

Building Momentum

Institutional Presentation
Board of Trustees
Robert A. Altenkirch
April 10, 2015

SLIDE #1

Opening remarks

Good morning.

It's always an honor to welcome members of The Board of Trustees of The University of Alabama to our campus each spring. We're glad you are here.

2015 is going to be a year of continued efforts to build momentum that has been established through the efforts of many at UAH over the past few years.

We have been working steadily to pull people together and focus on the future potential of this university.

We are building momentum in a variety of ways – welcoming new leadership to the university, adding new colleges and expanding academic programs, creating more collaboration among our colleges and research centers, and building an infrastructure to serve what we believe will be a growing student population.

All the while, we will continue to focus our energies toward building an even higher quality institution. With your guidance, we will build the momentum that will allow us to continue to participate in shaping and defining our campus, the greater Huntsville area, the state of Alabama and the nation for generations to come.

There's never been a more exciting time for UAH. I look forward to working closely with you during the upcoming years to continue building momentum for this fine university.

SLIDE #2

Building Momentum with New Leadership

- **Marsha Adams**, a nationally recognized leader in nursing became Dean of the College of Nursing and assumed her duties last July. She joins us after serving as senior associate dean of academic programs

and professor at The University of Alabama's Capstone College of Nursing. Marsha served the Capstone College of Nursing in key roles for 30 years. She received a BSN, MSN, and Ph.D.-Nursing Education Administration from the University of Alabama at Birmingham School of Nursing.

- **Sundar Christopher** rose through the ranks at UAH to become Dean of the College of Science in June. He began his tenure in 1997 in the Department of Atmospheric Science. He was appointed chairman of the Department in 2010. Sundar earned a B.E. in mechanical engineering from Madras University, India, an M.S. in meteorology from The South Dakota School of Mines and Technology, an M.A. in industrial organizational psychology from UAH and a Ph.D. in atmospheric science from Colorado State University.
- **Beth Quick** is the first Dean of our newly established College of Education, having been appointed to that position at the beginning of this year. She joined UAH in 2014 as Chair of our Education Department. Beth earned a B.S. from Samford University, a Master's of Education and a Doctorate of Education from Vanderbilt University.
- **William Wilkerson** was chosen Dean of our other new college last year – the Honors College. He joined UAH 17 years ago and was Professor and Chair of the Department of Philosophy. Bill earned an undergraduate degree in Humanities from Willamette University, and a Ph.D. in Philosophy from Purdue University.
- **Kristi Motter** joins us as Vice President for Student Affairs. She formerly served as associate vice president of enrollment services at The University of Southern Mississippi for the past 10 years. She has a Ph.D. in higher education administration from USM, a master's in adult education and a bachelor's in computer information science from Northwestern State University of Louisiana.

SLIDE #3

Building Academic Momentum

- We have a team in place and we're working hard to enhance the recruitment of students to our campus. Following a too lengthy time of relatively fixed enrollment, our freshman applications for fall 2015 to date are running over 60% more than for fall 2014, so we anticipate an historically large freshman class.
- We are making great strides in our academic offerings for undergraduate and graduate students. We are working together — with Christine Curtis' leadership — to accomplish much.

- For example, we are already seeing results from our tuition restructuring with more students taking more credit hours in the first year of the three-year transition to block tuition. Although the increase is small for this first year, the trend should continue with the impact of the tuition restructuring being more significant and more financially attractive for students to take more hours in years two and three thus leading to improved graduation rates.
- Our campus is producing new academic programs in various disciplines that are sought by local government agencies and corporations, thus helping students discover a better career choice for the future.
- These efforts have taken a tremendous amount of work by our faculty and staff. Our progress in this area would not have been possible without their conscientiousness and perseverance.

SLIDE #4

Business Administration

- The U.S. Army Materiel Command and UAH are collaborating on a custom-delivered version of a for-credit graduate certificate program in supply chain management. A 20-member cohort of AMC personnel was selected to participate in the 12-month pilot program that began in January. Credit from this program may be applied to our new master's degree program in supply chain and logistics management that you approved late last year.

