree in music, adding a sec-

ond area of study in business. “I use the composition, performance and theory knowledge, and skills that I learned at UAH every day,” he says. “The same goes for the marketing and accounting courses from the business portion of my degree.”

Another move – this time to Knoxville, TN – gave LeGrand the opportunity to expand the studio’s offerings. The pair also considered expanding their own family. “I knew that I would want to spend more time at home than away if we did have children,” he says. “So I began to move into other music service areas like recording, mixing and editing, sheet music publishing and sales, and digital track creation.”

That planning paid off. Now a father, LeGrand says the studio’s main focus is teaching music education to youngsters. “For the past few years, guitar has been the focus of the studio, but we’ve expanded to offer piano, voice, mandolin, ukulele, banjo, saxophone, and clarinet lessons,” he says. “We also offer ensembles and classes in music theory, music appreciation, and an Appalachian Dulcimer class. We even teach guitar lessons via Skype or FaceTime!”

Add in overseeing eight instructors, and it all adds up to more than a full-time job. “We are, by choice, involved with so many activities that time seems to slip away from us,” says LeGrand. But while he may no longer have the freedom he once did to pursue his own passion as a performer, there’s something to be said for encouraging his students to follow theirs as Phil Weaver once did for him. “It is a great feeling when a student masters a work and presents it with beauty,” he says. “It is very nice to sit back, close my eyes, and listen to a student play well.”

Lending Support



UAH alumnus Derek Greer serves as one of seven disability resource coordinators in the state of Alabama.

“Had it not been for the assistance I received at UAH, the Alabama Institute for Deaf and Blind, and the Vocational Rehabilitation Service, I don’t think I would have been able to graduate,” says Derek Greer.

Derek Greer ('12 BA SOC) knew that the middle of Holmes Avenue was not a safe place for pedestrians. But between the setting sun and encroaching darkness, his visual disability was preventing him from finding his way across. Suddenly, two strangers approached and helped him to the other side. It was a moment he wouldn't forget, even long after he graduated from UAH with a degree in sociology.

Today, Greer is helping people in much the same way. He serves as a disability resource coordinator for the state of Alabama, helping individuals with disabilities obtain training, education, and employment. His office is located in the Hanceville Career Center, but he spends much of his time on the road, visiting clients in the four counties under his purview: Cullman, Blount, Morgan, and parts of Marshall. “It’s a very big job,” he says.

The position of disability resource coordinator is, in fact, a new one for the state. Seven were hired last year as part of the Disability Employment Initiative, a joint effort of the Department of Labor’s Employment and Training Administration and Office of Disability Employment Policy. The initiative brings together local, state, and federal resources to improve opportunities and outcomes for those with disabilities who are unemployed, underemployed, and/or receiving social security disability benefits.

“The idea is for me to be Google, so that if someone has a problem, it’s my job to solve it!” says Greer. “I consolidate a lot of different services so the client

doesn’t have to go from point to point to point. The result is individualized customer service from start to finish.” That can mean arranging transportation to and from a place of employment, locating affordable housing or health-care, finding funds for food or medical supplies – and the list goes on.

Some of it is unfamiliar to Greer, who previously worked as a certified diamondologist. But not all of it. “The program is very similar to the process I had gone through while I was at UAH, so I was aware of how important it is,” he says. “Had it not been for the assistance I received at UAH, the Alabama Institute for Deaf and Blind, and the Vocational Rehabilitation Service, I don’t think I would have been able to graduate.”

It was Greer’s advisor, UAH sociology professor Dr. Mitch Berbrier, who initially suggested he visit the university’s on-campus Disability Support Services (DSS) Office. “I had no idea where to go or what programs were available to help me – all I knew was that my grades were slipping and I was having trouble keeping up with higher-level courses,” he says. “Mitch recommended a disability coordinator.”

The DSS Office, in turn, put him in touch with the Alabama Institute for Deaf and Blind, and the Vocational Rehabilitation Service, and together the three provided the services Greer needed to get back on track. “Mitch made a difference in my life,” he says. “He’s just a really good guy with a heart to help students at UAH. Had it not been for his dedication to my personal success, I wouldn’t be where I am.”

ALUMNI



Greer appeared in UAH Theatre's spring 2012 production of *Where the Great Ones Run*.

And he wasn't the only one. David Harwell, director of UAH Theatre, also played "an important role," approaching Greer one day after theater appreciation class and encouraging him to perform. "It broke me out of my shell when it came to speaking to people," says Greer, who went on to appear in *Red Scare on Sunset*, *Rantoul and Die*, and *Where the Great Ones Run*. "I loved it!"

Needless to say, he has little time for acting nowadays between his busy job and a growing family. But he still uses the skills he picked up while on stage and in class at UAH.

