

CNAS 2015 Annual Report
Submitted in July 1, 2016
Tammy Jahnke, Dean

The CNAS Strategic Plan and Goals document is updated each year (June-September) but is driven by our vision, mission and shared values. The vision, mission and values are being reviewed in 2016 in lieu of changes made at the university level.

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.

CNAS - STEM Graduates

Fiscal Year		FY2011	FY2012	FY2013	FY2014	FY2015
Department	Student Level	Headcount	Headcount	Headcount	Headcount	Headcount
		Value	Value	Value	Value	Value
Biology		130	111	140	132	134
	GR	11	17	18	20	20
	UG	119	94	122	112	114
Chemistry		28	39	26	36	41
	GR	7	9	9	7	12
	UG	21	30	17	29	29
Computer Science		17	25	19	24	37
	GR	1	4	1	3	1
	UG	16	21	18	21	36
Geography, Geology, & Planning		69	97	92	79	83
	GR	18	15	15	19	19
	UG	51	82	77	60	64
Hospitality & Restaurant Administration	UG	67	55	65	58	92
Mathematics		34	38	42	39	41
	GR	8	8	10	8	13
	UG	26	30	32	31	28
Physics, Astronomy, & Materials Science		8	13	17	20	18
	GR	3	5	5	11	7
	UG	5	8	12	9	11

Number Tenured/tenure-track Faculty BY CNAS DEPARTMENT

2015	Tenured/tenure-track Faculty	Instructors/Lab supervisors
BIO	15.5 FTE 14.5 FT + Head +AD	2/5
CHM	15 FTE 14 FT + Head + AD	3/
CSC	5.5 FTE 5 FT + Head	1/
GGP	18.5 FTE 18 FT + Head	4/
HRA	4.5 FTE 4 + Head	2/0.5
MTH	23 FTE 22 + Head + AD	12/
PAMS	11.5 FTE 11 + Head	1/1
EGR	4.5 FTE (2 FTE MSU, 2 MO S&T) 5.5 + Director (S&T)	/2 (MSU)

New hires (to start in 2016) in biology will increase FTE to 17, in computer science will increase FTE to 6, and PAMS increases FTE to 12.5.

CNAS - # of Majors

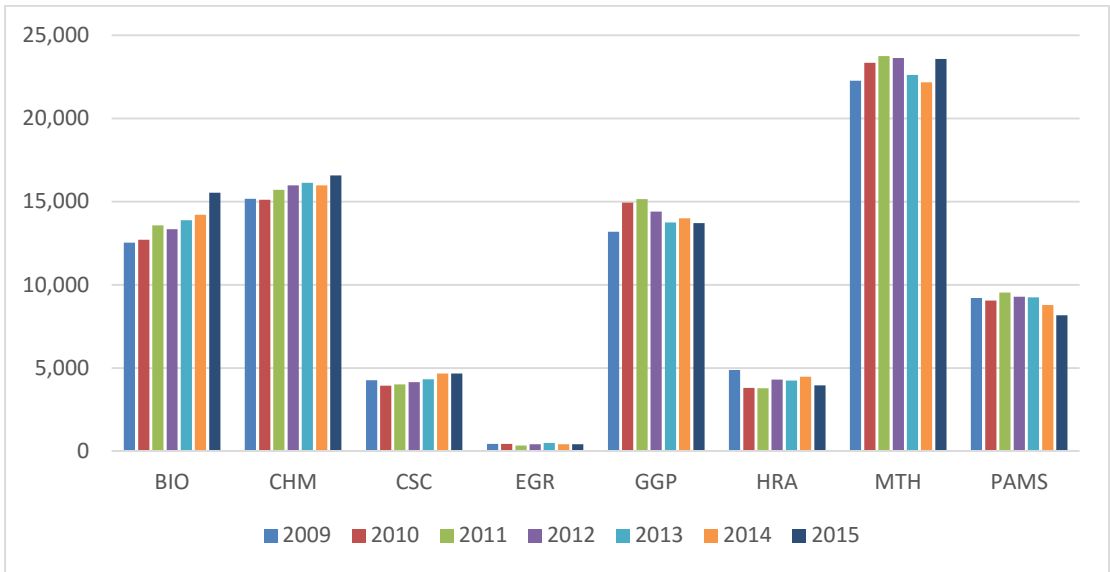
Academic Period		Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
Department	Student Level	Headcount	Headcount	Headcount	Headcount	Headcount
		Value	Value	Value	Value	Value
Biology		662	724	727	720	696
	GR	60	48	45	51	43
	UG	602	676	682	669	653
Chemistry		224	213	256	232	231
	GR	25	17	23	22	24
	UG	199	196	233	210	207
Computer Science		179	207	256	298	310
	GR	7	6	3	3	5
	UG	172	201	253	295	305
Geography, Geology, & Planning		274	258	249	243	248
	GR	42	47	40	25	33
	UG	232	211	209	218	215
Hospitality & Restaurant Administration	UG	253	264	300	281	246
Mathematics		196	199	200	206	216
	GR	26	25	34	37	38
	UG	170	174	166	169	178
Natural & App Sci/Engineering	UG	163	168	190	228	210
Physics, Astronomy, & Materials Science		104	102	89	92	99
	GR	13	19	20	17	18
	UG	91	83	69	75	81

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

Although number of majors and number of graduates are important, it is also important to note credit hour production. The new general education program has definitely affecting SCH production in CNAS but it looks like we are back in a growth mode.

