

CNAS 2013 Annual Report

July 1, 2014

Tammy Jahnke, Dean

The CNAS Strategic Plan and Goals document is updated each year but is driven by our vision, mission and shared values.

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

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 – our commitment to public affairs. We are committed to excellence in teaching, research and scholarly activities, and community and professional service.

Shared Values - 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.

The annual report is structured around a set of college goals which are tied to the university long range plan and annual goals. It is posted in full on our website - <http://science.missouristate.edu/College-Policies.htm>. All college annual reports are posted on the college website - <http://science.missouristate.edu/College-Annual-Reports.htm>. All department annual reports which include assessment reports are posted on a password protected website – Go to <http://science.missouristate.edu/restricted/assessment.htm> and click on assessment and reports.

Goals 2013-2014

- Enrollment
- Funding
- Accreditation
- Diversity and Inclusion
- Student Success
- Facilities and Sustainability
- Raising the Profile

CNAS - STEM Graduates

Fiscal Year		FY2009	FY2010	FY2011	FY2012	FY2013
Department	Student Level	Headcount Value	Headcount Value	Headcount Value	Headcount Value	Headcount Value
Biology		113	140	130	111	131
	GR	22	27	11	17	13
Chemistry	UG	91	113	119	94	118
	GR	21	21	28	39	17
Computer Science	UG	7	2	7	9	2
	GR	14	19	21	30	15
Geography, Geology, & Planning	UG	14	30	17	25	18
	GR	0	2	1	4	1
Hospitality & Restaurant Admin	UG	14	28	16	21	17
	GR	45	48	70	97	83
Mathematics	UG	5	7	18	15	13
	GR	40	41	52	82	70
Natural & App Sci/Engineering	UG	89	87	69	70	72
	GR	31	33	34	38	34
Physics, Astronomy, & Mat Sci	UG	3	6	8	8	7
	GR	28	27	26	30	27
	UG				15	33
	GR	1	0	0	0	0
	UG	0	0	0	15	33
	GR	9	17	8	13	15
	UG	3	11	3	5	4
	GR	6	6	5	8	11

Number Tenured/tenure-track Faculty BY CNAS DEPARTMENT

2014	Tenured/tenure-track Faculty	Instructors/Lab supervisors
BIO	14 FTE 13 FT + Head + AD Hired two tenure track Searching for one tenure track fall of 2014 one ½ time faculty end in December of 2014	2/4 Searching for one lab supervisor
CHM	13.5 FTE 13 FT + Head Hired one tenure track Searching for one tenure track fall of 2014 One ½ time faculty for fall 2014	3/
CSC	5.5 FTE 5 FT + Head	2/
GGP	16.5 FTE 16 FT + Head Hired two tenure track	4/
HRA	4.5 4 FT + Head Hired one tenure track	1/ Hired one instructor
MTH	21 FTE 20 FT + Head + AD Hired two tenure track	11/
PAMS	11.5 FTE 11 FT + Head (3 retiring) Hired one tenure track Searching for two tenure track summer of 2014	2/1
EGR	5.5 FTE 5 FT + Director S&T searching for another civil engineer	1

CNAS - # of Majors

		Fall 2010	Fall 2011	Fall 2012	Fall 2013
Department	Student Level	Headcount Value	Headcount Value	Headcount Value	Headcount Value
Biology		662	662	716	725
	GR	46	60	46	45
	UG	616	602	670	680
Chemistry		209	224	204	256
	GR	18	25	16	23
	UG	191	199	188	233
Computer Science		152	179	197	256
	GR	7	7	1	3
	UG	145	172	196	253
Geography, Geology, & Planning		249	274	222	229
	GR	45	42	36	33
	UG	204	232	186	196
Hospitality & Restaurant Admin	UG	228	253	218	243
Mathematics		189	196	181	199
	GR	30	26	26	34
	UG	159	170	155	165
Natural & App Sci/Engineering		140	163	160	190
	GR	0	0	0	0
	UG	140	163	160	190
Physics, Astronomy, & Mat Sci		104	104	99	88
	GR	11	13	16	20
	UG	93	91	83	68

**All UG majors listed within “Natural & App Sci/Engineering” are the cooperative engineering program students.

Low Completer Programs to watch -

The PAMS department has included recruitment as a priority and the number of majors has increased. In addition PAMS is working with other units on campus to encourage students to seek a double major (second major in physics). These two efforts have increased the number of graduates. The department is working toward a goal of 10 graduates/year and they exceeded that goal this past year! An additional BS program was added to the list in 2013 – Planning. The three year rolling average of BS graduates dropped below 10. This program has the capacity to double the number of majors and has been encouraged to do so. All efforts within this program will be focused on recruitment in the next few years with the goal of removing themselves from the “low completer” list.

