STATE OF THE COLLEGE
College Basic and Applied Sciences

New CBAS Faculty 2015-16

Assistant Professors
Christina Hiers – AERO
Salvador Barbosa – CSCI
Vahid Khiabani – ET
Lei Maio – ET
Suman Neupane – PHYS
Brian Slaboch – ET
Racha El Kadiri – GEOS
Antonio Saavedra – PHYS

Lecturers
Daniel Siao – AERO
Carlos Smith – AERO
Nicholas Waynick – ABAS
Danielle Brown – BIOL
Robert Seig - BIOL

New Military Science Staff
LTC Jackie McDowell, Chair, MS
MSG Steven Laire, Assistant Professor, MS
New CBAS Staff:
Mr. Jeremy Carlton, ABAS, Assistant Farm Supervisor
Ms. Kathy Green, CHEM, Executive Aide
Ms. Melissa Houghton, CHEM, Technical Clerk
Mr. John Mugler, CSCI/COMS, System Administrator
Ms. Takesha Anderson, ET, Secretary
Ms. Misti McDowell, TSEC, Executive Aide

Advisors:
Mr. Doug Adams, CBAS, Pre-professional Advisor
Mr. Jon Buchalski, CBAS, Pre-professional Advisor
Ms. Amanda Custers, CBAS Advisor (AERO K-Z)
Ms. Taylor Moss, CBAS Advisor (ABAS)
Ms. Suzanne Hicks, CBAS Advisor (BIOL A-J)
Ms. Beth Bonner, CBAS Advisor (BIOL K-Z)
Ms. Tracey Myers, CBAS Advisor (CHEM/BIOC)
Dr. Irina Novozhilova, CBAS Advisor (CIM/GEOS)
Ms. Kristen Janson, CBAS Advisor (CSCI)
Ms. Danielle Stefanski, CBAS Advisor (ET, CM, ES&T, MECH)
Ms. Jennifer Williams, CBAS Advisor (MATH/PHYS)
Ms. Darnell Towns, CBAS Advisor (Prescribed/Academic Focus J-Z)
CBAS ACCOMPLISHMENTS
Accomplishments:

MTSU 2013-14 Foundation Awards:
  Outstanding Teacher: Dr. David Gore (ET), Dr. Ahad Nasab (ET)
  Outstanding Achievement Instruct Tech: Dr. Lisa Green (Math)
  Outstanding Public Service: Dr. Kim Sadler (BIO)
  Special Projects Award: Dr. Tammy Melton (Chem)

MFT Academic Performance Awards:
  Aerospace
  Concrete Industry Management

General Education Academic Performance Awards:
  Mathematics
  Physics

- The Forensic Science and Mechatronics degree programs are working towards national accreditation of the programs.

- Successful accreditation of the Biochemistry Program

- Tennessee Academy of Sciences meeting November 20 at MTSU. The title and abstract submission deadline is Sept. 30.
Accomplishments:

Goldwater Scholarship:
  Chelsea Harmon – Chemistry, Honorable Mention

SMART Grant Finalist:
  Brooke Morgan - Forensics

Phi Kappa Phi Fellowship:
  Katelyn Stringer, - Physics

Research Experiences for Undergraduates:
  Michelle Kelley – Physics, Paris, France with the University of Michigan

Science Undergraduate Laboratory Internships (SULI) program at Oak Ridge National Laboratory
  Grayson Dubois – Computer Science
  Sydney Smith – Chemistry
  Josie Lyon - Physics
Bragging Points:

**Aerospace**
- The development and approval of the new Unmanned Aerial Systems concentration, which begins this fall with over 20 students already enrolled.
- The FAA approval obtained to issue exemptions to our Pro Pilot students for the Restricted Airline Transport Pilot certificate upon reaching 1,000 hours of flight time, which is allowing our professional pilot concentration graduates to be hired immediately upon reaching this flight time. Regional airlines are paying hiring bonuses and are actively recruiting our graduates on campus.
- The Maintenance Management program currently running at maximum capacity (100 students), assisted in part by the large number of veterans who are interested in the program given their military aviation experience.
- The significant increase in international students in the department, with 17 countries currently represented.
- Faculty members participating in industry-led professional development activities over this summer; Joe Hawkins (Maintenance Mgmt) received an all-expense paid one week training course on the B-787 at the Boeing factory in Seattle, and Andrea Georgiou (Flight Dispatch) participated in a one month long faculty internship at Southwest Airlines in Dallas. These experiences will allow faculty to continue to bring the latest industry developments into the classroom, which is extremely important in a fast-changing technology environment.