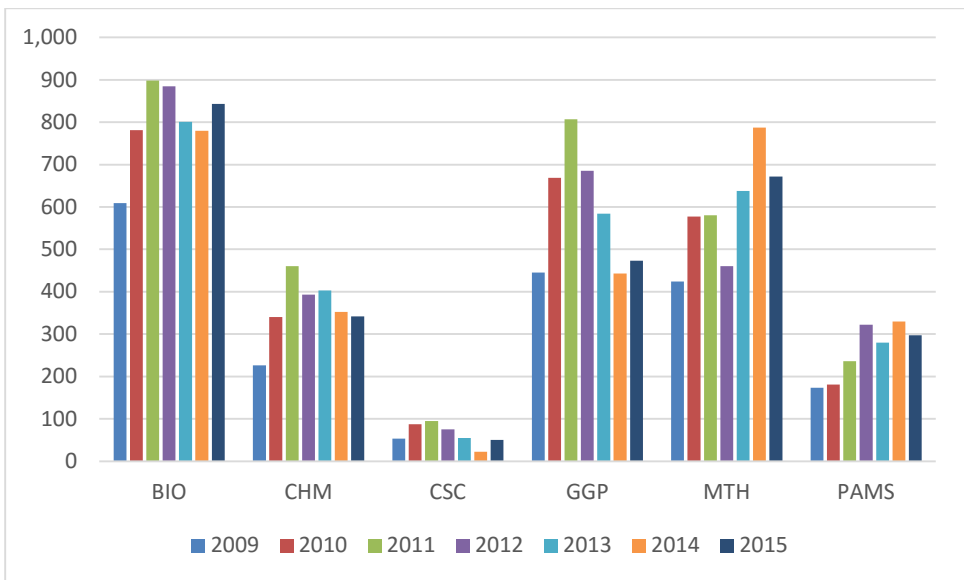
Calendar Year	2009	2010	2011	2012	2013	2014	2015
College	Credit Hours	Credit Hours	Credit Hours	Credit Hours	Credit Hours	Credit Hours	Credit Hours
	Value	Value	Value	Value	Value	Value	Value
Agriculture, School of	0	0	5,071	10,269	11,712	12,991	14,156
Arts & Letters	92,467	94,174	94,767	94,568	95,427	94,977	97,399
Business	100,625	105,469	102,843	99,138	100,350	100,030	106,171
Education	36,162	35,903	34,558	34,186	34,350	35,250	37,001
Health & Human Services	72,841	74,691	78,038	80,602	84,133	86,817	87,506
Humanities & Public Affairs	74,009	75,124	77,050	79,140	78,205	79,473	82,330
Library Science, Department of	258	241	292	272	253	237	118
Natural & Applied Sciences	97,158	97,422	92,866	88,306	87,441	87,435	89,271
Undergraduate College/Provost	3,450	6,946	7,028	7,041	7,800	8,046	9,175
Total by COLUMNS	477,212	489,970	492,513	493,522	499,671	505,256	523,127

SCH production for Undergraduate Students by department (CY)



Those departments with steady increases of credit hour production include biology and chemistry. Computer science has seen increases but 2015 is nearly the same as 2014.

SCH production for Graduate Students by department (CY)



SCH at the graduate level tends to bounce depending on how many students are funded by external sources. CNAS has attempted to put more resources into TA lines over the last two years.

Scholarship Dollars awarded to CNAS students in 2015! This is over \$20,000 more than last year.

Committee Name	Scholarships Awarded	Total Award Amount
Biology	15	\$ 6,750.00
Chemistry	20	\$ 20,200.00
CNAS- Bio/ Chem Joint	2	\$ 2,000.00
College of Natural and Applied Science	18	\$ 23,200.00
Computer Science	21	\$ 9,400.00
Geography, Geology, and Planning	15	\$ 11,950.00
Mathematics	30	\$ 29,470.00
Hospitality and Restaurant Administration	17	\$ 22,800.00
Physics, Astronomy, and Materials Science	15	\$ 11,500.00
TOTALS:	150	\$ 137,270.00

** The above spreadsheet does not reflect the scholarships that we give to students for study away trips. Last year Study Away reported \$9600 in scholarships to nine students. These awards were funded by contributions from CNAS and the president's office. GGP has donor funded scholarships specifically for field trips to include study away but the MSU Foundation is not able to separate those scholarships at this time.