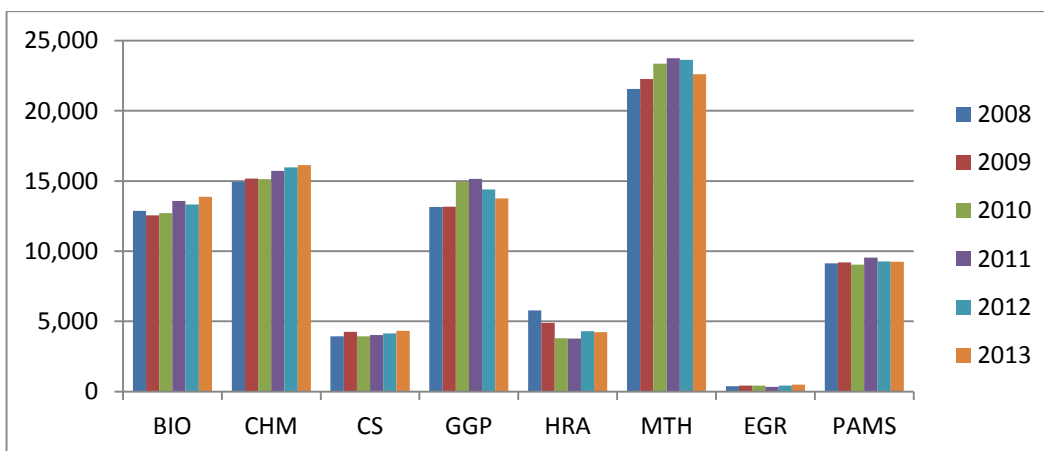
CNAS has four graduate programs that were declared “low completers” in 2010 – Chemistry, Geospatial Sciences, Mathematics and Materials Science. All programs except for

Materials Science have successfully removed themselves from the 2013 listing. Materials Science has had a steady enrollment of 10-15 students in the program. They are working on the development of retention and completion plans for all current students. The program graduated three and five students the past fiscal years. CNAS will continue to monitor these programs!

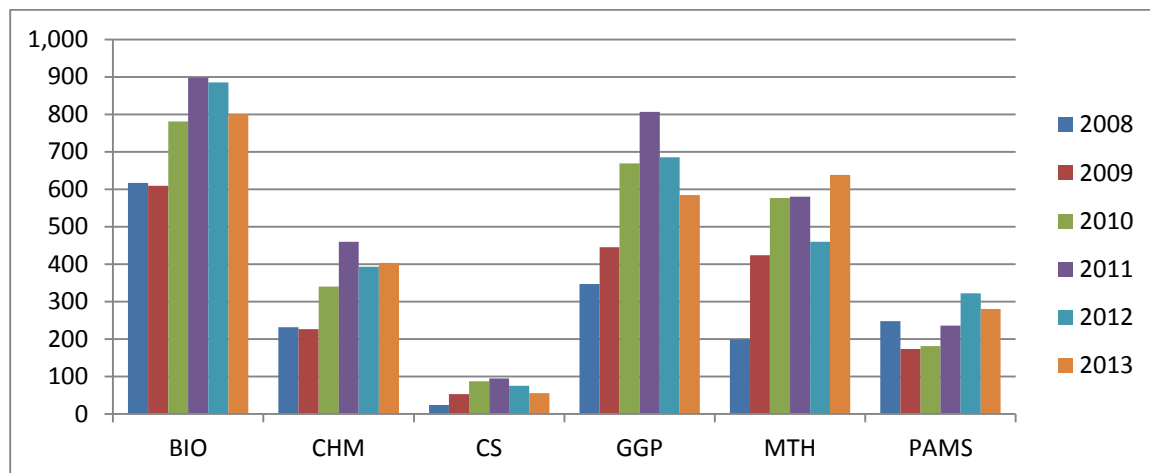
Although number of majors and number of graduates are important, it is also important to note credit hour production. We will be watching to see how the new general education program impacts credit hour production in CNAS.

Calendar Year		2008	2009	2010	2011	2012	2013
College	Course Group	SCH	SCH	SCH	SCH	SCH	SCH
		Value	Value	Value	Value	Value	Value
Agriculture, School of		0	0	0	5,071	10,269	11,712
Arts & Letters		91,444	92,467	94,174	94,767	94,568	95,427
Business		97,730	100,625	105,469	102,843	99,138	100,350
Education		33,953	36,162	35,903	34,558	34,186	34,350
Enrollment Entry (Enrllmt Srv)	GEP/IDS/UHC	254	242	0	0	0	0
Health & Human Services		71,559	72,841	74,691	78,038	80,602	84,133
Humanities & Public Affairs		72,787	74,009	75,124	77,050	79,140	78,205
Library Science, Department of		280	258	241	292	272	253
Natural & Applied Sciences		97,338	97,158	97,422	92,866	88,306	87,441
Undergraduate College/Provost	GEP/IDS/UHC	6,530	3,450	6,946	7,028	7,041	7,800
Total by COLUMNS		471,875	477,212	489,970	492,513	493,522	499,671

SCH production for Undergraduate Students by department (CY)



SCH production for Graduate Students by department (CY)



Scholarship Dollars awarded to CNAS students this year!

Department	Scholarships	Total Award Amounts
Biology	12	\$9,764
Chemistry	22	\$23,800
College of Natural and Applied Sciences	16	\$23,550
Computer Science	9	\$5,000
Geology, Geography, and Planning	12	\$6,700
Hospitality and Restaurant Administration	13	\$5,715
Mathematics	26	\$19,150
Physics, Astronomy, and Material Sciences	12	\$9,150
Total	122	\$102,829

** The above spreadsheet does not reflect the scholarships that we give to students for study away trips. Apparently the university is not collecting this information by college.

Student Scholarship Winners – Chemistry and HRA hold annual banquets to recognize scholarship recipients. CNAS held an event for all other scholarship recipients in fall of 2013. The next all-college scholarship reception will be held in October of 2014 – Homecoming Week.