**Agribusiness and Agriscience**
- Farm Laboratory has had several recent successes including
  - Dairy Hill Stampede – Annually has around 150 runners, more expected this Fall
  - Open House in 2014 had 300+ – Open to all public with emphasis on MTSU community and kids.
- Equine Assisted Activities and Therapy (EAAT) – MTSU’s excellent Horse program has initiated EAAT by hiring Sarah English who is closely working with Veterans Recovery Center Council veterans.
- Agri-Tourism - Dr. Alanna Vaught’s New Agri-Tourism Class hosted the 2nd Agricultural Education Spring Fling at the Tennessee Livestock Center in April. 80 MTSU Ag Students worked with the project which involved 800 school children ages pre-K through 2nd grade as well as 200+teachers and parents attending.
- Precision Agriculture – Dr. Song Cui has led MTSU into national leadership in this cutting edge technology. His focus on working with the MTSU Aerospace program to develop sophisticated UAV (drone) technology is yielding impressive results.
Bragging Points:

Biology:

- The Forensic Science degree program is booming. There were 6 graduates from this program this year. Under the direction of our former chair, Dr. George Murphy, the program has grown to over 100 majors. The new program director Dr. Frank Bailey.
- The department has supported our undergraduates both intellectually and financially. Tutoring efforts through the department have helped hundreds of students in our classes. Through departmental scholarship funds, we awarded 17 scholarships totaling $11,923 to undergraduate students and awarded 13 scholarships totaling $7,680 to graduate students.
- This year, instructors for BIOL 1110 formed a professional learning community (PLC). Those efforts helped to increase success and diminish DFW rates in that course.
- 10 Biology undergraduate students were awarded URECA scholarships at MTSU.
- This past year, there were 48 peer-reviewed publications and 98 research presentations from the Biology Department. The department has current external grant funding of almost $7 million dollars.

Chemistry:

- Most undergraduate degrees conferred by any chemistry department in the state.
- About $700,000 in newly committed external grant funding awarded in the past year.
- 58 UG students conducting mentored research with faculty members on topics ranging from synthesis of new medicinal compounds to research on the volatile chemical emissions from e-cigarette vapors.
- Initial accreditation of our B.S. in Biochemistry by the American Society for Biochemistry and Molecular Biology
- A new accelerated bachelors-to-masters program that will allow bright, focused first-time freshmen to earn their Masters of Science in Chemistry in 5 years.
Bragging Points:

**CIM:**
- 9 jobs per graduate during 2014-2015
- Raised over $800,000 at the World of Concrete for the network of CIM Universities
- Received $50,000 in new scholarship dollars to award to first time freshmen and transfer majors over the next year
- Hosted over 300 K-12 students on campus to learn about the industry and make their own concrete coaster
- Hosted 11th annual CIM Golf Tournament with 30 teams and 35 CIM alumni attended and over $70,000 was raised.

**Computer Science:**
- Began the transition into the new curriculum. The new 1010 class was taught both fall and spring semesters. The 1170 Computer Science 1 class was transitioned to the new programming language. Early data seems to suggest that students are doing better than in previous years. For spring semesters 2008 - 2013, the average DFW rate for CSCI 1170 was 48%. After instituting the department final in fall 2013, the spring 2014 DFW rate was 35%. This spring after instituting the change from C++ to Python as the primary language for the course, the DFW rate was 30%.
- Have developed multiple partnerships with business and industry to provide real world computer projects for students.
- Dr Zhijiang is the PI on a $275K grant on developing an adaptive evolutionary computing based runtime checker for the US Air Force research laboratory.
Bragging Points:

Engineering Technology

- Mechatronics Engineering is beginning year three and has 230 student as Fall 2015 semester. Original projections were for 50 full time students in year five.
- Received $814,000 grant from the National Science Foundation supporting scholarships for incoming mechatronics students.
- Solidifying partnership with Siemens this year with grant for mechatronics engineering laboratory to support students plus Siemens Level Three Mechatronics Engineering Classification status.
- Actively pursuing partnerships with other companies (2-3) for equipment to support student learning in teaching labs.
- Student led Experimental Vehicle Program continues to win numerous awards for excellence in international engineering competitions:
  - Blue Raider Lunar Rover (Formerly known as Moonbuggy) Team Receives Highest Score from NASA among U.S. college entries. No. 1 in the U.S. and No. 3 in the world.
  - The Result of MTSU 2015 Solar Splash World Championship of Intercollegiate Solar Boating Competition. The MTSU solar boat team sailed confidently at the 22nd annual Solar Splash World Championship competition, hosted at Dayton, Ohio this June. At the event MTSU secured eight awards and received an award for 2nd Place Overall.
- Dr. Boles received the Harold Love Outstanding Community Service Award at Tennessee Higher Education Commission (THEC), Nashville Tennessee on April 23, 2015.

