

CNAS Action Plan for 2023-2024

Long-term goal – CNAS will be the most research active college at Missouri State with the greatest number of students involved in research, the most external funding for research, and highest impact of peer-reviewed research publications and CNAS will also be the college with the most comprehensive use of inclusive teaching practices and active learning strategies to allow all students to succeed in STEM. (There is no need to “weed students out”. There is a great need to change our practices so that every student has the opportunity to succeed.)

Strategic Enrollment Management

- ❖ Continue outreach to recruit students to MSU
- ❖ Continue to focus on DFW rates and provide professional development on inclusive teaching practices
- ❖ Pathways – support the pathways work for Complete College America project
- ❖ Continue outreach work with dual enrollment in science and mathematics
- ❖ Continuing working on marketing plan with MarComm

Infrastructure and Funding

- ❖ Continue work on Blunt, Cheek and Kemper Hall projects
- ❖ Monitor use of Strong 001 – active learning classroom and plan for a second room
- ❖ Seek external grant funding for research, teaching or any of the goals listed.
- ❖ Room naming opportunities to raise more \$\$ to support students
- ❖ Develop prioritized want/needs list for foundation fundraising support

Evolving Academic Directions

- ❖ Implement reorganization plan phase I
- ❖ Determine if there should be a phase II within CNAS
- ❖ Analyze FTE data and determine a strategic hiring plan
- ❖ BS in Data Science to Faculty Senate by January 2024
- ❖ Develop a long-term plan to support STEM secondary education recruitment, retention, faculty, etc.
- ❖ Support departmental seminar programs that not only focus on research but also careers and inclusive excellence
- ❖ Support conversion of Blackboard Career site to new LMS, continue STEM Career Expo
- ❖ Support all departments with contacts to local industry for internships and careers
- ❖ Focus on overall goal noted above related to research and teaching.

Inclusive Excellence

- ❖ Support the university’s public affairs mission and welcome all students, faculty and staff
- ❖ Offer professional development opportunities for faculty and staff to help all of us be more inclusive in our work.
- ❖ Continue grant writing for specific projects

Global Engagement

- ❖ Achieve CNAS/International Services action plan developed July 2023 to recruit and retain international students.
- ❖ Where appropriate departments will work with international institutions on a variety of 3+1 and other degree programs

Community Partnerships

- ❖ Continue successful and productive partnerships

Biology Department Action Plan 2023-2024

Strategic Enrollment Management and Retention

- Realigning the overlapping courses between Biology and Biomedical Sciences
- Master advisors to renew their master advisor certification (+ New faculty to attend Master Advisor training)
- Different BIO121 instructors from semester to semester---Increasing consistency in teaching to help attract and retain more students to BIO major.
- Strong focus on student research and internships-find potential resources for summer undergraduate research
- Genetics (BIO236)-continue to implement technology-enabled study groups (and documentation for retention)
- Continue active engagement in CNAS/MSU recruitment events
- Develop strategies to promote social media marketing
- Develop strategies to increase faculty retention
- New recruitment-related projects:
 - Send post-cards to visiting students
 - Up-to-date website
 - Develop short videos
 - Highlight new addition to Blunt Hall to potential students during recruitment activities: Design and distribute handout
- Decrease DFW rates with the following strategies
 - a. Be proactive about referring students to the Academic Care Team and Bear CLAW
 - b. Personally contact students who are having problems
 - c. Use Blackboard to send reminders to students about upcoming assignments. In the “gradebook” there is a button that allows you to automatically send reminders to students who haven’t yet submitted upcoming assignments.
 - d. Allow students to re-take tests, sometimes with different expectations”
 - a. Students must explain why they missed questions on the first test
 - b. Students must turn in all assignments that were due before the re-take is allowed
 - e. Use many small quizzes instead of fewer large exams
 - f. Use “mini-quizzes” (with very easy content) to ensure that students come to class
 - g. Add “recitations” to courses; use peer leaders to guide the recitations
 - h. Synchronize lectures with other material (e.g., study guides)
 - i. Have personal meetings with students in classes
 - a. Get feedback on what could be done differently to help them do better
 - b. Offer specific strategies to students based on their feedback
 - j. Before exams, give an application/enrichment-based extra-credit assignment to make sure they understand the material.
 - k. Share helpful resources with other faculty” e.g., Chronicle of Higher Ed Student Success site

Academics

- Continue to participate in 3 interdisciplinary certificate programs (Conservation Law Enforcement Certificate, Environmental Education Certificate, Foundations of Pharmaceutical Science Certificate)-in addition, Biomedical Physics Undergraduate Certificate (PHY124, BIO121, CHM342, and PHY373)?
- Revise Biology Department Assessment Plan
- Focus on internet courses in the summer, which has shown to increase summer enrollment
- New initiative to work with qualified teachers to offer dual credit for BIO 121 (major's course):
- Faculty commit to making efforts to help students in the DFW-range be successful

Inclusive Excellence

- Equal opportunity for all applicants in hiring faculty (Microbiology/immunology search)
- Continue to invite diverse speakers for the department seminar (+ Invite more external speakers)
- Continue to highlight diversity and cultural competence in courses
- Share diversity training/seminar opportunities and encourage faculty to attend