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- That new degree in supply chain and logistics management is one of three new master's degree programs in the College of Business Administration. The others are: M.S. in Management Science-Business Analytics, and M.S. in Management - Human Resource Management.
- UAH and the HudsonAlpha Institute for Biotechnology have established an entrepreneurship collaboration. The partnership is intended to strengthen the business skills of life science sector startups at HudsonAlpha while at the same time enhancing the educational experience for students at UAH.

SLIDE #6

Education

- The College of Education was established and approved by the Board of Trustees last year. The College comprises a Department of

Curriculum and Instruction, a Department of Kinesiology, and the UAH Rise School, an outreach and service unit serving pre-school children with developmental disabilities along with typical children.

SLIDE#7

- We have completed the assimilation of Rise School into our operations. The School is housed in temporary quarters at the moment, but will be able to move into a permanent location when we take occupancy of University Place School in the fall of 2016.

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- You have also approved new degree programs for the College of Education, including a B.S. in Secondary Education, a B.S. in Kinesiology, a Master of Arts in Teaching, and a B.S. in Early Childhood Education/Early Childhood Special Education.
- And not too long ago, the Master of Education degree program aimed to equip teachers to meet the needs of diverse students, including students with disabilities.

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Engineering

- Students in our Mechanical and Aerospace Engineering Department have devised a method to demonstrate the long-range potential of unmanned aerial vehicles. A key development was the design of a remote-controlled capture and release docking mechanism between a quad rotor UAV and a helium filled blimp. Students in a Computer Engineering senior design class developed the remote control software. The device was designed, engineered and hand-fabricated by the students utilizing our Engineering Design and Prototyping Facility, one of the largest student-centered facilities of its type in the country. Their research could lead to more long-range commercial applications of UAVs.

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- Noted researcher and professor Phillip Ligrani has joined UAH as our eminent scholar in propulsion. Phil is a recognized expert and prolific author in propulsion, shock-wave-boundary-layer interactions, aerodynamic losses and turbomachinery. Phil earned his B.S. in mechanical engineering from the University of Texas, and his M.S. and Ph.D. in mechanical engineering from Stanford University.

- George Nelson, Assistant Professor of Mechanical and Aerospace Engineering, received an NSF Faculty Early Career Development award. This five-year award will provide insights into lithium-ion battery nanomaterials research to create smaller, lighter electric car batteries as well as improve their performance and reliability, thus extending the range and lifetime of hybrid and electric vehicles.
- Jacob Bryson, a senior engineering major, has always had a passion for engineering and its ability to improve the lives of everyday people. So when he learned about the National Academy of Engineering “Engineering for You” video contest he decided it would be a good way to share that passion. Little did he know he'd end up placing first in the nation with his submission, “The Personification of Engineering.”
- Our Rotorcraft Systems Engineering and Simulation Center is part of a team that competed for a rotary wing technology development contract that can be worth up to \$40 million. The team was one of five across the United States selected to work on this contract during the next five years. The contract focuses on technologies that enhance vehicle productivity, range, speed, capacity, performance, dual-use, civilian and military, safety and survivability.

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Honors College

- With the Board’s support, we expanded our Honors Program into the Honors College. More than 150 high-achieving students and their families — from all over the United States — attended the College Launch Dinner at the Davidson Center at the U.S. Space & Rocket Center.

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- We have recruited these Honors Students in every field from all over the country, and have raised both the average ACT from 29 for the years of the Honors Program to 30.4 and the average GPA from 3.9 to 4.06 for incoming Honors Students. We anticipate a record number of incoming freshmen for the Honors College this fall of about 150.
- Three honors students presented research at the International Conference of the American Institute of Aeronautics and Astronautics: Markus Murdy, Ethan Hopping, and Nathan Stepp, after winning the regional competition in Memphis.
- A Nursing student, Mary Brenner, was awarded a patent for her device assisting mothers with breast-feeding. Meanwhile, research by Eddie

Damron, also from Nursing, has already been recognized by Huntsville Hospital, which changed some of their protocols in light of his findings.

