

College of Natural Science
STRATEGIC
2022-2026 | **PLAN**

NATURAL SCIENCE



MSU

NatSci.msu.edu

Dean's Message



Paul Duxbury

Welcome to the College of Natural Science's (NatSci) new strategic plan. The plan is a co-created, consensus document developed by the NatSci community over the past two years to identify strategic priorities and metrics that provide a roadmap for the college over the next five years.

Some may ask, "Why launch a strategic plan in the midst of a pandemic, while so many things are in flux and uncertain?" I believe that it is precisely times such as these that make us look at and reflect on who we are as an institution and academic community, what is most important, and what needs to be reimaged or let go as we face new realities. Our success will rest heavily on our ability to build a diverse, inclusive, and equitable community; identify key priorities and aspirations; and build academic excellence.

NatSci is a large community currently consisting of 5,500+ undergraduate students, 1,200 graduate students and postdocs, 1,073 faculty and staff, and more than 63,000 living alumni. The college strategy builds on outstanding historical achievements including the discovery of the world's most important cancer therapeutics, cisplatin and carboplatin, and a world-leading national facility in nuclear science—the Facility for Rare Isotope Beams, or FRIB. NatSci currently has top five national rankings in diverse interdisciplinary areas, including environmental sciences, nuclear physics, plant and animal sciences, STEM education research, and veterinary sciences. Several other areas are rapidly growing in international stature.

This strategic plan is a forward facing, living document that builds on existing strengths and develops new opportunities in a student-focused academic environment characterized by low barriers and a historic willingness to collaborate and cooperate in education, research, and service. To keep it relevant and nimble will require an ongoing process of broad discussions and considerations as we navigate our way through what promises to be some tough and challenging times. It is our hope that this plan will spark the vision, insight, and innovation necessary to successfully address current and future challenges, and to excel in this rapidly changing world.

destination



Introduction

This integrated strategy states our collective view of the best paths forward for NatSci as we pursue our vision and mission. With it, we clarify our priorities and agree on core values, common goals, and intended outcomes so that we can effectively channel our energy and resources.

The strategy focuses on identifying overarching needs, orchestrating joint efforts, and unifying innovations toward our mission to use discovery, innovation, and our collective ingenuity to advance knowledge across the natural sciences. Taking action on our strategy will help us accomplish our mission and move toward the world we envision – a thriving planet and healthy communities through scientific discovery.



VISION:

A thriving planet and healthy communities through scientific discovery.

MISSION:

To use discovery, innovation, and our collective ingenuity to advance knowledge across the natural sciences. Through equitable, inclusive practices in research, education, and service, we empower our students, staff, and faculty to solve challenges in a complex and rapidly changing world.

OUR ASPIRATIONS

The following aspirations were identified to help drive and support the college's strategic priorities and action items and to set us up for the future:

Improve inclusion. Recruit and retain 25 tenure stream faculty who increase our diversity. Double the number of Charles Drew Science Scholars.

Enhance the undergraduate experience. Retain 60 percent of incoming NatSci students through graduation. Boost the number of students proceeding to health professions by 30 percent. Raise the starting salary of employed graduates by 50 percent.

Strengthen graduate student success. Double our federal training grants. Double career training programs. Improve mentoring of graduate students.

Grow research excellence. Double the number of our research programs with Top 5 rankings. Increase federal research funding by 50 percent.

Cultivate community relationships. Boost participation in community educational and outreach activities by 30 percent. Increase partnerships with key industries and businesses, foundations and educational institutions by 25 percent. Foster more diverse partnerships.

CORE VALUES:

Inclusiveness – Foster a safe, supportive, welcoming community that values diversity, respects difference, and promotes belonging. We commit to providing equitable opportunity for all.

Innovation – Cultivate creativity and imagination in the quest for new knowledge and insights. Through individual and collaborative endeavors, we seek novel solutions to current and emergent challenges in the natural sciences.

Openness – Commit to honesty and transparency. By listening and being open to other perspectives, we create an environment of trust where ideas are freely shared and discussed.

Professionalism – Strive for excellence, integrity, and high ethical standards. We hold ourselves and each other accountable to these expectations in a respectful and constructive manner.

In pursuit of these, NatSci seeks to articulate a five-year strategy to continue the growth of the college's local, national, and international impact.

NatSci Strategic Priorities

Based on our process and feedback from the NatSci community, six strategic priorities were identified to guide the college:



1 Grow and support a welcoming, diverse NatSci community that empowers the best outcomes for all regardless of role, identity, or ability status.