Student Scholarship Winners – Chemistry (April), Mathematics (September), and HRA (September) hold annual picnics/banquets/receptions to recognize scholarship recipients and donors. CNAS held an event for all other scholarship recipients in fall of 2015. This year Biology will add a picnic in September. The next all-college scholarship reception will be held on October 13, 2016 during Homecoming Week. This will recognize scholarship recipients from CNAS, CSC, PAMS and GGP.

Summary of Accomplishments

Academics/enrollment /access

- ✓ Graduate Programs
 - Funding for assistantships was increased in CNAS to support growth of graduate programs.
 - Continue to develop tracks for MNAS and PSM– online, blended, face-to-face – brochure published and will be updated annually. There has been little progress in this area in 2015-2016. It will be a focus in 2016-2017.
 - Continued attention to retention and timely graduation of all current graduate students has resulted in outstanding graduation rates for all CNAS MS programs.
- ✓ Undergraduate Program
 - Computer science added a new program track at the undergraduate level in 2015. It is in the catalog and students will be able to declare the new track in fall of 2016.
 - Physics has graduated an average of 10 BS students for each of the last four years. That is an outstanding accomplishment and I expect that it will continue. Although the HRA number of majors has not increased significantly over the last four years,

the number of graduates skyrocketed this past year from 58 to 92.

- CNAS continues to focus on recruitment at Missouri community colleges. We continue to update transfer guides to OTC, West Plains, Crowder and St. Charles CC. HRA has reached out to a number of other community colleges to increase enrollment in the BAS degree program.
- Course Offering Inventory – online/blended/iCourse
 - BIO (3 online, 3 blended)
 - CHM (1 online, 4 blended)
 - CSC (none)
 - HRA (8 online, 7 blended)
 - GGP (1 online, 2 blended)
 - MTH (4 online, 1 blended, 1 iCourse)
 - PAMS (1 iCourse)
- ✓ Assessment of Student Learning – See full report at the end. The departments did significant work in 2015-2016 regarding assessment plans. All plans were reviewed and updated to reflect curricular changes over the past four years.

Program Review Update –

- Biology submitted their action plan in February of 2016.
- GGP and PAMS have self-studies submitted. External reviewers will be invited in the fall.
- Planning will not seek re-accreditation but will teach out current students. (Degree program will remain.)
- HRA Accreditation Self-Study is due in 2017 with a site visit in 2017-2018.
- MTH and CHM will begin their self-studies in fall of 2016 for completion in spring of 2017. External reviewers will be here in Fall of 2017.
- Computer Science will submit new self-study in June of 2018 for a site visit in 2018-2019. They have a detailed plan but it is not clear yet whether it has been fully implemented.

Public Affairs

- ✓ Study Away - Faculty led short term study away trips in 2015-2016

August 2015	San Francisco GGP	Kevin Evans and Dimitri Ioannides
May 2016	Costa Rica BIO	Ana Estrella (West Plains)
May/June 2016	Russia TSSR GRY	Paul Rollinson
July/August 2016	Snake River BIO	Dan Beckman

Short Term Study Away –San Francisco, Costa Rica, Flagstaff, Snake River, Russia

2014-2015 25 CNAS students participated out of 514 total at university

2015-2016 50 CNAS students participated out of ? (number not available) total at university

We take students on a number of domestic trips as well. These trips are not logged by study away but are recorded as high impact experiences for students.

- ✓ 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)*
- *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 –science lectures in fall 2015 and 2016*
- *CNAS Public Lecture Series*
- *CNAS faculty and departments stay connected with the Discovery Center, Dickerson Park Zoo and Department of Conservation and other units that hire our students or supervise service learning or volunteer activities for current students.*
- *HRA hosted the Culinary Educators’ Workshop at MSU.*
- *HRA Faculty are engaged with all Missouri ProStart Schools and judge at the ProStart competitions for Missouri 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 reviewed the credentials for all dual credit teachers and we are working with them to ensure their eligibility to teach dual credit for Missouri State.
- ✓ 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.
- ✓ Patrick Sullivan (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.

Continue to support sustainability

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

Diversity Activities –

- ✓ The CNAS Diversity and Inclusion Committee continues to meet and schedule events. This year they submitted posters which were framed and posted throughout the college. These will be rotated throughout the CNAS buildings on campus. In addition they are posted on a new CNAS Diversity website. The committee also organized the

fourth annual college picnic.

- ✓ Biology offered two courses for a group of Chinese students from Qingdao University as part of a biotechnology program. This first occurred in 2013. 2015 is the third year!
- ✓ All departments included diverse speakers in their seminar series this past year.