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Liberal Arts

- Award winning studio owner Noel Webster joined us to create a music recording studio in Roberts Hall. He is posing with a platinum album, which denotes the sale of 1 million copies of The Black Keys album Brother, which was recorded at his studio in Muscle Shoals. Earlier this year, the Music Department took possession of an 8028 Neve, a unique analog sound-mixing console that will make UAH, according to Webster, a destination for purist recording artists.

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- UAH has partnered with Mark Roberts to premier his play, New Country, this spring on campus. Roberts is the creator of the hit TV series Mike & Molly, head writer for Two and a Half Men, and consultant to The Big Bang Theory. The production will move to New York City for a four-week run, allowing UAH students real-world experience in the nation's most important theatrical venue.
- Country music artist Lee Greenwood was the special guest at the second annual Peace on Earth Concert at the Von Braun Center. The event also featured performances by numerous Huntsville organizations and the talented students and faculty of the College of Liberal Arts, recommended to be renamed the College of Arts, Humanities, and Social Sciences.
- Amanda Blanton, a senior in Art, created Foodie Radar, a new app that offers smartphone users real-time information on local mobile food vendors and their menu options.

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Nursing

- Our College of Nursing formed a new Learning and Technology Resource Center to consolidate its use of technology and existing lifelike patient simulators to train students and to further research in healthcare simulation education. Students exposed to simulators have reported a 94 percent increase in critical thinking skills, a 75 percent increase in confidence in their ability to recognize changes in real patient conditions and a 73 percent better understanding of the classroom material.

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- The College of Nursing is conducting a comprehensive research study with the Center for Aging of Huntsville to reduce the risk of falls in the elderly. The study is scheduled to begin in fall 2015. The study will examine three key factors that contribute to the risk of falls in the elderly: medication management, balance and coordination, and home safety.
- Haley Hoy, Interim Associate Dean of Graduate Programs in the College of Nursing, received a two-year Advanced Education Nursing Traineeship grant from the U.S. Department of Health and Human Services program to address the growing shortage of primary care providers across the nation.
- Louise O'Keefe, Assistant Professor in the College of Nursing and Director of the Faculty & Staff Clinic, received the American Association of Nurse Practitioners' 2014 State Award for Excellence. Only one nurse practitioner in each state receives the award annually, making it one of the most prestigious among nursing faculty in the state of Alabama.

SLIDE #17**Science**

- iXpressGenes, a UAH-supported biotech company at the HudsonAlpha Institute for Biotechnology, and founded by Joe Ng, Associate Professor of Biological Sciences, launched its first product, CrystalX2. CrystalX2 is an automated fluorescent imager that reveals early nucleation of protein crystal growth.

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- UAH scientists are combining data from weather satellites with Doppler radar and numerical models in a system that might warn which specific "pop up" storm clouds are likely to produce lightning and when that lightning is likely to begin and end.
- John Gregory, Professor of Chemistry and Director of the Alabama Space Grant Consortium, was awarded the NASA Distinguished Public Service Medal. This is NASA's highest form of recognition to an individual "whose service, ability, or vision has personally contributed to NASA's advancement of United States' interests."
- Faculty members in our Department of Biological Sciences have received a five-year grant from the National Science Foundation to

further the development and assessment of methods to improve the retention and graduation rate of STEM students. Another partnership with the HudsonAlpha Institute of Biotechnology.

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Interdisciplinary programs

- Cybersecurity and big data are among the education and research priorities in our strategic plan. We are creating and growing cybersecurity as a field of strength among four of our seven colleges – Business Administration, Engineering, Liberal Arts, and Science.