Global Engagement

- Collaborate with the GREAT (Globally Responsive Education and Teaching) program to promote internalization of the curriculum
- International field research for faculty/students in Belize (Ligon) and Australia (Finn)
- International field project for faculty in Australia (Finn)

Community Leadership and Partnership

- Continue the collaboration between NPS (National Park Service)/MSU
- Reinvigorate Advisory Board-elect more members
- Faculty work with multiple science competition events (e.g., Science Olympiad, OSEF)
- Faculty maintain Grape Demonstration Garden (Kovacs)
- Faculty/students curate Springfield Butterfly House (Barnhart-emeritus + students)

Infrastructure and Funding

- Promote interdisciplinary research collaboration to seek external funding

Chemistry and Biochemistry Department Action Plan/Goals (AY 2023 – 2024)

1. Strategic Enrollment Management and Retention

- Continue to work on barriers to success for classes with high DFWs
 - Continue enhanced tracking and flagging of CHM 160 students to ensure timely deployment of support.
 - Continue participating in PASS programs
- New Strategy: Our Undergraduate Curriculum Committee is discussing two proposals:
 - a parachute path to 2nd block classes to help students that don't do well in first exams.
 - a "Prior Learning Assessment" (PLA) concept where a student can test out of a course and get credit
- Revamp and update departmental website, brochures, videos.
- Continue encouraging faculty that participate in undergraduate/graduate research mentoring.
- Continue to engage undergraduate and graduate students in outreach activities in local schools

2. Evolving Academic Directions for Future Careers

- Continue to offer online options for some classes
- Continue supporting dual credit teachers by offering evening classes.
- Continue promoting enrollment in Foundations Pharmaceutical Science Certificate program.
- Seek professional development opportunities for faculty and staff.
- Revise Chemistry Department Assessment Plan.

3. Inclusive Excellence

- Continue using graduate admission fee waivers as needed.
- Continue to invite diverse speakers for seminars.
- Encourage faculty to attend diversity trainings/seminars

4. Global Engagement

- Continue recruiting international students thus increasing diversity, enriching learning environment and cultural perspectives.
- Seek and encourage opportunities for faculty in international collaborations.

5. Community Leadership and Partnerships

- Continue to keep development of relationships with alumni and other friends of CHM Dept (Advisory Board, LinkedIn, Newsletters etc.)
- Partner with local industry to enhance workforce development/internship opportunities for students and graduates.

6. Infrastructure and Funding

- Continue participating in Blunt Hall renovations
- Continue supporting faculty efforts to pursue external funding by providing incentives to attend workshops related to external funding sources (ACS, NSF, NIH, etc.).
- Faculty are expected write graduate student assistantships into grant proposals

CS Action Plan 2023-2024

1. Strategic Enrollment Management

- Continue to work on CS introductory courses to improve student success, which leads to better retention, and tackling DFW rates.
- Involve more undergraduate and graduate students in faculty research.

2. Evolving Academic Directions for Future Careers

- Developing an interdisciplinary data science undergraduate degree in collaboration with the mathematics department.
- Continue to recruit and enroll students into certificate/BS/MS programs.

3. Global Engagement

- Work on possible degree programs with China and India.
- Student/faculty research with other global institutions.

4. Inclusive Excellence Driving University Success

- Continue to invite diverse speakers for seminar programs.

5. Community Leadership and Partnerships

- Work with local employers and MSU administrators on more internships and full-time positions for students.
- Work on internships and full-time opportunities for primarily international graduate students.

6. Infrastructure and Funding

- Strategic space management for teaching and research labs during Cheek Hall renovation.
- Explore collaborations with other departments, and universities to seek federal funding as well as industry funding actively.

Engineering Action Plan 2023-2024

Work with S&T Dean and MSU Dean to make this cooperative program the best in the nation.

Strategic Enrollment Management

- Focus on recruitment – local and international
- Work with S&T to increase scholarship opportunities for students
- Work with MSU to raise foundation funds for student scholarships
- Work with MSU Dean to more clearly articulate the scholarship opportunities/challenges for admitted transfer students to MSU who choose to be part of the cooperative engineering program.

Infrastructure and Funding

- Continue to provide equipment necessary for the program

GGP ANNUAL GOALS FOR 2023-2024

Strategic Enrollment Management

- o Increase the number of majors, minors, and certificates in GGP.
- o Continue to balance our course offerings with demand, while also devising and implementing strategies to increase general education enrollments.
- o GGP will continue to review every major's progress toward completing their program requirements and proactively intervene to avoid common hurdles toward graduation.

DFW Rate Reduction

- o Devise and implement incentives to get at-risk students to utilize the GGP Success Center
- o Faculty will continue to implement strategies to reduce DFWs and report (annual report) the year-over-year impact of these strategies.

Infrastructure

- o Continue to identify and plan for equipment necessary to fully utilize the new Temple Addition facilities on day 1 of occupancy (labs, rock prep, VR Studio, etc.). This will include inventorying equipment that needs to be obtained or replaced, a plan for funding those purchases, and encouraging faculty to think about opportunities for pursuing grant funds.
- o Plan for the renovation and backfill of existing Temple Hall spaces.