Engaged Inquiry

- ✓ It is clear from the data (grants submitted/received and publications) that CNAS has the strongest culture of research/scholarly activity at Missouri State University.
- ✓ 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 April of 2016 CNAS and centers submitted over 143 proposals. These proposals were submitted by 47 different CNAS faculty members! Because the grant activity is recorded on a fiscal year basis and this report is for a calendar – the numbers do not always match. We are close to bringing in nearly \$3 million for the current year!

Grant and contract activity for FY 2016, through April:

Missouri State University FY 16 Grant/Contract Activity by Unit

Unit	# Applying		# Awarded		Credit Share*			Actual**		
					Grants / Contracts		Award	Grants / Contracts		Award
	Staff	Faculty	Staff	Faculty	Submit	Awards	\$	Submit	Awards	\$
Admin & Info Services	0	0	0	0	0	0	\$ -	0	0	\$ -
College of Arts & Letters	3	3	3	1	21	14	\$ 233,973	12	9	\$ 233,973
Center for Dispute Resolution	0	1	0	1	4	4	\$ 80,155	4	4	\$ 80,155
College of Business	0	2	0	2	5	5	\$ 2,630,196	5	5	\$ 2,630,196
Center for Project Innovation & Management	0	1	0	1	3	1	\$ 27,000	3	1	\$ 27,000
College of Education	4	5	4	6	20	22	\$ 1,137,464	19	20	\$ 1,210,319
Institute for Play Therapy	0	0	0	0	0	0	\$ -	0	0	\$ -
Institute for School Improvement	0	0	0	0	0	0	\$ -	0	0	\$ -
Southwest Regional Professional Development Center	1	1	1	1	6	6	\$ 1,366,300	5	5	\$ 1,260,803
College of Health & Human Services	5	21	5	14	43	33	\$ 1,587,315	33	27	\$ 1,562,360
Center for Research & Service	0	0	0	0	0	0	\$ -	0	0	\$ -
College of Humanities & Public Affairs	0	7	0	9	7	9	\$ 874,733	5	7	\$ 874,733
Center for Archaeological Research	0	1	2	1	3	5	\$ 54,347	3	4	\$ 54,347
Center for Community Engagement	0	1	0	0	1	0	\$ -	1	0	\$ -
Center for Economic Research	0	1	0	1	1	1	\$ 7,533	1	1	\$ 7,533
Center for Social Science & Public Policy Research	0	1	0	1	2	2	\$ 2,650	2	2	\$ 2,650
College of Natural & Applied Sciences	3	44	1	23	96	37	\$ 1,762,792	65	27	\$ 1,776,060
Bull Shoals Field Station	1	1	1	1	4	4	\$ 37,885	4	4	\$ 37,885
Center for Resource Planning & Management	3	1	3	1	19	14	\$ 513,677	11	8	\$ 513,677
Ozark Environmental Water Research Institute	1	1	1	1	13	14	\$ 464,952	9	10	\$ 485,952
Diversity & Inclusion	0	0	0	0	0	0	\$ -	0	0	\$ -
Graduate College	0	0	0	0	0	0	\$ -	0	0	\$ -
Library	2	2	0	0	5	0	\$ -	3	0	\$ -
President	3	0	0	0	3	1	\$ 66,084	2	1	\$ 66,084
Provost	2	1	3	1	7	6	\$ 30,079	5	6	\$ 30,079
Ozarks Public Health Institute	0	1	0	1	5	6	\$ 224,986	5	6	\$ 224,986
Research & Economic Development	5	0	4	0	26	21	\$ 1,510,340	22	19	\$ 1,510,340
Center for Applied Science & Engineering	5	0	4	0	15	7	\$ 978,999	10	5	\$ 978,999
Center for Biomedical & Life Sciences	0	1	0	1	11	7	\$ 80,374	11	7	\$ 80,374
International Leadership & Training Center	1	0	1	0	4	4	\$ 352,300	4	4	\$ 352,300
Jordan Valley Innovation Center	1	0	1	0	7	7	\$ 668,815	7	7	\$ 668,815
Small Business Development & Technology Center	1	0	1	0	6	7	\$ 232,236	6	7	\$ 232,236
Southwest Missouri Area Health Education Center	1	0	1	0	5	4	\$ 144,494	5	4	\$ 144,494
School of Agriculture	3	11	2	7	25	16	\$ 693,851	15	12	\$ 717,180
Center for Grapevine Biotechnology	0	1	0	1	3	2	\$ 48,084	3	2	\$ 48,084
Mid-America Viticulture & Ecology Center	1	1	1	0	5	4	\$ 4,298,364	5	4	\$ 4,298,364
Student Affairs	1	0	2	0	1	4	\$ 1,563,378	1	4	\$ 1,563,378
West Plains	4	5	4	2	13	9	\$ 524,591	11	9	\$ 524,591
TOTAL	51	115	45	77	389	276	\$ 22,197,948	297	231	\$ 22,197,948

* Credit Share - divides the proposals/awards between the PI's, therefore proposals/awards may be reflected in the totals more than once.

