

College of Natural and Applied Sciences

August 18, 2010

State of the College Address

Tammy Jahnke, Dean

follow your
PASSION
find your
PLACE

CNAS Vision

- The College of Natural and Applied Sciences at Missouri State University seeks to be recognized regionally and nationally for our outstanding students/graduates, teaching, scholarly productivity, and professional and community service.

CNAS Mission

- The College of Natural and Applied Sciences develops educated persons who, upon graduation, are prepared to make sound decisions relative to the natural and applied sciences and society and to be productive and successful in their careers. We are committed to excellence in teaching, research and scholarly activities, and community and professional service. Ethical leadership, cultural competence and community engagement are the cornerstones of our commitment to public affairs.

Shared Values/Guiding Principles

- We value
 - our students and their success;
 - hands-on learning (applied and practical);
 - academic rigor and critical thinking;
 - faculty, staff and administrators;
 - excellence in teaching, research and service;
 - ethical behavior;
 - our research endeavors;
 - our community, alumni and friends; and
 - continuous improvement.



- Goal #1 – Expand Opportunities for student success while maintaining academic rigor.
- Goal #2 – Develop facilities that will support our pursuit of excellence.
- Goal #3 – Continue to develop a diverse and strong faculty and staff.
- Goal #4 – Continue to build our national and international reputation through innovative scholarly research/creative activities and high quality students.
- Goal #5 – Increase the visibility and stature of the College of Natural and Applied Sciences as we engage our constituents.
- Goal #6 – Model the university's public affairs mission.
- Goal #7 – Continue to work with the development staff on friendraising/fundraising.



CNAS Facts

- CNAS
- 8 departments and 1 program
- Nearly 200 full-time faculty and staff
 - 118 tenured or tenure/track faculty
 - An additional 5 on half-time appts
 - 25 instructors (non-tenure eligible)
 - Over 80 graduate students on assistantship
 - 50 support staff (administrative/executive assistants, electronic support, etc)
- Annual Budget – just over \$17 million (nearly \$16 million for salaries and benefits, \$1.2 million for operations and equipment)

Student Facts

- 2394 undergraduate student majors in fall 2009
- 166 graduate students in fall 2009
- As of 8/16/10, Fall 2010 data:
2021 undergraduate students (318 FID majors to COBA)
150 graduate students

The following departments are up in headcount –
CHM, GGP, PAMS and Engineering Program.

Others are very close to last year and will probably
be ahead at census.



Department	Spring 2007 Majors Undergraduate/ Graduate	Spring 2008 Majors Undergraduate/ Graduate	Spring 2009 Majors Undergraduate/ Graduate	Spring 2010 Majors Undergraduate/ Graduate
Agriculture	354/21	359/21	341/20	372/28
Biology	420/45	458/50	518/42	520/36
Chemistry	126/14	130/18	131/13	151/20
Computer Science	134/4	147/1	115/2	117/3
Engineering	0/0	0/0	49	95
Fashion and Interior Design	415	396	359	Now in COBA
Geography, Geology & Planning	124/23	147/27	154/28	207/31
Hospitality and Restaurant Administration	273	271	249	254
Mathematics	144/23	133/20	136/20	140/21
Physics, Astronomy & Materials Science	60/12	66/16	58/13	58/8



CNAS Undergraduate Research Day March 27, 2009

- The purpose of this event was to give undergraduates the chance to share their research and show off their hard work to other students and the community. This was also a great opportunity for them to gain experience in presenting their work. Judges consisted of emeritus faculty, invited faculty from other universities and community leaders. There were **45 abstracts** submitted from the students. First and second place awards were given in 8 categories. Over 300 guests attended the event. Feedback from guests, judges, faculty and students was extremely positive. Next years' event will no doubt have more entries and draw a larger crowd.