Goals 2013-2014

Enrollment

- ✓ Graduate Programs
 - Chemistry looking into a non-thesis option for degree completion – not yet complete but the department is still working on it.
 - Continue to develop tracks for MNAS and PSM– online, blended, face-to-face – brochure published and will be updated annually. Departments continue to work on developing online graduate level courses. This remains a challenge but we continue to work on it. The first PSM student graduated in May of 2014 and the second will graduate in August of 2014. Published first student manual for PSM/MNAS students in CNAS which was a huge success. A revision of this manual is already in progress this summer.
 - Continued attention to retention and timely graduation of all current graduate students – This attention to detail has led to the removal of several programs off of the “low completer” list. The emphasis on timely graduation will continue to be emphasized.
- ✓ Undergraduate Programs
 - Engineering added seven counties to the list that we may recruit from so we are up to 16 counties at this time. We should begin to see increases by fall of 2014.
 - CNAS continues to focus on recruitment at Missouri community colleges. In 2013-2014 we updated transfer guides to OTC, West Plains, Crowder and St. Charles CC. We will continue to review these guides annually to keep them updated. In 2013-2014 some departments added guides to St. Louis CC and KC area CC. In addition we are planning trips to CC to give faculty seminars and recruit students. Paul Rollinson visited Crowder College and a larger group visited St. Charles CC. HRA visited both St. Louis CC and Johnson County CC in Kansas City. CNAS helped to write, advertise and implement the first STEM Transfer Scholarship program.
 - Course Transformation projects to increase retention and student success – Departments continue to monitor retention and student success. Transformations are occurring every year. The transformation that has led to the need for the most curricular change is shortening the time needed for students to be prepared for college algebra. Curricular changes will be made to remove MTH102 as a course. At the present time students are either placed into MTH101 (ACT scores <19 or placement test) or MTH103 (ACT scores 20-22) or MTH135 – College Algebra (ACT score of 23 or higher). Students also have an option of taking MTH130 – Contemporary Math with an ACT score of 22 or higher. At this point we have been able to do this with no additional resources as MTH101 and 103 now have more contact hours as we are no longer offering MTH102. We could make even more significant changes in these courses and college algebra with a significant renovation of Cheek Hall.
 - All departments are monitoring enrollments of general education courses as we transition from the old to the new general education program. This may have significant implications for some courses but we will not know that until spring 2015 at the earliest.
- ✓ Assessment of Student Learning – continue, focus on completing plans for graduate programs. Departments submitted very good annual reports that include assessment data and analysis. Each department has an assessment plan.
- ✓ Mathematics continues to work with West Plains students to offer a reasonable pathway to help students earn a BSEd.
- ✓ CNAS faculty continue to work with high school teachers with professional development, dual credit and many other activities.
- ✓ New Programs that have increased numbers in CNAS –
 - Many electrical engineering students are now also earning a physics degree from Missouri State.

- CNAS is involved in the new museum studies minor which is attracting students.
- Physics, mathematics and material science have started a computational science undergraduate certificate program.
- Elementary Math Specialist Graduate Certificate Program – We have successfully enrolled over 20 students in this new program.
- Professional Science Masters (PSM) program – The first two students will graduate in 2014. Still working on recruitment/retention in this new program.

Public Affairs

- ✓ Study Away - Faculty led short term study away trips in 2013-2014

May 2013	Crete HRA	Abigale Ehlers
May 2013	Galapagos Islands BIO	Dan Beckman
March 2014	Portugal GRY/GLG	Linnea Iantria, Damon Bassett
May 2014	Costa Rica BIO	Dan Beckman
May/June 2014	Nicaragua BIO	Jessica Sewald
July 2014	India IDS	Saibal Mitra
July 2014	Brazil BIO	Janice Greene

Short Term Study Away – Brazil, Caribbean, Galapagos Islands, Greece

2009-2010	30 CNAS students participated out of 88 total at university
2010-2011	60 CNAS students participated out of 154 total at university
2011-2012	62 CNAS students participated out of 223 total at university
2012-2013	48 CNAS students participated out of 304 total at university
2013-2014	53 CNAS students participated out of 292 total at university

We take students on a number of domestic trips as well!

- ✓ Ethical Leadership – All departments have ethics statements and the leadership team considers this in all we do.
- ✓ Community Engagement/Public Science -
 - *CNAS hosts STEM competitions – regional science fair, science Olympiad, JETS (TEAMS), Chemistry Olympiad, Pummill Relays (brings students and teachers to campus annually!)*
 - *Summer Camps/Activities – GLADE at Bull Shoals Field Station (16 HS), Science Week for HS students with Discovery Center (replacing Missouri Innovation Academy), and NSF REU Math Program (9 undergraduate students from across the country)*

- *PhysBiz Truck – Focus on elementary science (second and fourth grade) students and teachers. Visited many fourth grade classrooms in spring of 2014, teacher training planned for summer of 2014. Applying for grant funding.*
- *Baker Observatory – public observing nights often have 200 people in attendance*
- *Bull Shoals Field Station – many groups use the station*
- *CNAS is partnering with Springfield-Greene County Library on a number of projects – summer of 2014 Fizz, Boom, Read; science lectures in fall 2014, reading lists for public lecture series.*
- *CNAS Public Lecture Series*
- *CNAS faculty and departments stay connected with the Discovery Center and the Zoo and Department of Conservation and other units that hire our students or supervise service learning or volunteer activities for current students.*
- *CRPM continues to work with the city, county and area communities to support SMCOG and many funded projects.*