** Actual - proposals/awards will only be shown in the originating unit.

CNAS Interdisciplinary Research

The college has attempted over the last 4-5 years to bring together faculty from all disciplines to consider interdisciplinary work. To date we have focused on nanotechnology and computational science.

The nanotechnology group has received significant start-up funds in order to publish papers and seek external funding. At this point several presentations have been made and many grants have been submitted. One proposal was funded that included CNAS faculty and CASE personnel. Presentations and publications continue.

A certificate program in computational science is active and available through PAMS. Faculty have been meeting for the past 18 months to share research projects. A summer 2016 seminar series is bringing everyone back together.

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 \$11,200 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 over \$866,772.68 (one-time dollars) for start-up funds for tenure track faculty that is currently unspent. Of that 454,772.68 is available to the faculty as of June 21, 2016. Another \$412,000 will be allocated after July 1. In addition, summer fellowships for newly hired tenure-track faculty are funded with one-time funds in the college. The start-up funds are typically spent within the first three years of a faculty member's time on campus. By year four many have external funding.

Peer Reviewed publications/books/chapters/etc. from the past six years. CNAS had 93 peer reviewed journal articles and books/chapters. In addition, there were many, many, many presentations by students and faculty in 2015. It is abundantly clear that CNAS faculty are a major contributor to the total number of peer reviewed publications for Missouri State University.

Year	2010	2011	2012	2013	2014	2015
College	#Contributions Value	#Contributions Value	#Contributions Value	#Contributions Value	#Contributions Value	#Contributions Value
Agriculture, School of	7	12	10	2	5	7
Arts & Letters	86	76	60	108	115	81
Business	79	87	56	49	67	58
Education	31	27	27	38	20	18
Health & Human Services	48	56	52	50	49	48
Humanities & Public Affairs	86	73	105	69	87	64
Library Science, Dept of	1	3	2	7	3	2

Year	2010	2011	2012	2013	2014	2015
Department	#Contributions	#Contributions	#Contributions	#Contributions	#Contributions	#Contributions
	Value	Value	Value	Value	Value	Value
	97	107	74	104	107	93
BIO	26	23	19	18	33	24
CHM	21	19	16	19	10	15
CSC	2	0	0	3	1	1
EGR	0	3	0	1	0	1
GGP	16	17	12	23	22	20
HRA	5	2	2	2	2	4
MTH	12	14	8	15	5	8
PAMS	15	29	17	23	24	20
Total by COLUMNS	97	107	74	104	107	93

✓ Graduate Student Support in CNAS

- In reviewing the data over the past five years we have increased the state-funded assistantships from 70 to 90 in CNAS! This increase is due to reallocations within CNAS and additions from the provost's office over the last five years. We have also increased the number of grant/contract funded assistantships from an average of 8-9 to 17 this year.

2015-2016	TOTAL # of GA's with assistantship	State Funded	Grant Funded
MNAS	5	5	0
Biology	29	28	1
Chemistry	16	16	
Computer Science	0	0	0
Geography, Geology & Planning	26	14	12
Hospitality & Restaurant Administration	0	0	0
Mathematics	13	13	0
Physics, Astronomy & Materials Science	17	13	4
TOTAL AWARDED	106	89	17

- ✓ CNAS Undergraduate Research Day – April 21, 2016 - 64 undergraduate research posters. This was the seventh annual event!

AY2015/2016 DATA – This data has changed little since we started collecting it in 2011. On the other hand we have seen an increase in the number of undergraduate research presentations as noted above. We will work to see if we can collect more useful information from Digital Measures on presentations by students.

Dept	UG internship headcount	UG internship SCH	UG research headcount	UG 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
AY 2015-16	20	51	23	55	1	6	69	230
CHM Courses	397	397	399/499	399/499	796	796	798/799	798/799
AY 2015-16	2	4	38	65	1	1	38	108
CSC Courses	399	399	596	596	796	796	798/799	798/799
AY 2015-16	30	87	14	33	4	7	2	8
GGP Courses	GLG399 GRY399 PLN599	GLG399 GRY399 PLN599	GLG499 GRY 599 PLN596	GLG499 GRY599 PLN596	GLG796 PLN699	GLG796 PLN699	GEO780 GLG798 & 799 PLN696 GRY799	GEO780 GLG798 & 799 PLN696 GRY799
AY 2015-16	1 11 6	3 25 18	11 0 0	28 0 0	0 0 0	0 0 0	0 5 0 6	0 24 0 25
HRA Courses	499	499						
AY 2015-16	64	384						
MTH Courses			497	497	796	796	798/799	798/799
AY 2015-16			38	38	0	0	27	90
PAMS Courses			386/486	386/486	796	796	MAT/PHY799	MAT/PHY799
AY 2015-16			19	19	0	0	22	79