Recent Peer Reviewed Publications with undergraduate student co-authors

- **J. Doak**, R.K. Gupta, K. Manivannan, K. Ghosh, and P.K. Kahol, "Effect of Particle Size Distributions on Absorbance Spectra of Gold Nanoparticles," *Physica E: Low Dimensional Systems and nanostructures*, 42, 1605 (2010).
- **Glover, G.**, N. Gerasimchuk and K. V. Domasevitch, "Monovalent K, Cs, Tl and Ag Nitrosodicyanmethanides: Completely Different 3D Networks With Useful Properties," *Inorganic Chemistry*, 2008, manuscript # ic-2208-1364w.R1.
- **Owen, Travis**, Fernande Grandjean, Gary J. Long, Konstantin V. Domasevitch, and Nikolay Gerasimchuk, "Synthesis and Characterization of Two Intensely Colored Tris(benzoylcyanoxime)iron(II) Anionic Complexes," *Inorg. Chem.*, 2008, **47**, 8704-8713.
- **Pennington, Niall S.**, Mark M. Richter and Brenden Carlson, "Efficient Electrogenenerated chemiluminescence from Osmium(II) Polypyridine Systems Containing Tetraphenylarsine or Diphenylphosphine Ligands," *Dalton Trans.*, 2010, **39**, 1586–1590.
- Evans, Kevin, Davis, George H, **Fultz, Travis L.**, Miller, James F., **Thomas, Drew B.**, GSA South Central Sectional Meeting, "Decaturville structure, central Missouri: Evidence for a pre-Devonian marine impact?," Geological Society of America South-Central Section Meeting, Dallas, TX, March 2009. [Abstract published in GSA Abstracts with Programs, v. 41(2), p. 30.]
- **Looker, Rachel**, Mickus, Kevin, and Gouzie, Douglas, GROUND PENETRATING RADAR AND ELECTRICAL RESISTIVITY SURVEY NEAR BREAKDOWN CAVE, CHRISTIAN COUNTY, MISSOURI, Geological Society of America South-Central Section Meeting, Hot Springs, AR, March, 2008. [Abstract published in GSA Abstracts with Programs, v. 40(3), p. 32.]
- Miller, J.F., Evans, K.R., Ausich, W.I., **Bolyard, Susan E.**, Davis, G.H., Ethington, R.L., Rovey, C.W., II, Sandberg, C.A., Thompson, T.L., and Waters, J.A., 2008, Mixed-age echinoderms, conodonts, and other fossils used to date a meteorite impact, and implications for missing strata in the type Osagean (Mississippian) in Missouri, USA, *in* Ausich, W.I., and Webster, G.I., eds., *Echinoderm Paleobiology*, Indiana University Press, Bloomington, IN, p. 246-288.

Program Review

- Computer Science – ABET visit fall of 2006, external reviewer fall of 2007, action plan spring 2008, presented to BOG spring 2009.
- Geography, Geology and Planning – Self-study summer 2009, external reviewer fall of 2009, action plan spring 2010.
- Physics, Astronomy and Materials Science – Self-study summer 2009, external reviewer fall 2009, new head fall 2010, action plan by end of 2010.
- Mathematics – Self-study summer 2009, external reviewer fall 2009, action plan summer 2010.
- Agriculture – Pre-program review consultation fall 2009, report received and action plan in progress.
- Chemistry – Self-study summer 2010, external reviewer to be scheduled fall of 2010.
- Biology – Self-study summer 2010, external reviewer to be scheduled fall of 2010.
- HRA – Self-study will start this year for accreditation visit in 2011.
- Engineering – Will follow S&T ABET accreditation cycle initially.

Facilities Update

- Mountain Grove
 - Student housing (duplex) and bottling facility will be complete soon.
- Several Classroom Upgrade Projects – Summer '10
 - Cheek, Temple, Kemper
- Greenhouses – Karls Hall and Temple Hall
 - Karls Hall phase I will be complete next week, phase II will be bid out for January '11, Maintenance plans to be written this fall
- Vivarium – Temple Hall
 - Complete plans 2010, start construction early 2011
- Bull Shoals Field Station
 - NSF funded laboratory will be complete this fall.
- Darr Agricultural Center
 - Phase III will be complete in April of 2011.
- Teaching Laboratories – Renovations needed.
- Space Planning
 - Engineering needs lab and classroom space as we prepare to offer the full curriculum starting next year.
 - Needs assessment for future projects.

Faculty Promotions - 2010

- Professor
 - Arbindra Rimal – Agriculture
 - Wenping Qiu – Agriculture
 - Kartik Ghosh – Physics, Astronomy and Materials Science
- Associate Professor with tenure
 - Maciej Pszczolkowski – Agriculture
 - Gary Meints – Chemistry
 - Anita Liu – Computer Science
- Professor with tenure
 - Bob Egbert

Faculty Promotions - 2010

- Senior Instructors
 - Sue Webb – Agriculture
 - Michael Scroggins – Computer Science
 - Donna Sherrill – Mathematics
 - Nancy Asay – FID
 - Marciann Patton - FID