Connections with STEM Teachers

- ✓ While math teachers are here for Pummill Relays they receive professional development.
- ✓ We offer workshops for dual credit teachers in most STEM areas on a regular basis.
- ✓ We stay connected with area STEM teachers through professional organizations and other communications.
- ✓ Missouri State is the state-wide coordinator for Leopold Project and Project WET. We also help with Project Wild and Learning Tree. These are environmental education programs for K-12 teachers.
- ✓ Gigi Saunders (BIO) and Bryan Breyfogle (CHM) have NSF Noyce funding for teacher development. 22 HS science teachers participated in the summer of 2013. A one year extension was received from NSF due to the ever changing requirements from DESE this past year.
- ✓ Lynda Plymate (MTH) has external funding to work with area math teachers – using technology in the classrooms.
- ✓ Jill Black (GGP) has external funding to do professional development for elementary teachers who want to know more science.
- ✓ Elementary Math Specialist Certificate Program is approved. We have over 20 students enrolled at Missouri State for this program (which is a state-wide program).

Continue to support sustainability

- ✓ Tammy Jahnke and Janice Greene continue to serve of the University Sustainability Advisory Committee.

Diversity Activities – a public affair

- ✓ The CNAS Diversity and Inclusion Committee continues to meet and schedule events. This past year they organized some small group meetings for those with like interests in specific activities. They also organized the second annual college picnic. They are working on a college website to highlight our diverse faculty and student population using

GIS (skills in GGP).

- ✓ CSC faculty organized two vans of 17 female CIS and CSC majors to attend the NCWIT Conference in Kansas City.
- ✓ A group of five faculty from CNAS visited University of Maryland – Baltimore County to meet with Dr. Freeman Hrabowski and his staff. We learned about their Meyerhoff Scholar Program and we saw some great classrooms that increase student engagement in the sciences and math.
- ✓ Biology offered two courses for a group of Chinese students from Qingdao University as part of a biotechnology program. Although there were some bumps along the road we (biology and international programs) believe that we have worked them out so biology will once again host a group of students in fall of 2014.
- ✓ CNAS faculty attended the state-wide diversity conference held on campus.

Engaged Inquiry

- ✓ Our goal this year was to submit 100-120 external grant proposals in coming year including graduate students and faculty course buy-outs where appropriate. By March of 2014 CNAS and our centers submitted 95 proposals. These proposals were submitted by 49 different CNAS faculty members!

FY14 numbers through March of 2014

95 proposals submitted/ by CNAS and our centers (BSFS, CRPM and OEWR)
with 53 awarded

BIO – 20

CHM – 13

CSC – 1

EGR – 3

GGP – 6

MTH – 1

PAMS – 22

BSFS – 6

CRPM – 16

OEWR – 7

Focused funding on nanotechnology

Nanotechnology project – In early 2013 through a partnership we funded \$30 K from provost, VP research and CNAS dean for a total of \$90K. Proposals were resubmitted and reviewed in February. The guiding principle for funding proposals was if it fit into the Life Cycle Analysis of CarbonNanoTubes (CNTs). Each of the following research teams received \$10,000 in spring of 2013: Kim (biology); Wanekaya (chemistry); CASE staff with Wanekaya; Schweiger (biology); Steinle (chemistry); Barnhart, Mathis, Beckman (biology); Durham (biology and CBLs); and Kovacs, Wait (biology). All of the above have agreed to have work done and are prepared to present results at a conference in fall of 2013 or early spring of 2014. All have agreed to submit a grant proposal for major research funding by January 2015 - either solo or in appropriate groups. I will have preliminary reports from all in August of 2013. That left \$10,000 to fund follow-up projects that are truly making an impact. This \$10K was increased to \$60K with \$25K from the provost and \$25K from the VP for research. Funding was distributed as follows: Steinle lab

(\$2K), Wanekaya and collaborators (\$7.5K), Beckman (\$4K), Schweiger (\$10K), Kim (\$7K), Wait (\$7K), Kovacs (\$12K), CASE – Patel (\$5K), and Durham (\$5.5K). Presentations have been made and the group is now working on an NSF-REU proposal that will be submitted in August.

The college continues to support OEWRI (\$77,033); Baker Observatory (\$7,245); Bull Shoals Field Station (\$124,281); and CRPM (CNAS supports the center by funding the director and Dr. Wu who have joint appointments in GGP). The college also distributed nearly \$12,000 in incentives to faculty for submitting grants requesting in excess of \$30,000. These dollars are transferred to departments for faculty to use for travel or research expenses.

The college currently has allocated \$660,000 (one-time dollars) for start-up funds and summer fellowships for newly hired tenure-track faculty. These funds are typically spent within the first two years of a faculty member's time on campus.

Peer Reviewed publications/books/chapters/etc from the past five years. CNAS had 104 peer reviewed journal articles and books/chapters. In addition there were many, many, many presentations by students and faculty in 2013. (And when someone can get Digital Measures programmed to easily provide a report on faculty/student presentations – I will add the data.) It is abundantly clear that CNAS faculty are a major contributor to the total number of peer reviewed publications for Missouri State University. This data is from data pulled from Digital Measures on 2/26/14.