Partners for Progress

- ✓ CNAS continues to work on JVIC collaborations –Kartik Ghosh serves as liaison.
 - Fichter, Sakidja and Stepanova continue to have research space at JVIC.
 - Durham continues to lead CBLS as part of JVIC.
 - Collaborations with JVIC are not easy but we will keep trying.
- ✓ Continue to work with community colleges
- ✓ Continue collaborations with K-12 schools and science/math competitions
- ✓ Continue collaborations with National Park Service and others
- ✓ The HRA funded project with USA Funds and the Hawthorne Foundation has been very successful in developing partners even though we are only in the second year of a five year project.
- ✓ MSU remains the host institution in Missouri for Project WET, WILD and Learning Tree.

Valuing and Supporting People

CNAS adopted a college-wide mentoring plan in 2015 - http://science.missouristate.edu/assets/science/CNAS_Faculty_Mentoring_plan.pdf All tenure-track faculty have a mentor – some have two.

2016 Promotions

- Promoted to Distinguished Professor
 - Bob Pavlowsky – GGP
- Promoted to Full Professor
 - Anita Liu – CSC
 - Kyoungtae Kim - BIO
- Promoted to Associate Professor with tenure
 - Adam Harbaugh – MTH
 - Matt Pierson – EGR (GGP)
- Promoted to Senior Instructor
 - Jennifer Pursley – MTH
 - Becky Baker – PAMS

University Award Winners - 2016

Missouri State University Foundation Awards for Research

Paul Durham, Biology

Kanghui Guo, Mathematics

Missouri State University Foundation Awards for Teaching

Kyoungtae Kim, Biology

Graduate College Awards

Outstanding Teaching Assistant: Adedamola Opalade, Chemistry

Outstanding Thesis Advisor: Janice Greene, Biology

Distinguished Thesis: Hyouen McDermott, Biology

Certified Distance Educator Award

Patti Blanton, Mathematics

Jokima Hiller, Hospitality and Restaurant Administration

Jennifer Pursley, Mathematics

Kimberly Van Ornum, Mathematics

✓ 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 2016 award winners based on their 2015 performance.

- **Atwood Research and Teaching Award**
 - Nick Gerasimchuk, Chemistry
- **CNAS Excellence in Teaching Award Winners**
 - Brian High, Chemistry
 - Kyoungtae Kim, Biology

- Day Ligon, Biology
- Judy Meyer, Geography, Geology and Planning
- Razib Iqbal, Computer Science
- **CNAS Excellence in Service Award Winners**
 - Melanie Grand, Hospitality & Restaurant Administration
 - Janice Greene, Biology
 - Bob Pavlowsky, Geography, Geology and Planning
 - Lisa Reece, Chemistry
 - Kathy Hughes, Biology
- **CNAS Excellence in Research Award Winners**
 - Paul Durham, Biology
 - Chris Barnhart, Biology
 - Gary Michelfelder, Geography, Geology and Planning
- **Faculty/Staff Excellence Awards—Student Nominated, Student Selected**
 - Jorge Rebaza, Mathematics
 - Razib Iqbal, Computer Science
- **CNAS Excellence Awards – Staff**
 - Martha Templeton, Administrative Assistant, MTH
 - Angela Plank, Laboratory Supervisor, BIO

NEW CNAS Faculty/Staff

2016 Matt McKay, GGP - PhD West Virginia University (2015)

2016 Tony Clark, CSC - PhD Michigan State University (2016)

2016 Debra Finn, BIO - PhD Colorado State University (2016) will be joining us in January 2017.

2016 Tayo Deborah Obafemi-Ajayi, ELEC EGR - PhD Illinois Institute of Technology (2010)

2016 LaToya Kissoon-Charles, BIO - PhD North Dakota State University (2012)

2016 Evan Frodermann, PAMS - PhD The Ohio State University (2008)

Staff hired during the 2015-2016 academic year

Jason Ray, Planner

David Szepatowski, Administrative Assistant II

Rachel Rigby, Academic Administrative Assistant III

Joni Durden, Academic Administrative Assistant III

Marla Fritz, Academic Administrative Assistant I

Sherry Jones, Academic Administrative Assistant II

Matthew Pulliam, EGR Shop & Lab Supervisor

Responsible Stewardship

Fiscal_Year	2011			2012			2013		
Department	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
	Value	Value	Value	Value	Value	Value	Value	Value	Value
BIO	168	204	82.35	163	199	81.91	177	199	88.94
CHM	143	228	62.72	151	222	68.02	159	222	71.62
CSC	225	271	83.03	232	278	83.45	216	278	77.70
GGP	274	348	161.95	296	394	155.74	315	394	171.66
HRA	213	200	106.50	216	195	110.77	201	195	103.08
MTH	136	145	93.79	136	143	95.10	152	143	106.29
PAMS	202	240	84.17	206	252	81.75	228	252	90.48

✓ Dean and heads will allocate resources appropriately and college budget committee will continue to meet regularly. Unfortunately the Delaware data is always 2-3 years behind so it misses significant increases in enrollment over the past two years in CSC and BIO. It also does not take into account the additional hires made recently for both departments. The most significant take-away from this chart is that we run an extremely efficient operation.