CNAS New Faculty/Staff

- AGR – Assistant Prof – Melissa Hudson
- AGR – Associate Research Professor – Chin-Feng Hwang
- AGR – Accounting Specialist – Sue Morris
- AGR – Administrative Assistant – Laurie Wilson
- BIO – Instructor – Jeff Parmelee
- GGP – Instructor – Linnea Iantria
- HRA – Assistant Prof – Stephanie Hein
- EGR – Assistant Professor – Matt Pierson
- EGR – S&T Assistant Professor – Rohit Dua
- CNAS – Director, Science Educ. Program – Elizabeth Black
- CNAS –Administrative Assistant – Kimberly Clark



Visiting Research Faculty and Postdoctoral Associates

- PAMS – Postdoctoral Associate - Hao Yan (China)
 - Sponsored and funded by Bob Mayanovic
- PAMS – Visiting Research Professor – Yesappa Kolekar (India)
 - Sponsored by Kartik Ghosh
- MTH – Visiting Research Professor – Young-Ho Park (Korea)
 - Sponsored by Les Reid
- MTH – Visiting Research Professor – Mei Wang (China)
 - Sponsored by Shouchuan Hu

CNAS New Leadership

- Ken Vollmar – Head – Department of Computer Science
- Dave Cornelison – Head – Department of Physics, Astronomy and Materials Science
- Stephanie Hein – Assistant Department Head – Hospitality and Restaurant Administration
- Jim Bellis – Assistant to the Head – William H. Darr School of Agriculture
- Arbindra Rimal – Unit Leader, Agricultural Business, Education and Communications – William H. Darr School of Agriculture
- Gary Webb – Unit Leader, Animal Science – William H. Darr School of Agriculture
- Sue Webb – Coordinator of the William H. Darr Agricultural Center
- Justin Sissel – Farm Operations Manager

Selected Faculty Accomplishments

- <http://blogs.missouristate.edu/cnas-newswatch/>
- Dr. Janice Greene received the Outstanding Lifetime Service Award to an Individual in Recognition of promoting environmental education in Missouri. The award was presented by the Missouri Environmental Education Association at their annual conference in October.
- Dr. Chris Barnhart received the Conservation Champion Appreciation Award from the US Fish and Wildlife Service, at the Regional Endangered Species Coordinators Meeting in October.
- Barnhart also received the Research Collaborator of the Year Award from the Missouri Department of Conservation at the 2010 Missouri Natural Resources Conference.
- Dr. Pawan Kahol, associate dean and professor of physics, astronomy and materials science, was selected as the recipient of the 2009 Carnegie Foundation for the Advancement of Teaching Missouri Professor of the Year. He received the award November 19 in Washington, D. C.

- Dr. Mark Richter has been invited to present a keynote lecture at the 13th Royal Chemical Institute's (RACI) Convention. The conference was held July 4-8, 2010 in Melbourne, Australia. The theme of his conference was Measurement and Sustainability. Dr. Richter is actively involved in chemical research in the field of light emitting systems.
- Richard Biagioni, Chuck Rovey, and Doug Gouzie received a grant from The U.S. Department of Energy, NETL, for 2009, for the project entitled, "Monitoring and Numerical Modeling of Shallow CO2 Injection, Greene County, Missouri, in the amount of \$293,117.
- Dr. Carl Riegel's co-authored article "Vertical Inequity in the Tax Assessment of Lodging Properties" was accepted by the *International Journal of Hospitality Management*, a top-tier hospitality journal.
- Nick Gerasimchuk was just awarded a US Patent - #7,727,967 B2 for "Cyanooxime Inhibitors of Carbonyl Reductase and Methods of Using Said Inhibitors in Treatments Involving Anthracyclines"

Belshoff, Richard, "Remarks on Reflexive Modules, Envelopes, and Covers", Beitrage zur Algebra und Geometrie ("Contributions to Algebra and Geometry"), Volume 50, no. 2, pp.353-362 2009.

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Guo, Kanghui (with G. Easley and D. Labate), "Analysis of Singularities and Edge Detection Using the Shearlet Transform", Proceedings of SAMPTA`09, Marseille 2009

Hu, Shouchuan (with Papageorgiou), "Three Non-trivial Solutions for Not Necessarily Coercive p-Laplacian Equations", Proceedings of the Edinburgh Mathematical Society, 52 (2009), 679–688

Hu, Shouchuan (with Papageorgiou), "Nontrivial Solutions for Superquadratic Nonautonomous Periodic Systems", Topological Methods in Nonlinear Analysis, 34 (2009), 327–338

Killion, Kurt; Paul, Clyde; Plymate, Lynda; Campbell, Larry; Ashley, David; Ragan, Gay, "Foundations of Mathematics for Teachers: Laboratory Activities Incorporating Technology and Manipulatives", 2009 (2nd edition).