Year	2009	2010	2011	2012	2013
	#Contributions	#Contributions	#Contributions	#Contributions	#Contributions
College	Value	Value	Value	Value	Value
Agriculture, School of	14	8	9	11	4
Arts & Letters	77	85	74	58	98
Business	84	77	79	49	33
Education	21	29	28	28	31
Health & Human Services	43	44	51	42	41
Humanities & Public Affairs	86	80	67	95	64
Library Science, Dept of	0	1	3	2	7

Year	2009	2010	2011	2012	2013
	#Contributions	#Contributions	#Contributions	#Contributions	#Contributions
Department	Value	Value	Value	Value	Value
	91	97	107	74	104
Biology	34	26	23	19	18
Chemistry	6	21	19	16	19
Computer Science	4	2	0	0	3
Geography, Geology, & Planning	12	16	17	12	23
Hospitality & Restaurant Admin	0	5	2	2	2
Mathematics	9	12	14	8	15
Natural & App Sci/Engineering	1	0	3	0	1
Physics, Astronomy, & Mat Sci	25	15	29	17	23
Total by COLUMNS	91	97	107	74	104

- Find ways to work with Missouri EPSCOR – *Dan Beckman is representing Missouri State University and trying very hard to keep us in the playing field. The first NSF proposal was not funded. We have been successful with NASA*
- Set productivity measures for centers and institutes in CNAS – *we did not do this in 2012*
- ✓ Support and mentor student research (undergraduate and graduate)

2013-2014	TOTAL # of GA's with assistantship	State Funded	Grant Funded	STEM Funded
MNAS	5	5	0	0
Biology	28	24	4	0
Chemistry	19	19	0	0
Center for Resource Planning & Management	0	0	0	0
Computer Science	0	0	0	0
Geography, Geology & Planning	18	9	9	
Hospitality & Restaurant Administration	0	0	0	0
Mathematics	13	12	1	0
Physics, Astronomy & Materials Science	14	11	3	0
TOTAL AWARDED	97	80	17	0
Total Awarded in 2012-2013	101	70	23	8

A first ever reallocation of GA lines within the college was made along with making the STEM funded assistantships permanent within the college budget this past year so that the last column is empty. We have been funding 99-106 graduate students in CNAS over the past five years and we are looking reviewing budgets to see if more reallocations can be made to further increase the number of assistantships.

- ✓ Support and mentor student research/internships (next page). There is no significant change in the data table below since 2011. That tells me that we may be at capacity for undergraduate/graduate research or that we do not have an increasing number of students interested in research. It also tells me that either we do not have enough internships available or we do not have interested students. We are trying a new program in fall of 2014 to talk to first and second year students about internships. This event will be held in November in partnership with the Career Center and our LLC. All first and second year students in CNAS will be invited.
- ✓ CNAS Undergraduate Research Day – May 6, 2014 - 50 undergraduate research posters. This was the fifth annual event! 32/96 tenured/tenure track faculty mentored projects.

- ✓ CNAS participation in IDF 2014 – 53 of student presentations
- ✓ 26/96 faculty mentored a graduate student thesis in 2013. (This number has been 26-31 over the past three years.)
- ✓ 29/96 faculty mentored a graduate student presentation at IDF. (This number has ranged from 21-30 over the past three years.)
- ✓ Unduplicated list for graduate student/undergraduate student faculty mentors 46/96 for 2013!!!!
And this only includes the students who were able to present at the Missouri State University events. It does not include students who attended professional conferences in the region and across the nation.

Department	Undergrad internship headcount	Undergrad internship SCH	Undergrad research headcount	Undergrad research SCH	Grad internship headcount	Grad internship SCH	Grad research and thesis headcount	Grad research and thesis SCH
BIO Courses	398/399	398/399	498/499	498/499	796	796	798/799	798/799
BIO 2013 data	24	66	19	40	0	0	65	260
CHM Courses	397	397	399/499	399/499	796	796	798/799	798/799
CHM 2013 data	2	4	41	73	4	11	33	105
CSC Courses	399	399	596	596	796	796	798/799	798/799
CSC 2013 data	18	50	15	50	3	9	4	19
GGP courses	GLG399/GRY399/PLN599	GLG399/GRY399/PLN599	GLG499/GRY599/PLN596	GLG499/GRY599/PLN596	GLG796/PLN699	GLG796/PLN699	GEO780/GLG798&799/PLN696GRY799	GEO780/GLG798&799/PLN696/GRY799
GGP 2013 data	1/3/10	3/8/29	3/0/1	7/0/2	1/0	3/0	19	68
HRA courses	499	499						
HRA 2013 data	62	372						
MTH courses			497	497	796	796	798/799	798/799
MTH 2013 data			34	34	2	9	19	56
PAMS courses			386/486	386/486	796	796	MAT&PHY799	MAT&PHY799
PAMS 2013 data			20	21	0	0	11	48

Partners for Progress

- ✓ CNAS continues to work on JVIC collaborations –Kartik Ghosh serves as liaison.
- ✓ Work with Design and Construction and architects and contractors to finish Pummill Hall in a timely manner.
- ✓ Continue to work with community colleges
- ✓ Continue collaborations with K-12 schools and science/math competitions
- ✓ Continue collaborations with National Park Service and others
- ✓ Each department (one or more faculty, could include students) will visit a minimum of two companies/agencies in the coming year to ensure contacts for internships, coops and jobs for graduates.