✓ Although the calculations are clear on the chart MSU SCH COST/DE AVG SCH COST to get the AVG value in the third column each year. It appears that GGP is not calculated correctly. The 2011 number should be 78.74 (not 161.95), the 2012 number should be 75.12 (not 155.74), and 2013 should be 79.94 (not 171.66). We will review the GGP data with institutional research to get this figured out.

✓ Space review and reallocation

HRA was successfully moved into Pummill Hall. Temple Hall and Plaster Sports Complex – six new teaching labs and other renovations occurred over the summer of 2014. This was a huge boost to STEM!!! It solved teaching lab issues but did not help with research lab space.

PAMS, GGP, BIO and CHM continue to have a need for research space.

MTH and Computer Science have needs for renovated classrooms in Cheek Hall to support new teaching strategies and program growth in Computer Science. CSC specifically needs a 50 seat computer lab and small research spaces as it submits a new graduate program for approval in 2016.

In an attempt to find under-utilized space an analysis was conducted in early 2016. Action plans were developed and in the summer of 2016 many spaces are being cleared out and reallocations will be completed by December of 2016. In addition several items will be stored off-campus to help to keep hallways and closets available for materials needed on a weekly basis.

- ✓ The college distributed a newsletter in May of 2016 for the first time in approximately 5 years. The distribution was via email and the second edition will go out in November of 2016.
- ✓ The college faculty worked with the library to review all journal holdings for CNAS. The library is still working out details of whether any changes can be made at this time.

Executive SWOT Summary

CNAS met nearly all of our goals for the year. A new action plan is developed each year. A draft is currently developed and will be finalized in September.

Goals that we continue to work on -

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.

Although the Bear Claw is useful to some first year students it is not at all useful to STEM students beyond their first course. CNAS is forming study groups to aid these students. 30 study groups were active in the spring semester of 2016. This may lead to a request for reallocation of resources for these study groups if they continue to be popular and successful.

Several departments now have certificate programs. An inventory with enrollment and completion data will be prepared this year.

Strengths – Faculty/student research; excellence in teaching by many, many faculty; external funding (submissions are up, funding is steady); instrumentation and facilities; and outstanding students. Teaching facilities continue to improve.

Weaknesses – A few 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; MNAS program; PSM program; all graduate programs in the college. 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.

Action Plan for 2016-2017 will be available in September

CNAS list of goals for fundraising -

Prioritized CNAS Big Projects – Contact the dean if you have questions about any project.

#1 – Science/Public Health Facility on lot 19 - \$100 million

#2 - Renovations and namings (\$5 million)

Cheek Hall, Kings Street Annex, Plaster Center for Free Enterprise, Temple Hall, Kemper Hall, Pummill Hall

#3/4 - Baker Observatory - \$5 million

Bull Shoals field station - \$5 million

#5 – Greenhouse addition to Temple Hall - \$1,000, 000

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

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

Already started with over \$30,000!!!

#8 - Endowed Professorships (10 @ \$1 million each)

#9 - Scholarships, scholarships, scholarships!!!!

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

Specific Projects by Department –

Chemistry – Speaker Series - \$5000

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

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

PAMS – PHYZBIZ and Baker Observatory (see above)

Bull Shoals Field Station – housing (see above)

BIO—Seeking funding for expansion of greenhouse; Advisory Board is committed to raising 20K for undergraduate research scholarships

CNAS Annual Faculty Awards - \$5000/year

CNAS Undergraduate Research Day - \$2000/year

CNAS Scholarship Funds for BSED students (expenses are \$650-750 with most expenses coming in the junior/senior years). Goal is to fund \$250/year for juniors and seniors. CNAS averages 60 students/year who are junior/senior BSED majors. Fully funded this would cost \$15,000/year. Even if we could start with a \$100/year scholarship it would be awesome.

CNAS Equipment Fund (\$5-million-dollar goal, dean contributed \$5K for \$25K raised – total is \$30 K) – Mike Minor (CHM alumnus) is matching \$1 for every \$5 dollar donated up to \$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!!)

CNAS Summary of Assessment Update –

All units were asked to update their assessment plans in 2016 to ensure that their curricular maps were current and their learning outcomes were still appropriate. The first four submitted were BIO, HRA, GGP and CSC. These plans were also submitted to the Director of Assessment and Assessment Council for feedback and recommendations which were communicated to each department. The final three updated plans will be submitted to the Director of Assessment for review in July of 2016.