Sun, Xingping (with Damelin, S., Levesley, and J., Ragozin), "Minimal Energies on Homogeneous Manifolds", J. Complexity 25 (2009), no. 2, 152--162.

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Dong, L. (2009). DNA-Templated Synthesis of Pt Nanoparticles on Single-Walled Carbon Nanotubes. *Nanotechnology*, 20, 465602.

Tolani, S. B., Craig, M. M., DeLong, R., Ghosh, K. C., Wanekaya, A. K. (2009). Towards biosensors based on conducting polymer nanowires. *Analytical and Bioanalytical Chemistry/Springer*, 393, 1225-1231.

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Mayanovic, R. A., Anderson, A. J., Bassett, W. A., Chou, I. M. (2009). The structure and stability of aqueous rare-earth elements in hydrothermal fluids: New results on neodymium(III) aqua and chloroaqua complexes in aqueous solutions at up to 500 °C and 520 MPa. *Chem. Geol.*, 259, 30-38.

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Chen, Zhigang, Jiaqi Liu, Deng Li, Hui Liu, and Athanasios Vasilakos, "SOBIE: A novel super-node P2P overlay based on information exchange," Journal of Computers, Sept 2009, 853-861.

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Shade, Eric, "Operating systems on a stick," Journal of Computing Science in Colleges 24 (5), 2009, 151-158.

Shade, Eric, "Size matters: Lessons learned from a broken binary search," Journal of Computing Science in Colleges 24 (5), 2009, 175-182.

Smith, Lloyd and James Downey, "Predicting baseball Hall of Fame membership using a radial basis function network," Journal of Quantitative Analysis in Sports (<http://www.bepress.com/jqas/vol5/iss1/6>), 5(1), 2009.

Wang, Yang, "On the shift-table in Boyer-Moore's String Matching Algorithm," International Journal of Digital Content Technology And Its Applications, Vol. 3, No. 4, pp. 10-20, 2009.

And many, many, many more!!!!!!



External Funding – FY10

- ❑ 110 Awards were made to CNAS Faculty and Staff valued at over \$5 million.
 - ❑ Agriculture – 9 awards for \$761,453
 - ❑ Center for Grapevine Biotechnology – 6 awards for \$251,940
 - ❑ Missouri Viticulture and Enology Center – 1 award for \$280,660
 - ❑ Biology – 29 awards for \$620,804
 - ❑ Chemistry – 2 awards for \$121,263
 - ❑ GGP – 6 awards for \$549,386
 - ❑ CRPM – 25 awards for \$1,245,780
 - ❑ OEWRI – 6 awards for \$129,544
 - ❑ Computer Science – 1 award for \$3,750
 - ❑ Mathematics – 5 awards for \$295,088
 - ❑ PAMS – 12 awards for \$902,761

- ❑ CASE – 1 award for \$400,000
- ❑ CBLS – 8 awards for \$895,507



CNAS Grant Incentive Program

	Spring 2008	Fall 2008	Spring 2009	Fall 2009	Spring 2010
Agriculture	\$400	\$800	-	\$400	\$400
Agriculture – Mt. Grove	\$1200	\$400	-	\$800	-
Biology	\$1600	\$2000	\$400	\$2800	\$800
Chemistry	\$2000	\$1600	\$400	\$2000	-
Computer Science	\$400	\$400	-	-	-
Geography, Geology and Planning	\$1600	\$1200	\$1200	\$800	\$400
Mathematics	\$800	-	\$1200	\$1200	-
Physics, Astronomy and Materials Science	\$1200	\$2400	\$400	\$2800	\$400
Center for Resource Planning and Management	\$400	-		\$400	-



Outreach – 2010-2011

- November 6, 2010 – Expanding Your Horizons
- November 13, 2010 – MAKO undergraduate Math Research conference
- February 12, 2011 – Science Olympiad (on Missouri State campus)
- 2011 – JETS Competition
- 2011 – FFA Contest on Missouri State Campus
- April 5-7, 2011 – Ozarks Science and Engineering Fair
- April 20, 2011 – Pummill Relays - Mathematics
- April 15-16, 2011 – Missouri Academy of Science
- April/May, 2011 – NCTM – Statewide Mathematics Competition (middle and elementary)
- And much more!!!!