Evolving Academic Directions for future Careers

- o Implementing a new naming and numbering system for our general education Geology courses (GLG 110, 115, 171) and creating a standalone lab. The new names and some numbering changes will be put forward for curricular change in Fall 2022. The remainder may need to wait until Fall 2023 because of the window for submitting new courses to MOTR.
- o Consider similar opportunities in Geography & Sustainability general education courses
- o Participate and lead the development of the new cross-program Tourism program including developing curricula aimed at practicing professional who are undercredentialed (e.g., fully online certificate programs)

Inclusive Excellence Driving University Success

- o In addition to hosting at least one seminar focused on issues of diversity and cultural awareness, GGP will increase student participation in the seminar by incentivizing students in our courses to attend.
- o Implement the recommendations regarding the recruitment, application, curricular, and GA policies made by GGP Graduate Faculty sub-committees in the previous academic year.

Global Engagement

- o GGP will offer study away programs or similar off-campus experiences that connect our students, our disciplinary concepts, and hands-on experiences in the context of other cultures.

Community Partnerships

- o Continue to develop partnerships to facilitate awareness, pursuit, and success in obtaining internships and other hands-on experiences that allow students to transition to the workforce via internships, directed research, and similar experience.

Department of Mathematics Goals 2023-24

1. **Curriculum & Program** (Strategic Enrollment, Evolving Academic Directions, Partnerships)
 - a. Push curriculum proposals for new courses as follows:
 - i. Foundations of Machine Learning
 - ii. Statistical Programming for Data Science
 - b. Form working group with CSC to develop interdisciplinary undergraduate BS in Data Science. Sketch of starting point is an appendix.
 - c. Promote YMTA as a recruitment tool for future teachers. Seek long-term funding base.
2. **Inclusive Excellence**. Adhere to the principles of diversity, equity, and inclusiveness in all activities of the department: hiring, student organizations, recruitment, student learning, external speakers.
3. **Hiring**. (Evolving Academic Directions, Globalization) In line with goal 2 and given the Faculty Data given in the annual report, recruit and hire the following:
 - a. Tenure track Assistant/Associate Professor in the mathematical sciences to enhance the planned program in Data Science (replacing Shouchuan Hu).
 - b. Tenure track Assistant/Associate Professor in mathematics educations (emphasis in secondary level) to enhance the BSED program (replacing Kurt Killion).
4. **Student Recruitment**. (Strategic Enrollment, Globalization) Develop a recruitment process to increase the undergraduate mathematics majors to 120+ and the graduate student numbers to 25+ within two years. (These are the five-year averages 2018-2022.)
5. **Inclusive Teaching**. Relative to #2 above, the Department will investigate inclusive teaching practices and their role in increasing student success and retention. Participating in the CNAS workshop on Inclusive Teaching, reading the book Inclusive Teaching (Hogan & Sathy 2022, copies on order), considering the use of the step-up/active learning classroom Strong Hall 001 (MTH 101 is currently) are some ways to achieve this. This will be an ongoing discussion item in department meetings.
6. **Infrastructure**. Work with CNAS Dean's office, CSC, and Design & Construction for the remodel of Cheek Hall.

PAMS Annual Goals AY 2023-24 (contingent upon department approval by 9/1/23)

1. Strategic Enrollment Management

- Explore strategies to increase CHP in service and general education courses offered by PAMS
- Re-examine early student success measures in department; what can be improved? What additional measures need to be implemented?
- Focus on further reducing DFW rates in AST 113 and PHY 123
- Continue to involve students in research in department labs; find ways for providing more accessible information to students on research work done in labs
- Explore new venues to increase marketing efforts directed at attracting students to department programs
- Continue to invite high school student groups for visits to department and Baker observatory

2. Evolving Academic Directions for Future Careers

- Continue to work on student enrollment in department certificates
- Continue to explore revision of an option, or develop a plan to introduce new option, to major geared toward future societal needs
- Offer updated PHY 373 Radiation Physics course in AY2023-24

3. Global Engagement

- International research collaborations from astrophysics faculty (Reed, Baran) in department
- Support efforts in recruitment of international students, such as from India (Ghosh) and Nepal

4. Inclusive Excellence

- Explore ways to recruit underrepresented minority high school students
- Continue to sponsor women students on attending CUWiP conferences
- PAMS faculty will continue to serve on committees on diversity and inclusion

5. Community Leadership and Partnerships

- Continue to partner with local industries for funding opportunities (e.g., SBIR) and student internships (Moreno, Ghosh, Sakidja)
- Continue to offer outreach programs, such as public viewing nights, at Baker Observatory (Morrison, Reed, Baran)

6. Infrastructure and Funding

- Upgrade KEM 204 classroom with new student tables and chairs
- Explore new grant proposals to fund faculty and student research
- Support ongoing grant funding efforts in department (Ghosh, Reed, Baran, Morrison, Besara, Moreno)
- Continue to seek endowments to help fund projects and infrastructure in PAMS