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

biology.missouristate.edu/undergraduate/Learning-Outcomes.htm - undergraduate

biology.missouristate.edu/biologyEd/careers.htm - undergraduate Ed

biology.missouristate.edu/graduate/Learning-Outcomes.htm - graduate

chemistry.missouristate.edu/undergraduate/StudentLearningOutcomes.htm -
undergraduate

chemistry.missouristate.edu/education/ - undergraduate Ed

chemistry.missouristate.edu/graduate/StudentLearningOutcomes.htm - graduate

chemistry.missouristate.edu/GraduateEducation/ – graduate Ed

computerscience.missouristate.edu/undergraduate/Learning_Outcomes.htm -
undergraduate

geosciences.missouristate.edu/Geography/Learning_Outcomes.htm - undergraduate

geosciences.missouristate.edu/Geology/Learning_Outcomes.htm - undergraduate

geosciences.missouristate.edu/GeospatialSciences/Learning_Outcomes.htm -
undergraduate

geosciences.missouristate.edu/Planning/Learning_Outcomes.htm - undergraduate

geosciences.missouristate.edu/GeospatialSciencesGraduate/Learning_Outcomes.htm
- graduate

hospitality.missouristate.edu/bs/learning_outcomes.htm - undergraduate BS

hospitality.missouristate.edu/bas/Learning_Outcomes.htm - undergraduate BAS

math.missouristate.edu/undergraduate/Student-Learning-Outcomes.htm -
undergraduate

math.missouristate.edu/MathEd/Student-Learning-Outcomes.htm - undergraduate Ed

math.missouristate.edu/graduate/Learning_Outcomes.htm - graduate

math.missouristate.edu/GraduateMathEd/Learning-Outcomes.htm - graduate Ed

physics.missouristate.edu/undergraduate/Learning_Outcomes.htm - undergraduate

physics.missouristate.edu/PhysicsEd/CareerOutcomes.htm - undergraduate Ed

physics.missouristate.edu/MaterialsScience/Learning_Outcomes.htm - graduate

physics.missouristate.edu/GraduatePhysicsEd/CareersOutcomes.htm - graduate Ed

Departmental annual reports from 2015 included some assessment data and analysis. This reports are available upon request.

Biology – The department reviewed specific data on three SLO's in 2015 – 1) apply methods of scientific inquiry in biology; 2) describe how human activities affect the living world and the physical environment; and 3) Describe the flow of energy and matter within and among organisms. For the first SLO the department looked at data from three courses: 361, 369 and 511 and determined that students have achieved this learning outcome to their expectations. For the second SLO the department looked at data from three courses: 339, 508 and 562 and determined that students have achieved this learning outcome to their expectations. For the third SLO the department looked at data from four courses: 121, 320, 310, and 562 and determined that students have achieved this learning outcome to their expectations. Biology also did a survey of graduate faculty to determine which graduate level SLO's are being achieved and which need more work. The lowest ratings were with the following: critically evaluate scientific publications and write in the style of a scientific journal. The departmental faculty will be developing an action plan to increase ratings in these two areas.

Chemistry – The department reviewed MFAT exam data for graduates. In addition, the department reviews undergraduate research reports using a rubric that addresses three learning outcomes. The undergraduate research reports show that students are meeting all SLO expectations documented. Finally, a safety SLO is assessed with a checklist and quiz given to all students. The department has determined that additional training and new quiz questions related to safety should be implemented in fall of 2016.

Computer Science – The department has collected data from fall of 2015 and spring of 2016 but has done no analysis yet. It is my understanding that the analysis, action plan and report will be submitted after their August retreat.

GGP – The faculty teaching GRY100 use a pre-test/post-test to assess student learning in the course. Scores typically increase by 10-20 points for students each semester. Students of GLG358 were given a survey to determine if they thought they had met SLO's. Evaluation of these results led to a modification of course assignments and the development of new course materials. Geography and geology programs give an exit exam each year. The data from the exams were reviewed with the faculty. The department plans to perform a deeper analysis of the results of these exams in the near future.

HRA – All SLO's were measured by at least one direct measure in 2015. Primarily students are meeting or exceeding expectations. Students did not meet expectations on SLO 7 – “students will demonstrate quantitative reasoning and critical thinking skills needed to make

sound business decisions”. A deeper dive into the HRA 390 final exam showed better results than the exit exam.

MTH – The math faculty focused on MTH261 (Calculus I) as they reviewed assessment data. The faculty compared final exam grades to final course grades for the students this past year. Conversations are taking place now to develop common learning outcomes for all sections of MTH261 and class sizes have decreased in recent semesters. The department will continue to review data in future semesters. The faculty also reviewed MTH315 and its effectiveness in preparing students for MTH532. MTH315 was found to be better preparation than MTH503. The faculty also reviewed MFAT results for all graduates.

PAMS – PAMS submitted no assessment report as of July 1.