Valuing and Supporting People

2013 Promotions

- Promoted to Full Professor
 - Kevin Evans - GGP
- Promoted to Associate Professor with tenure
 - Xiaomin Qiu - GGP
- Promoted to Senior Instructor
 - Brian High - CHM

2014 Promotions

- Promoted to Distinguished Professor
 - Paul Durham – BIO
 - Eric Bosch - CHM
- Promoted to Full Professor
 - Bryan Breyfogle - CHM
- Promoted to Associate Professor with tenure
 - Stephanie Hein – HRA
 - Day Ligon - BIO
 - Matthew Wright - MTH
 - Songfeng Zheng - MTH
- Promoted to Senior Instructor
 - Damon Bassett – GGP
 - Gary Stafford - MTH

University Award Winners - 2014

Missouri State University Foundation Awards for Research

Nikolay Gerasimchuk, Chemistry

Michael Reed, Physics, Astronomy and Materials Science

Missouri State University Foundation Awards for Service

Alexander Wait, Biology

Graduate College Awards

Outstanding Thesis Advisor Award—Daniel Beckman, Biology

Provost Fellow for Public Affairs

Kevin Evans – Geography, Geology and Planning

Citizenship and Service-Learning (CASL) Faculty Awards
Excellence in Service Learning Award

Annette Gordon, Chemistry

- ✓ CNAS established a new awards process in 2011 for faculty and staff to recognize outstanding work. First awards given in May of 2012 and listed below are the 2014 award winners based on their 2013 performance.
 - **Atwood Research and Teaching Award**
 - Bob Pavlowsky; Geography, Geology and Planning
 - **CNAS Excellence in Teaching Award Winners**
 - Melissa Dallas; Hospitality and Restaurant Administration
 - Katie Fichter, Chemistry
 - Bob Pavlowsky; Geography, Geology and Planning
 - Matt Siebert, Chemistry
 - **CNAS Excellence in Service Award Winners**
 - Nikolay Gerasimchuk, Chemistry
 - Chris Barnhart, Biology
 - Diane May; Geography, Geology and Planning
 - Diann Thomas, Chemistry
 - **CNAS Excellence in Research Award Winners**
 - Bryan Breyfogle, Chemistry
 - Melida Gutierrez; Geography, Geology and Planning
 - Reza Herati, Chemistry
 - **Faculty/Staff Excellence Awards—Student Nominated, Student Selected**
 - Dean Cuebas, Chemistry
 - Kyoungtae Kim, Biology
 - Gary Meints, Chemistry
 - Tricia Yarckow; Hospitality and Restaurant Administration
 - **CNAS Excellence Awards – Staff**
 - Tina Hopper, Biology
 - Linda Allen, Chemistry
 - Robin Powell, Computer Science

✓ Successful searches to date – All started in 2013.

Faculty

2014 Stephanie Hein, Hospitality & Restaurant Administration Department Head

2014 Gary Michelfelder, Geology Assistant Professor

2014 Albert Barreda, HRA Assistant Professor

2014 Timothy Brock, Planning/Geography Assistant Professor

2014 Gautam Bhattacharyya, Chemistry Assistant Professor

2014 Patrick Sullivan, Mathematics Assistant Professor

2014 Ryan Udan, Biology Assistant Professor

2014 Jokima Hiller, Instructor

2014 Sean Maher, Biology Assistant Professor

2014 Steven Senger, Mathematics Assistant Professor

2014 Peter Plavchan, Physics, Astronomy and Materials Science Assistant Professor

Staff hired during the 2013-2014 academic year

Jonathan Hardin, Chemistry Laboratory & Store Supervisor

Nadita Nag, Physics, Astronomy and Materials Science Laboratory Supervisor

Kristy Teague, Chemistry & Physics, Astronomy and

Materials Science Administrative Assistant

Brian Hays, Distributed User Support Specialist

Responsible Stewardship

Fiscal_Year	2010			2011			2012		
	MSU_SCH COST	DE_AVG SCH_COST	MSU_SCH DEL_AVG	MSU_SCH COST	DE_AVG SCH_COST	MSU_SCH DEL_AVG	MSU_SCH COST	DE_AVG SCH_COST	MSU_SCH DEL_AVG
Department	Value	Value	Value	Value	Value	Value	Value	Value	Value
BIO	188	196	95.92	168	204	82.35	163	199	81.91
CHM	138	211	65.40	143	228	62.72	151	222	68.02
CS	235	276	85.14	225	271	83.03	232	278	83.45
GGP	314	350	182.70	274	348	161.95	296	394	155.74
HRA	187	189	98.94	213	200	106.50	216	195	110.77
MTH	145	144	100.69	136	145	93.79	136	143	95.10
PAMS	188	246	76.42	202	240	84.17	206	252	81.75

✓ Dean and heads will allocate resources appropriately and college budget committee will continue to meet regularly.

- Based on Delaware cost numbers only – the chemistry department is in the most need of resources. Based on SCH production/faculty member chemistry is also in need of a faculty line.
- Computer science has seen the most significant increase in majors over the past five years. This increase is stretching their resources but has not impacted their Delaware numbers yet. I expect that with continued growth that another tenure-track/tenured faculty member will be needed.