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- During the past year, UAH was awarded a \$4.2 million National Science Foundation grant to establish a CyberCorps Scholarship for Service program. The grant will fund scholarships for full-time students in the field of cybersecurity. Upon completion of their degree, they are committed to working in government positions. UAH is one of 54 nationwide chosen for this program.
- Also, UAH is one of only 60 institutions in the United States designated as a National Center of Academic Excellence in Cyber Defense by the National Security Agency. UAH has also earned recognition as a National Center of Academic Excellence in Information Assurance Education and a National Center of Academic Excellence in Cyber Defense Research.
- Another outstanding interdisciplinary effort involves one of our students conducting research in optical engineering and science. Amanda Black Clark is a doctoral student who also works for the U.S. Army Space and Missile Defense Command at Redstone. She was awarded a \$400,000 competitive grant from the Department of Defense High Energy Laser Joint Technology Office to develop and test diode-pumped xenon laser technology for the U.S. military. The atomic-level spectroscopy basic research investigates the physical parameters of lasers using a developmental test bench laser in a laboratory in our Optics Building. Her work could go a long way in protecting the national security interests of the United States and our allies.

SLIDE #21

Building Momentum in Research

- Early after his arrival, Vice President for Research and Economic Development, Ray Vaughn, created a cross college faculty research program that provides grants to UAH faculty teams that work together

on research proposals. Twenty-one teams were funded initially. Ninety percent of those teams identified a funding opportunity, 10 proposals were submitted requesting a total of \$3.7 million. We believe this program will continue to build benefit far into the future.

- A similar program was created to encourage UAH faculty to work with faculty from UAB and UA on seeking external funding. Twelve principal investigators from UAH received funding in support of this initiative.
- The Office of Research and Economic Development is investing more than \$1 million annually in UAH faculty efforts, which is intended to support research efforts that will grow and result in a return on that investment.
- We made a remarkable jump in total National Science Foundation research expenditures during 2013. We were ranked No. 199 in 2012, but jumped 35 spots in just a year to 164. This sharp rise reflects a combination of the proposal writing incentives that were put in place and the recently established Proposal Development Office as well as good hiring and increased emphasis on National Science Foundation funding.

The efforts from our researchers and faculty are also showing up in our rankings. Our campus has five disciplines ranked in the top 20 in the United States. It should come as no surprise that our basic and applied research in aeronautical and astronautical engineering is the dominant area of our research portfolio. In 2012 figures from the National Science Foundation, we ranked fifth in the nation in that field. In 2013, we moved up a spot to fourth.

The five disciplines in top 20 in expenditures are:

- Aeronautical and astronautical engineering – 4th
- Computer science – 10th
- Business & management – 10th
- Atmospheric Sciences – 15th
- Astronomy – 18th

Two federal agencies funding in which UAH is ranked in the top 20 nationally are

- NASA – 15th
- Department of Defense – 16th

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I selected two disciplines to show you who our peers are, aeronautical and astronautical engineering,

- No. 1 — Johns Hopkins
- No. 2 — Utah State University
- No. 3 — Georgia Institute of Technology
- No. 4 — UAH
- No. 5 — University of Colorado-Boulder
- No. 6 — Massachusetts Institute of Technology

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and atmospheric science

- No. 14 — MIT
- No. 15 — UAH
- No. 16 — NC State

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and the two agencies, Department of Defense

- No. 15 — University of Dayton
- No. 16 — UAH
- No. 17 — University of Hawaii
- No. 18 — Harvard University

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and NASA

- No. 14 — Columbia University
- No. 15 — UAH
- No. 16 — UCLA

SLIDE #26

Athletic momentum — Student first, athlete second

- UAH student-athletes were recognized for their academic achievement during a home basketball game at Spragins Hall earlier this year. Forty-five student-athletes earned a perfect 4.0 during 2014. Every athletic team was represented and the women's volleyball team produced the most student-athletes with 4.0s with seven.

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- For 2014, there were 118 student-athletes that were named to conference or national all-academic teams or received honor roll acknowledgement.
- Our student-athletes were also able to win four conference championships last year.

- And, both our men's and women's athletic programs finished second in the All-Sports Trophy competition in the Gulf South Conference.
- And ...

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We have added another athletic program for our women and men — lacrosse. The sport is one of the fastest growing sports in the nation and we will be the first public university in Alabama to offer it as an NCAA sport. It's a great fit for our campus and the student profiles of lacrosse student-athletes are a great fit for our academic profile.