Military Science

- MTSU ROTC commissioned 16 Cadets into Officers this past year, MTSU ROTC continues to meet or exceed its commissioning requirements in both quality and quantity.
- Eighteen Cadets completed the Leader Development and Assessment Course at Fort Knox this summer. Four Cadets earned an “E” Excellence rating and 14 earned a “S” Satisfactory rating with none receiving an “N” Needs improvement rating.
Bragging Points:

Geosciences:

- MSPS Geosciences graduate program job placement rate is 100%
- Four undergraduate students participated in National Science Foundation Research Experiences for Undergraduate Programs:
  - Shannon Porter was a student participant in Vanderbilt geology REU 2014.
  - Briana Vidal is a student participant in Vanderbilt geology REU 2015.
  - Michele Lebkuecher was a student participant in the MTSU 2014 REU programs.
  - Jonathon Flores was a student participant in the MTSU 2015 REU program.
- Students from 18 colleges and universities visited MTSU Geosciences to conduct research including College of William & Mary, Western Kentucky University, University of Kentucky, Slippery Rock University, SUNY Stonybrook, Occidental College, Vanderbilt University, Grand Valley State University, Michigan, University of North Carolina, Pembroke California State University, Sacramento, Florida State University
- Researchers from fourteen institutions, agencies and departments visited or conducted collaborative research with the Geosciences faculty: Tennessee Historical Commission, Tennessee Department of Agriculture – Division of Forestry Stones River National Battlefield, Tennessee State University, Austin Peay State University, US Department of Agriculture – Agriculture Research Service – National Sedimentation Lab, SUNY Buffalo – Department of Geography US Environmental Protection Agency – Environmental Sciences, Iowa State University – Department of Agronomy
- MTSU Geosciences is the only TBR school to have been awarded a chapter of Sigma Gamma Epsilon (The National Earth Science Honor Society), and in 2014-15 was the first university in Tennessee to be approved for a student chapter of the American Institute of Professional Geoscientists.
Math
- In AY 2014-15, fifteen students passed twenty-six professional examinations of the Society of Actuaries.
- Over ten graduates from actuarial programs in the Department have achieved Fellow or Associate memberships from actuarial professional societies such as the Society of Actuaries and the Casualty Actuarial Society.
- Actuarial program has grown to almost 100 students.
- Faculty published fifty-seven research papers in peer-reviewed venues.
- Recent graduates of our programs have gone on to complete their doctorates and are presently on the faculty of several universities including Drexel University, Austin Peay University, North Carolina A&T University, Angelo State University, and Indiana University of Pennsylvania.
- Recent graduates of our programs are currently enrolled in doctoral programs at Ohio State, Northwestern University, Georgia Tech, University of Waterloo, University of California Santa Cruz, University of South Carolina, University of New Mexico, University of North Carolina, Florida State University, University of South Florida, University of Tennessee, University of Memphis, and (last, but certainly not least) Middle Tennessee State University.

Physics:
- Physics & Astronomy was selected a one of three “Departments of Distinction” nationwide for improving undergraduate physics education.
- Graduation numbers have increased for the fifth year in a row.
- Completed TBR grant to pilot Learning Assistants in Physics and Astronomy laboratories.
- Student Katelyn Stringer gave an oral presentation at the Women in Physical Science conference, and also won a Phi Kappa Phi fellowship.
- Completed designs for the Wiser-Patten renovation, and found a new home until mid-fall 2016.
CBAS DATA
### CBAS Degrees Conferred

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<tr>
<th>Year</th>
<th>Graduates</th>
<th>Undergraduates</th>
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<tr>
<td>2010-11</td>
<td>22</td>
<td>668</td>
</tr>
<tr>
<td>2011-12</td>
<td>35</td>
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<td>2012-13</td>
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<td>2013-14</td>
<td>134</td>
<td>669</td>
</tr>
<tr>
<td>2014-15</td>
<td>119</td>
<td>712</td>
</tr>
<tr>
<td>Year</td>
<td>SCH in Thousands</td>
<td></td>
</tr>
<tr>
<td>----------</td>
<td>------------------</td>
<td></td>
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<tr>
<td>2010-11</td>
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<td></td>
</tr>
<tr>
<td>2011-12</td>
<td>145,547</td>
<td></td>
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<tr>
<td>2012-13</td>
<td>141,431</td>
<td></td>
</tr>
<tr>
<td>2013-14</td>
<td>134,446</td>
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<tr>
<td>2014-15</td>
<td>135,149</td>
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CBAS Student Credit Hours
CBAS Making A Difference Nominations