✓ Space review and reallocation

Several spaces were reallocated in 2013-2014. Kemper 213 has been reallocated from a physics teaching lab to a GGP research lab. The physics teaching lab has moved to Kemper 202 (previously the PAMS GA office suite which is now moved to the Kemper 226 office suite). These moves have helped to meet the expanding needs of research in GGP. All space vacated by engineering has now been reallocated within CNAS. In addition the vivarium and recent hires in biology is leading to a shift in research spaces for biology faculty.

Renovations to Pummill Hall for HRA have begun with a funding plan. The project will be complete in 2015. The timeline is ambitious and may allow for a move in summer of 2015 if successful. This a game-changer for the HRA program!

A request has been made to the provost to acquire all of Temple Hall 156 for CNAS research lab

usage (not allocated at this point). The request has not been acted on to date.

The university hired an architect firm to look for new space/renovated space for CNAS. The specific request was for three new teaching labs for chemistry and biology, 5-6 new research labs (unassigned but intended for biology and GGP), and possible relocation of CRPM and CSC. The planning study concluded that the only solution to the space issue was to add an additional 17,600 net sq ft (26,000 gross sq ft) to Temple Hall at a cost of \$10.25 M along with renovations to Temple hall estimated at \$475,000. In addition renovations to Cheek Hall that would meet the needs of math and computer science would cost \$1.8 M.

After the architects left campus architects developed a plan to meet the needs of the three new teaching labs for chemistry and biology with renovations and the reallocation of all teaching space within Plaster Stadium to CNAS. The cost of this project is projected to be \$2.5 million. A request was submitted to the president for \$4.3 million to renovate Cheek Hall and provide for the needed teaching labs for chemistry and biology. There is a plan to complete this project although recent issues with the state budget may defer the projects slightly. An additional \$500,000 to the Temple Hall project would allow for a permanent generator to be provided to Temple Hall to supply power needs for all outages. Currently facilities must rent generators for the building every time the power goes out – planned and unplanned – at a significant cost to the university. A timeline will not be determined until September 2014.

Executive SWOT Summary

CNAS met nearly all of our goals for 2013-2014 and we had a very productive year. A new action plan will be adopted for the coming year. Our retreat is July 18 and at that time we will hear the list of every department's goals. We will then align them with university goals and submit our plan by September 15, 2014.

Many assessments, accomplishments and challenges are noted within the report.

Biggest Accomplishments – Hiring goals were met with only two failed searches. Transfer guides to community colleges along with visits are making an impact on enrollments. We have some workable solutions to space issues (not all of them but some). We have attempted to raise the profile of CNAS through news releases of events and accomplishments - <http://news.missouristate.edu/tag/cnas/>.

The items not completed this year but that remain on the list –

Increasing graduation rates for CNAS units - What if every department had a goal to graduate 25% of majors every year? What would that mean? What would you have to change or do different to make that happen? Questions remain unanswered in most cases but departments are working on answers. (HRA already meets this goal.)

Accreditation – Computer Science has a follow-up visit from ABET in September of 2014. The department has submitted their interim report and is preparing the resource room. They are prepared for this visit.

The college committee charged with organizing monthly seminars/workshops for faculty/staff to share teaching/learning/assessment projects did not meet this past year. We may need to rethink

leadership of this group and assign it to an associate dean.

Update college workload policy. In particular develop a plan to reward/recognize faculty work related to undergraduate/graduate research as well as internships.

Space issues are not done and we have lots and lots of work to do in the coming year!

We did not set productivity measures for centers and institutes in CNAS this year and would like to do so with a university plan developed and supported by VP of Research and Provost.

We have to complete two unsuccessful searches (biology and chemistry) along with searches in PAMS for materials science/physics faculty. In addition three department heads finish their terms in summer of 2015 (chemistry, PAMS and CSC). An internal search for the chemistry department head is already underway. Reviews of PAMS and CSC heads will occur early in the fall.

Strengths – Faculty/student research; excellence in teaching by many, many faculty; external funding (submissions are up, funding is steady); instrumentation and facilities; outstanding students; study away opportunities for students.

Weaknesses – most science teaching facilities remain dated; all centers need to work toward being totally self-funded; need for more research space in the sciences – especially if we are to increase the number of STEM graduates.

Opportunities – Interest at the federal and state level to increase the number of STEM graduates; external funding opportunities in the sciences; cooperation with JVIC; MNAS program; PSM program; all graduate programs in the college. HRA new space and renovated additional space for CNAS. HRA working on online BAS degree completion programs for community college students – agreement with St. Louis to be signed in July, 2014. Graduate programs in the college could grow significantly with additional assistantships, faculty and space.

Threats – Declining state funding has decreased the number of tenure track/tenured faculty in the college which directly conflicts with the increasing student demand and the federal/state demands to increase STEM graduates. Lack of space for growth. Lack of recurring funding for service contracts on major instrumentation.

We have a list of goals for fundraising but no specific action plan. Action plans are being developed.