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Paralympics athlete

- I also want to mention that one of our graduates, Megan Harmon, participated in the U.S. Paralympics Team to compete in the inaugural snowboard competition at the 2014 Paralympics Winter Games in Sochi, Russia. Not long after graduating with an engineering degree, Megan was hit by a car while riding her motorcycle and lost her left leg, but within two weeks of the accident she was walking unassisted with her first prosthetic leg. Six months later she was back on the slopes snowboarding. She was one of two women on the para-snowboarding team. Although she was not on an athletic team while she was in school here, Megan did acquire the nickname "Pistol" while at UAH because of her competitive spirit.

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Building Infrastructure Momentum

- Last September, we celebrated the grand opening of the newly renovated Roberts Recital Hall. Numerous upgrades have refined the acoustic levels to world-class standards. A massive orchestra shell was installed. An extensive suspended ceiling system and acoustic panels to enhance sound reverberation and absorption. It was a renovation long overdue.
- Nursing students found the expansion of the Nursing Building welcome and inviting when it opened for the fall of 2014. Nursing enrollment had long ago exceeded the building's capacity. Now, we are renovating the original Nursing Building to bring that facility up to date. An opening of that renovated space is expected in August.
- It was our good fortune to have Alabama Gov. Robert Bentley join us for a ribbon cutting ceremony last October of SWIRLL, our Severe Weather Institute - Radar and Lightning Laboratories. This facility will

help UAH grow research in an already nationally ranked atmospheric science program.

- We have also added University Park on the east side of campus. The park was owned by the city of Huntsville. The 11-acre park adds five ball fields that can be used by our students for intramural sports as well as used by our coaches for youth athletic camps. There's plenty of green space for picnics or other leisurely activities by university employees. Plans are under way to make improvements to the 50-year-old park.
- Finally, we are under way with an extensive signage program across the campus. There has not been a comprehensive effort at wayfinding and new signage in at least 25 years. That resulted in creating inconsistency in the look of the campus and, frankly, not an effective means in helping visitors find their destinations on campus.

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- As you drove onto campus today, you may have noticed that Madison Hall is no longer a part of our building inventory. The cost of renovating that building and meeting building codes made it more prudent to raze that facility and construct a new student services building. It will be a one-stop shop to fulfill the needs of prospective and current students. The facility will also house our administrative offices.
- We are seeing the structure take place for that building. Steel beams have risen from the ground and if we can get lucky with weather and suffer no construction delays, I'm hoping our Board meeting a year from now will be at the conference center in that facility.

As you can see, UAH continues to make great strides forward in a variety of ways – in our people, in the quality of our academic programs, our innovative research, in athletics, and in our infrastructure. I believe we are building momentum for an even brighter future for years to come.

SLIDE #32

A Diploma with Value

- A final message and an overarching impression I want to leave with you today would be about producing a deliverable to students. As administrators of institutions of higher learning, we should all be cognizant of the importance of the value of the diploma that we provide our graduates. That is a question that is being asked more frequently by parents, students and the media.

- I believe all of the campuses in The University of Alabama System perform well for their students. I know we take great pride in the benefit and merit that comes with receiving a diploma from The University of Alabama in Huntsville.

There are a number of organizations that produce national rankings of universities based on using a variety of approaches and methods. UAH fares well in these rankings that attempt to shed light on the value of a degree. I won't attempt to recount them all but just to say that UAH is among America's 100 Best College Buys, is on the list of the 50 most affordable colleges in America with the best return on investment, and according to Payscale.com among the nations' top 100 colleges for return on investment, one spot behind Yale.

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Closing remarks

To the Trustees, and to the administration of The University of Alabama System, I want to express my appreciation to every one of you for your support of UAH. The guidance, encouragement and advocacy you have long provided have been, and remain, instrumental in helping this campus embark on a path of progress. Together, we are building momentum for an institution that has evolved into a national asset in education, research and service and provides significant support for the Huntsville area and the state of Alabama.

Thank you.