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<th>Year</th>
<th>Nominations</th>
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<tbody>
<tr>
<td>2010-11</td>
<td>74</td>
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<tr>
<td>2011-12</td>
<td>68</td>
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<td>2012-13</td>
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<tr>
<td>2013-14</td>
<td>71</td>
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<tr>
<td>2014-15</td>
<td>77</td>
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### CBAS Grant Funding

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<tr>
<td>Grants submitted</td>
<td>196</td>
<td>239</td>
<td>188</td>
<td>166</td>
<td>183</td>
</tr>
<tr>
<td>Dollars asked for (Mil)</td>
<td>48</td>
<td>34</td>
<td>38</td>
<td>53</td>
<td>45</td>
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<tr>
<td>Grants received</td>
<td>111</td>
<td>159</td>
<td>138</td>
<td>78</td>
<td>88</td>
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<tr>
<td>Total Dollars (mil)</td>
<td>9.8</td>
<td>10.4</td>
<td>13.4</td>
<td>16.8</td>
<td>19.1</td>
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CBAS Publications

An average of 51% of faculty are publishing each year.
CBAS Presentations

An average of 53% of faculty are making presentations each year
An average of 81% of faculty are participating in service activity each year.
CBAS BUDGET
### College Budget

<table>
<thead>
<tr>
<th>Activity</th>
<th>BASE</th>
<th>CUR_BUDGET</th>
<th>SUM_YEAR_TO_DATE_ACTIVITY</th>
<th>ENCUMB</th>
<th>BAL</th>
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<tr>
<td>Salaries</td>
<td>21,711,289.84</td>
<td>21,711,289.84</td>
<td>2,866,205.50</td>
<td>17,414,964.66</td>
<td>1,430,119.68</td>
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<td>Benefits</td>
<td>7,795,064.00</td>
<td>7,795,105.60</td>
<td>1,290,742.69</td>
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<td>6,504,362.91</td>
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<tr>
<td>Travel</td>
<td>197,367.00</td>
<td>207,367.00</td>
<td>36,369.20</td>
<td>-</td>
<td>170,997.80</td>
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<tr>
<td>Operating</td>
<td>2,729,392.38</td>
<td>3,813,859.96</td>
<td>433,258.64</td>
<td>1,147,753.47</td>
<td>2,232,847.85</td>
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<tr>
<td>Equipment</td>
<td>193,959.00</td>
<td>201,484.00</td>
<td>7,525.00</td>
<td>633.70</td>
<td>193,325.30</td>
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<tr>
<td>Scholarships</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
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| Total        | $32,627,072.22 | $33,729,106.40 | $4,634,101.03 | $18,563,351.83 | $10,531,653.54 |

Salaries + Benefits are 87.4% (89.9%) of the budget
- Operating Budget are 11.3% (8.2%) of the budget

Foundation Gifts -$983,035.24; Planned Giving - >2 million
## Dean’s Office Budget

### Dean's Office Budget 2015-16
(as of 9/11/2015)

<table>
<thead>
<tr>
<th>Account Name</th>
<th>SALARIES</th>
<th>BENEFITS</th>
<th>TRAVEL</th>
<th>OPERATING</th>
<th>EQUIPMENT</th>
<th>TOTAL</th>
<th>COMMITTED</th>
<th>EXPENSES TO DATE</th>
<th>BALANCE</th>
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</thead>
<tbody>
<tr>
<td>Specialist - Instructional Tech</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$8,480.00</td>
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<td>$400.70</td>
<td>$8,079.30</td>
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<tr>
<td>Other Instr- Bas &amp; Appl Sci*</td>
<td>$48,119.00</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$48,119.00</td>
<td>$49,004.74</td>
<td>$114.26</td>
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<tr>
<td>Recruitment</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
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<td>$0.00</td>
<td>$0.00</td>
<td>$197.40</td>
<td>($197.40)</td>
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<tr>
<td>Indirect Cost **</td>
<td>$400.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$64,444.82</td>
<td>$0.00</td>
<td>$64,844.82</td>
<td>$31,149.82</td>
<td>$7,706.07</td>
<td>$25,988.93</td>
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<td>Dean - Bas &amp; Appl Sci**</td>
<td>$571,413.00</td>
<td>$211,528.00</td>
<td>$4,500.00</td>
<td>$31,753.00</td>
<td>$819,194.00</td>
<td>$673,014.35</td>
<td>$123,442.85</td>
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<tr>
<td>Advising</td>
<td>$671,458.00</td>
<td>$224,279.00</td>
<td>$0.00</td>
<td>$32,000.00</td>
<td>$927,737.00</td>
<td>$752,403.81</td>
<td>$154,259.12</td>
<td>$21,074.07</td>
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<tr>
<td>TT Fac Yrs 1-5 Travel***</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$0.00</td>
<td>$9,262.64</td>
<td>$9,262.64</td>
<td>$1,000.00</td>
<td>$1,000.00</td>
<td>$7,262.64</td>
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<tr>
<td>**TOTALS</td>
<td>$1,291,390.00</td>
<td>$435,807.00</td>
<td>$4,500.00</td>
<td>$145,940.46</td>
<td>$1,877,637.46</td>
<td>$1,506,572.72</td>
<td>$287,120.40</td>
<td>$83,944.34</td>
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</table>