- Carbon Sequestration in Springfield, MO—How feasible is its geological confinement? Lessons from a pilot study, speaker: **Dr. Melida Gutierrez**, Department of Geography, Geology & Planning
 - September 14, Tuesday, 7:30-8:30, Temple Hall 002
- Electric Energy Consumption and the Challenge of Renewable Energy, speaker: **Dr. Bob Egbert**, Cooperative Engineering Program
 - October 12, Tuesday, 7:30-8:30, Temple Hall 002
- Yachana - Ecuador, speaker: **Abbe Ehlers**, Department of Hospitality & Restaurant Administration
 - November 9, Tuesday, 7:30-8:30, Temple Hall 002

PARKING WILL BE AVAILABLE IN LOT 4, SOUTH OF TEMPLE HALL



Development Report

- Gifts to Missouri State University Foundation – CNAS
 - FY06 \$610,473
 - FY07 \$727,700
 - FY08 \$1,172,839
 - FY09 \$2,290,634
 - FY10 \$1,429,724
- CNAS Dean's Equipment Fund Challenge – Dean matches \$1 for every \$5 donated up to \$5K
 - We now have \$13,580 so far and I owe \$1500 to catch up to my match. We are over half way to our initial goal!!!
 - Short term goal - \$30 K – use \$20K for equipment, put \$10 K in an endowment.
 - Long term goal - \$5 M in an endowed account for equipment

Friendraising/Fundraising Advisory Boards in CNAS

- The following units have advisory boards that are now meeting regularly –
 - Biology
 - Chemistry
 - Bull Shoals Field Station
 - Mountain Grove Campus
 - Computer Science
 - Hospitality and Restaurant Administration
 - Physics, Astronomy and Materials Science
 - Geography, Geology and Planning
 - Professional Science Masters Advisory Board
- Thank you, thank you, thank you!

Scholarship Awards

Unit	Scholarship \$ awarded 2007-2008	Scholarship \$ awarded 2008-2009	Scholarship \$ awarded 2009-2010
Agriculture	\$56,850	\$51,550	\$42,400
Biology	\$6,000	\$2,400	\$21,150
Chemistry	\$21,450	\$25,744	\$24,062
CNAS	\$15,600	\$20,800	\$12,748
Computer Science	\$5,000	\$5,625	\$2,350
Engineering			\$2,000
Geography, Geology and Planning	\$2,625	\$3,875	\$4,858
Hospitality and Restaurant Administration	\$2,750	\$2,250	\$8,830
Mathematics	\$23,000	\$34,500	\$17,740
Physics, Astronomy and Materials Science	\$3,075	-	4120
Total	\$136,350	\$146,744	\$140,258

Other Important Dates

- September 2 – First Home Football Game
- September 7 – College Council Meeting
- September 9 – Faculty Senate Meeting
- September 13-17 – Public Affairs Week
- September 24 – HRA Honors and Scholarship Luncheon
- September 28 – Majors Fair
- October 2 – Cattle Sale – Darr Agricultural Center
- October 4-8 – Academic Integrity Week
- October 4-5 – HRA Recruiter's Fair
- October 7-8 – Ozarks New Energy Conference
- October 12 – Engineering and Science Career Fair



More Important Dates

- October 12 – College Council Meeting
- October 14-15 – FALL BREAK – No Classes
- October 19 – Graduate School Fair
- October 21 – Faculty Senate Meeting
- October 21 – CNAS Emeritus Faculty Dinner
- October 22 – Board of Governor's Mtg
- October 23 – Homecoming
- October 27 – Sustainability Fair – PSU
- November 6 – Expanding Your Horizon
- November 9 – College Council Meeting
- November 11 – Faculty Senate Meeting
- November 13 – MAKO Undergraduate Math Research Conference

Have a wonderful semester!

- In addition to making sure that we are full participants in the long range planning process and university budget discussions, your dean will try to make sure we meet all of our strategic goals for 2010-2011, teaching Advanced Organic Chemistry this fall, presenting a paper at the annual AASHE Conference in Denver in October, helping with the sustainability fair on October 27, serving on a team for an evaluation visit for the Higher Learning Commission (HLC) in April 2011 and much, much more!

A swinging
start to the
new year!



follow your
PASSION
find your
PLACE