2 Train students to think like scientists so that they can excel in diverse and meaningful careers that apply scientific thinking.



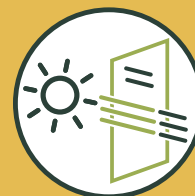
3 Maximize research excellence in biological, mathematical, and physical sciences and blaze new frontiers at their intersections.



4 Pursue scientific discoveries that address societal grand challenges, including climate change, emerging diseases, and food/water security.



5 Cultivate the college's internal and external relationships through compelling, engaging communication, development, and outreach efforts.



6 Demonstrate transparency, accountability, professionalism, and respectful communication in ways that contribute to the greater good of all.



STRATEGIC PRIORITY 1

Grow and support a welcoming, diverse NatSci community that empowers the best outcomes for all regardless of role, identity, or ability status.



Diversity, equity, and inclusion spur new perspectives and ideas, lead to innovation, and propel advances in NatSci's scientific, educational, and outreach missions. Creating an inclusive community for all and promoting access for those who have been historically underrepresented in STEM disciplines are societal imperatives and vital for achieving excellence in our scientific and educational missions.

Goals and Action Items

Build a community where people feel they have a voice, a sense of belonging, and a desire to stay.

- Strengthen community understanding and support by acknowledging and learning from past experiences.
- Identify and eliminate cultural and structural barriers that lead to unequal access and outcomes for historically underrepresented groups.
- Build a sense of community and create connections for retention by organizing peer mentoring circles for faculty, academic specialists, postdocs, support staff, and students.
- Host formal and informal community-building/community integration gatherings.

Develop a culture that supports diversity through equity and inclusion.

- Value and advance DEI by defining unit-level goals and expectations that are in alignment with university values and guidelines.
- Enable broad and diverse inclusion in decision-making, and cultivate the open interchange of ideas, where all contributors feel safe to share their views, and leaders show appreciation for the contributions of all.
- Develop and promote DEI resources, programs, and workshops to improve awareness and understanding of bias, privilege, and oppression, and to share principles, strategies, and practices for inclusive environments at all levels.
- Improve the accessibility of our physical, technological, and e-learning environment to maximize ability, opportunity, and wellness for all.

Diversify our community by emphasizing DEI in admissions, hiring, career advancement, recruitment, and retention practices.

- Diversify leadership. Invite individuals (internal and external) from historically underrepresented groups for leadership positions and provide mentoring for success.
- Prioritize hiring and programs that are explicitly designed to increase diversity.
- Create a recruiting and interview experience for all prospective NatSci employees that provides greater exposure to diversity within our NatSci, MSU, East Lansing, and Lansing communities.
- Require all faculty and academic staff applicants to articulate their commitment to and experiences with DEI within teaching and research statements.

Provide search committees training and guidelines in assessing candidate experience with DEI initiatives and practices.

- Increase investment in undergraduate research and mentoring programs designed to broaden participation by individuals and groups historically underrepresented in STEM, and recruit participants in these programs to NatSci graduate programs.

Develop and apply equitable and transparent systems of performance expectations and evaluation, rewards, and promotion decisions.

- Develop college- and unit-level leadership with a strong DEI understanding and focus to promote training, assessment, and implementation of DEI in their own units.
- Require consideration of DEI efforts in annual performance evaluations and Reappointment, Promotion and Tenure (RPT)/Continuing (C) decisions for faculty and academic staff.
- Recognize individuals and groups engaged in exemplary DEI work and who build a record of assisting others in overcoming barriers.
- Recognize work-life balance challenges and the added academic mentorship and service commitments of women faculty and academic staff of color, including the impact on professional advancement.

Key Metrics

- By January 2023, **DEI efforts (internal and external) are part of annual performance evaluations**, in all units and for all members.
- By August 2023, NatSci will **establish new programs to incentivize DEI efforts**, including monetary awards for faculty, staff, postdocs, and students in recognition of sustained DEI activities and initiatives.
- Effective immediately, **NatSci** will develop and implement a **plan to diversify its tenure-system (TS) faculty**. The college will devote at least 25 percent of its hiring budget to diversity faculty, with a goal of hiring and retaining 15 TS faculty within 5 years and 25 TS faculty within 10 years from underrepresented groups.
- **Diversify** continuing and senior **academic specialist populations**.
- Conduct a survey in year one to **establish a baseline**, and subsequent surveys in years three and five to **measure progress and inform strategic direction** in diversity, talent recruitment and staff experiences.