CNAS Big Projects (prioritized)

#1 - HRA facility - \$4 million

#2 – Science/Public Health Facility on lot 19 - \$50 million

#3 - Renovations and namings to include the engineering spaces (\$5 million)

Detailed list in progress

#4/5 - Baker Observatory - \$2 million (have renderings)

Bull Shoals field station - \$3 million (have renderings)

#6 – Science Summer Camp program for HS students - \$2 million (program)

#7 - Faculty Awards - \$2 million (program)

#8 - Equipment Fund - \$5 million (program)

Already started with over \$20,000!!!

Endowed Professorships (10 @ \$1 million each)

Scholarships, scholarships, scholarships!!!!

Department or Advisory Board Projects

Chemistry – Speaker Series (Alan Schick and Wyman Grindstaff) - \$5000

GGP – Endow the Fagerlin-Johnson-Moeglin Field Studies Scholarship - \$25,000

Establish the Robin Melton Memorial Scholarship - \$25,000

Engineering – Name all spaces in the new building (plan in place – two named to date)

PAMS – PHYZBIZ and Baker Observatory (also on big list)

Bull Shoals Field Station – housing (also on big list)

BIO – Advisory Board is committed to raising \$20K for student scholarships and they have started.

BIO – Greenhouse addition (\$75,000-150,000)

CNAS Annual Faculty Awards - \$5000/year

CNAS Undergraduate Research Day - \$2000/year

CNAS Equipment Fund (\$5 million dollar goal, dean contributed \$5K for \$25K raised – total is \$30 K) – Want to find another person to match \$1 for every \$5 dollar donated up to some amount (preferably at least \$5K). Will use \$20 of first \$30 K for equipment now and the rest is going into an endowment – need \$5 million in the endowment!!) – Jahnke Project!

Foundation Projects

Herschend Foundation – Janice Greene (Bull Shoals Field Station) would like to approach them regarding the field station housing – needs permission and contacts.

CNAS Big Projects (other)

Science building - \$100 million (on master plan but no drawings) New building on lot 4 – 200,000 sq ft of usable space

CNAS Summary of Assessment of Student Learning Outcomes

Student Learning Outcomes for each program are posted on their website –

<http://biology.missouristate.edu/167553.htm> - undergraduate

<http://biology.missouristate.edu/167555.htm> - graduate

<http://chemistry.missouristate.edu/undergraduate/165373.htm> - undergraduate

<http://chemistry.missouristate.edu/education/165378.htm> - undergraduate (BSEd)

<http://chemistry.missouristate.edu/graduate/165379.htm> - graduate

<http://computerscience.missouristate.edu/137120.htm> - undergraduate

GGP - I could not find student learning outcomes posted on the website

<http://www.missouristate.edu/hra/31361.htm> - undergraduate

<http://math.missouristate.edu/undergraduate/Student-Learning-Outcomes.htm> -
undergraduate

<http://math.missouristate.edu/MathEd/Student-Learning-Outcomes.htm> -
undergraduate

PAMS – I could not find student learning outcomes posted on the website

Examples of “Closing the Loop”

Biology collected data on four learning outcomes in 2013. After a review of the data collected they determined that based on the data collected/presented students have achieved the desired learning outcome. A follow-up discussion raised the following questions for the coming year – in addition to viewing the success rate of students on a specific exam question the exact question asked, the most common incorrect answer and the grade distribution for the entire exam should be reported.

Chemistry reviewed their MFAT data for the past year but with only 18 data points it is hard to draw conclusions. It may be necessary for them to look at 5-10 years' worth of data at one time. Chemistry is attempting to use a rubric to assess various aspects of student learning related to undergraduate research. Their attempts to use this assessment tool has led to revisions each year so no clear conclusions regarding student learning can be made at this point – on the other hand they are working very hard to develop a useful assessment tool.

Computer Science has become much more focused regarding clearly stating learning outcomes in their syllabi and writing appropriate assessments. This summer they reviewed data from four classes – CSC 130, 131, 232 and 325. One concern was a high DFW rate for 325 in recent semesters. The faculty agreed that CSC131 and 232 should be adjusted to bridge the gap between 130 and 325. Changes to learning outcomes and syllabi will occur in spring of 2015. The department is preparing a

resource room with assessment examples for all learning outcomes in their courses for an accreditation visit in early September of 2015. This will provide more examples.

Hospitality and Restaurant Administration noted three areas of success upon review of assessment data. First, data revealed that students perform well on the assessment items tied to the public affairs learning outcomes. Second, significant improvements were made in written communication assessments. In the previous year only 71% of students achieved a 70% or higher grade on the writing assignment while this year 92.6% of students achieved a 70% or higher grade on the writing assignment. The instructor made significant pedagogical adjustments to allow for this increase (the rubric did not get easier!). Third, students met the 60% threshold on 4 of 6 areas on the exit exam that measured quantitative reasoning. Two areas of concern based on the data involve written communication and quantitative reasoning. Faculty will continue to work on these areas with students to ensure future success.

Mathematics is reviewing data related to their calculus sequence as this is the starting point for all mathematics majors. They have reviewed final exam data for MTH261 and 280 with the following assumption: comprehensive finals reflect the content learning objectives and are aligned with program student learning outcomes. The data for 2013 indicate that 52-62% of students are meeting the 80% mastery level of calculus I learning outcomes. The faculty will be meeting in the fall to determine an action plan based on this data. The faculty also reviewed MFAT results over the past five years.

I have not yet received an assessment report from PAMS or GGP. (June 30, 2014)