"I learned amazing communication techniques through the Communication Arts Department and the Theatre Program," he says. "It opened my eyes to being able to see what people were saying when they weren't speaking, and it's given me the ability to begin to read people."

That's key in a position that requires strong interpersonal skills. Yet Greer brings something more to the table, something many of his colleagues do not: the deep empathy that comes from walking in another's shoes. "I was on social security disability benefits because of

physical limitations," he says. "I've been able to break free and gain a substantial increase in income on my own terms by working. It provides a great sense of accomplishment and success."

Now that sense of accomplishment and success is what he wants for all of his clients. And he's not going to give up until he helps them achieve it, the same way others – from his supportive professors to kindly strangers helping him across a busy road – didn't give up on him. "Their impact influenced me to do what I do and help other people," says Greer, "and I want to pay it forward."



Kerry Kennedy of Honeywell Aerospace presents Barnhart with the Honeywell Hometown Heroes Award.

Deborah Barnhart, CEO of the U.S. Space & Rocket Center and UAH alumna ('75 BA English), was honored with the Honeywell Hometown Heroes Award earlier this year. "I am humbled and honored to accept this award," said Barnhart, who was recognized for her compassion and dedication to making Huntsville a better place to live and work.



Social Media

Check out our most popular social media posts from the last few months.

UAH once again named best return on investment
<http://on.uah.edu/1BpQmjw>

Nationally recognized artist Tierney L. Malone visits UAH for Black History month
<http://on.uah.edu/1wY9FUO>

UAH graduate students win big at 2015 Science & Technology Open House
<http://on.uah.edu/1zpEbg3>

Two new initiatives will further reduce UAH's carbon footprint
<http://on.uah.edu/1zEp2E3>

UAH Honors College celebrates new home in Frank Franz Hall with ribbon cutting
<http://on.uah.edu/1GLHAGK>

Mentoring program pairs UAH's "best and brightest" with city's business leaders
<http://on.uah.edu/17E4CUy>



Athletics

SEASON HIGHLIGHTS

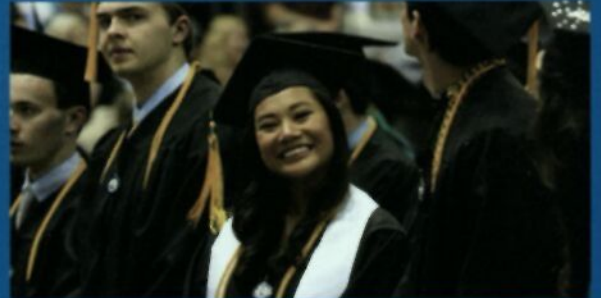
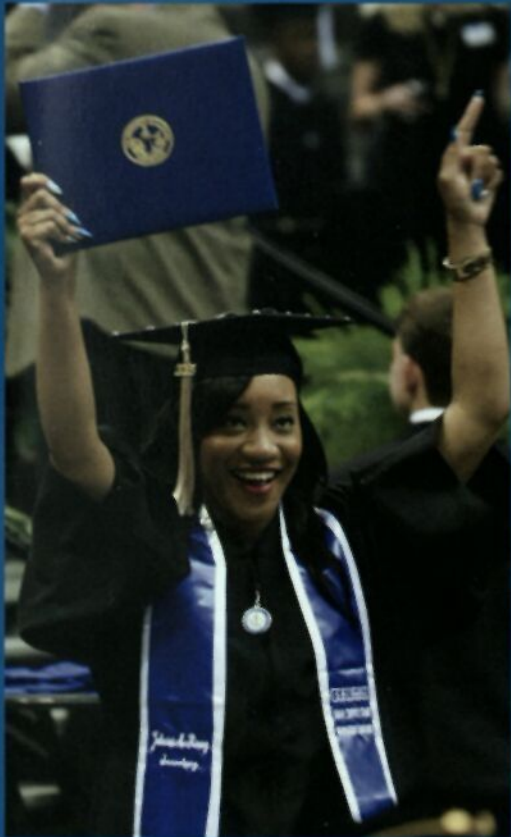
- ▶ Hockey earned a berth in the WCHA playoffs in just its second season in the prestigious league.
- ▶ Women's indoor track and field had a pair of runners earn All-American at the UAH-hosted NCAA Division II Indoor Track and Field national championships.
- ▶ Men's soccer obtained its first national ranking since the 1997 season, posting a strong 13-4-2 record en route to appearing in the semifinals of the GSC tournament.
- ▶ More than 100 academic awards were handed out to UAH student-athletes.