*$48,119 in "Other Instructional" are adjunct dollars that cannot be used for any expenses other than adjuncts.

**Balance includes $11,000 to be used for college's Student Success Initiatives

***Provost's faculty initiatives funding is based upon the number of tenure-track faculty in yrs 1-5 of their tenure-track service.
Opening Spring 2017

Backfill
Davis Science Building

2nd floor is Geosciences and Future Research Lab Space
CBAS – CHALLENGES
First time freshman retention: 2012 (72.5), 2013 (71.6), 2014 (75.7)
College Basic and Applied Sciences

Retention/Recruitment:

- What we are doing as a College:
  - Have developed a strategic plan with common talking points for college personnel to use during recruiting events and student visits.
  - Increases in enrollment and retention
  - Have increased our dual enrollment presence and offerings for local high schools
  - Participated and expanded on Special Student Admit Recruitment Process
  - Freshman Seminar in each Department.
  - Tutoring Changes – including move to library and intrusive tutoring (SI or LA).
  - New recruitment materials, added recruitment emphasis on what departments have to offer, follow-up process and out-state recruitment.
  - Participation of departments in recruitment activities (events and letters)
  - Course Redesign – Departments across the college

Future:

- Identified our major feeder high schools and community colleges and are developing "pipelines" with colleagues at those institutions for new student referrals cutting-edge programs that have high job availability and interest for students
- Continue to expand experiential learning opportunities in and out of the classroom
- Continued expansion of courses redesign in all departments
- Continue implementing retention committee suggestions
- Continue streamlining curriculum to allow for greater student flexibility in the majors
- Continued to develop 2+2 articulation agreements with Community Colleges
What we are doing as a College:

- Developed an advising center with additional staff to serve all majors; Have 15 full-time advisors in the college; (over 12,000 appointments in the last year)
  - 11 assigned to specific departments
  - 2 advisers specific for prescribed students and science focused students
  - 3 advisors for the Pre-Health Professions
- Have implemented mandatory advising with professional advisors during first 30 hours and at 45 and 75 hours mandatory advising.
- Developed mandatory advising for prescribed, focus and rebound students with intrusive advising.
- Have adopted EAB to identify students of high risk to do intrusive advising.
- Expanded outreach to students on academic probation, mid-term reports (low) and that need to do degree audits for graduation.
- Increase advising accessibility – advising stations at different areas of campus, in departments (open advising) and developed multi-ways to contact students related to advising (email, text message, Facebook, Twitter).
- Developed success markers (milestone courses) for all departments.

Future: Need to implement mandatory advising for mentors by department

- Standardized advising/mentoring training and EAB training for faculty.
- Developing a student advising evaluation.
- Increase in advising material online and in print, including maps for transfer students.
- Continue developing a multifaceted, well-organized pre-Health Professionals Advising Center.
College Basic and Applied Sciences

Research and Partnerships:

- What we are doing as a College:
  - Have continued to increase release time for faculty research.
  - Have increased money for travel for faculty and students.
  - Have increased the visibility of research in the college (newsletters, Facebook, Calendar, press releases, community activities).
  - Add advisory boards in a number of departments.
  - Have developed a College Research Committee – Research Talks; has worked to identifying ORS road blocks and solutions.
  - Have expanded Partnerships with business and industry.
  - College award committee formed - first awards Spring 2016.

Future:

- Need to continue to increase research productivity.
- Need to continue to help the departments and college identify research, internship and partnership opportunities.
- Need to continue to allocate release time and money when possible.
College Basic and Applied Sciences

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THANK YOU
Questions