- ▲ Men's basketball captured a share of the GSC regular season title, won the GSC tournament while appearing in the NCAA tournament for the fifth time in six seasons, and featured a pair of all-GSC selections.
- ▶ Women's cross country sent two runners to the NCAA Division II national championships.
- ▶ Men's cross country finished second at the GSC championships and featured five all-GSC performers.

You can read more about UAH Athletics and find upcoming season schedules by visiting uahchargers.com or by following the Chargers on social media: [facebook.com/UAHChargers](https://www.facebook.com/UAHChargers) and [@UAHChargers](https://twitter.com/UAHChargers).

The Class of 2015
celebrated UAH
commencement
on May 3, 2015





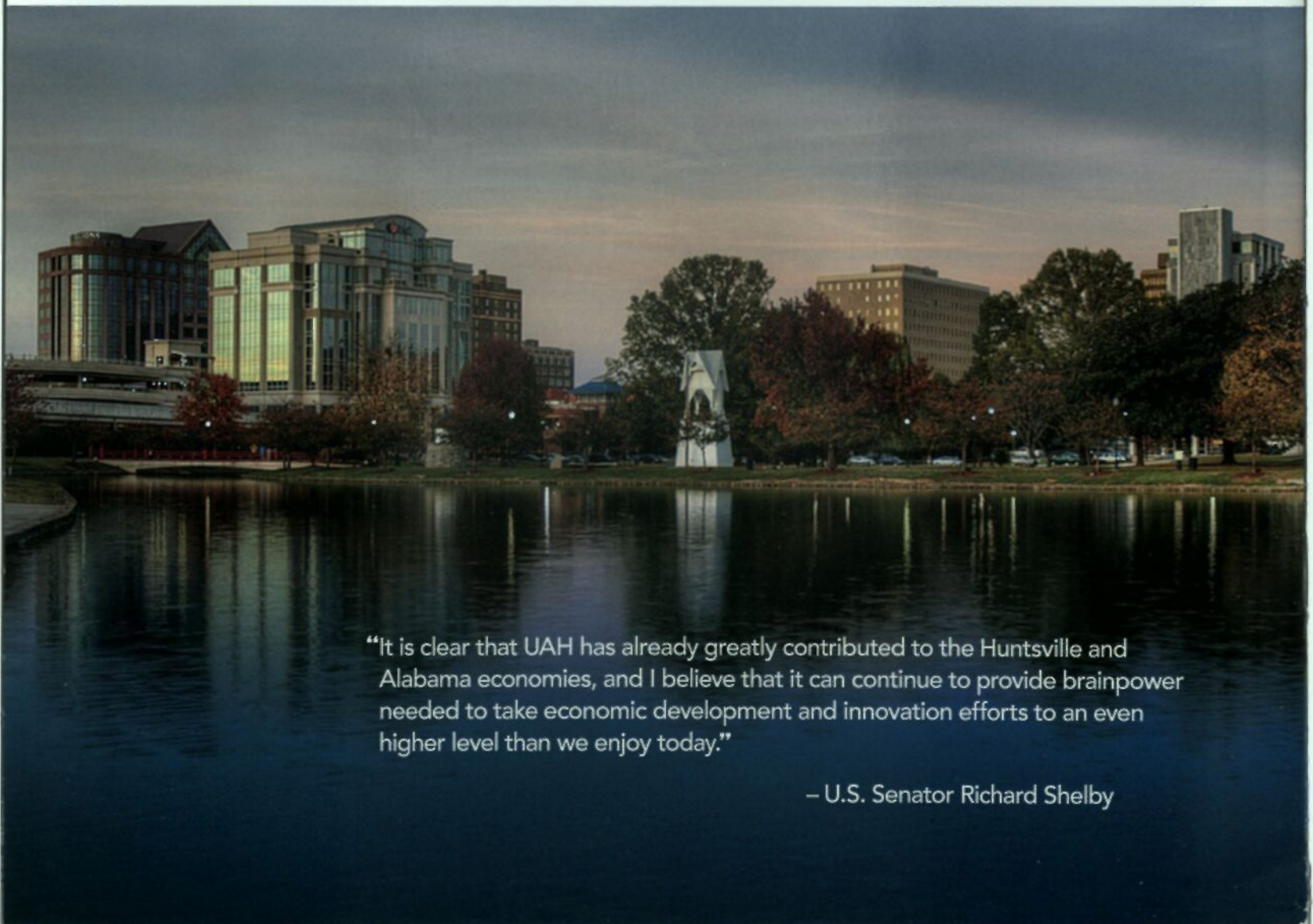
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“It is clear that UAH has already greatly contributed to the Huntsville and Alabama economies, and I believe that it can continue to provide brainpower needed to take economic development and innovation efforts to an even higher level than we enjoy today.”

– U.S. Senator Richard Shelby