STRATEGIC PRIORITY 2

Train students to think like scientists so that they can excel in diverse and meaningful careers that apply scientific thinking.

The ability to think critically is central to a well-functioning, free, and democratic society. In NatSci, we build critical thinking skills by training students to make careful observations, to analyze data, and to apply logical reasoning. Our aim is to graduate students who can think like scientists, so that they will succeed in any career that applies scientific thinking.

Goals and Action Items

Collaborate to deliver a broad and cohesive education in natural science.

- Articulate clear student learning outcomes for all majors and courses and continually improve instruction based on assessment of those outcomes.
- Connect the disciplines of natural science to deliver a coherent science education.
- Maximize student success by applying research-based teaching practices that promote diversity, equity, and inclusion.
- Integrate computational and modeling skills throughout the curriculum.
- Innovate with digital media to enhance student learning.
- Support and expand the development of graduate training grants.
- Ensure accountability for progress toward a graduate degree through annual mentoring meetings and written progress reports for each graduate student.

Raise student awareness of careers that apply scientific skills and expand opportunities for deliberate career planning.

- Expand the college's career services mission to encompass graduate students and postdocs.
- Ensure that undergraduates, graduate students, and postdocs are well-informed about the diversity of careers for which their training prepares them.
- Expand opportunities for internships, externships, shadowing, and other career experiences for undergraduates, graduate students and postdocs.
- Connect students at all levels with both academic and non-academic leaders beyond the university.

Strengthen NatSci's growing programs focused on human health.

- Reimagine our curricula for health science undergraduate students, particularly human biology majors, to optimize their preparation for both post-graduate medical training and the full breadth of careers that further human health.
- Collaborate with health-related units across the college and throughout the university to establish a partnership that serves students pursuing health careers.

Key Metrics

- **Increase the 6-year graduation rate for students entering NatSci** above 82 percent by 2026, while reducing the gap between white students and historically underrepresented groups in NatSci.
- **Increase 2-year retention and persistence of students** from historically underrepresented groups in NatSci degree programs to reach parity with other groups by 2026.
- **Expand the Charles Drew Science Scholars program**, with a target of 120 students entering per year by 2026.
- **Ensure** that all NatSci courses and majors have **clearly articulated Student Learning Outcomes** by 2024.
- **Aim** to have **all NatSci students participate in a career-related co-curricular educational experience** prior to the middle of their junior year, with a goal of 80 percent by 2026.
- **Maximize** the **percentage of students who are moving on to a pursuit aligned with their career goals** at the time of graduation, with a target of 90 percent by 2026.



STRATEGIC PRIORITY 3

Maximize research excellence in biological, mathematical, and physical sciences and blaze new frontiers at their intersections.

The biological, physical, and mathematical sciences are core to understanding the natural world and are fundamental to advancing society's health and wellbeing. Research teams whose members reflect a diversity of expertise, opinions, and life experiences often arrive at creative solutions to difficult challenges more quickly. Multidisciplinary and interdisciplinary research across colleges, universities, and the private sector provides new opportunities for innovation and for student careers. Developing a diverse college community at all levels is central to the NatSci mission, critical to training young scientists ready for the workforce, and vital to maintaining NatSci's research excellence. Therefore, we will pursue diverse excellence throughout the research enterprise.

Goals and Action Items

Build on existing research strengths at the foundation of the college's research, education, and service missions.

- Empower all faculty to pursue research directions with the greatest potential to further our mission.
- Enhance continued growth as a global research leader through infrastructure that increases funding success.
- Optimize the college's strategic investments by coordinating resources.
- Engage the broader community in our research mission through communication and outreach.

Incentivize multidisciplinary collaborations that create new opportunities.

- Sponsor conversations and forums that encourage faculty, postdoctoral, and graduate student researchers to reach across disciplinary boundaries.
- Enhance support for innovative funding proposals that establish new cross-disciplinary collaborations.
- Increase curricular flexibility in graduate programs to allow the support and development of interdisciplinary coursework and other experiences.

Encourage collaborations that connect with emerging research priorities.

- Invite great ideas that broaden the college's participation in emerging research trends.
- Encourage collaborations that capitalize on the college's strengths in expanding research areas, including promoting planet and human health, driving the digital revolution, and uncovering principles of nature across scales.

Key Metrics*

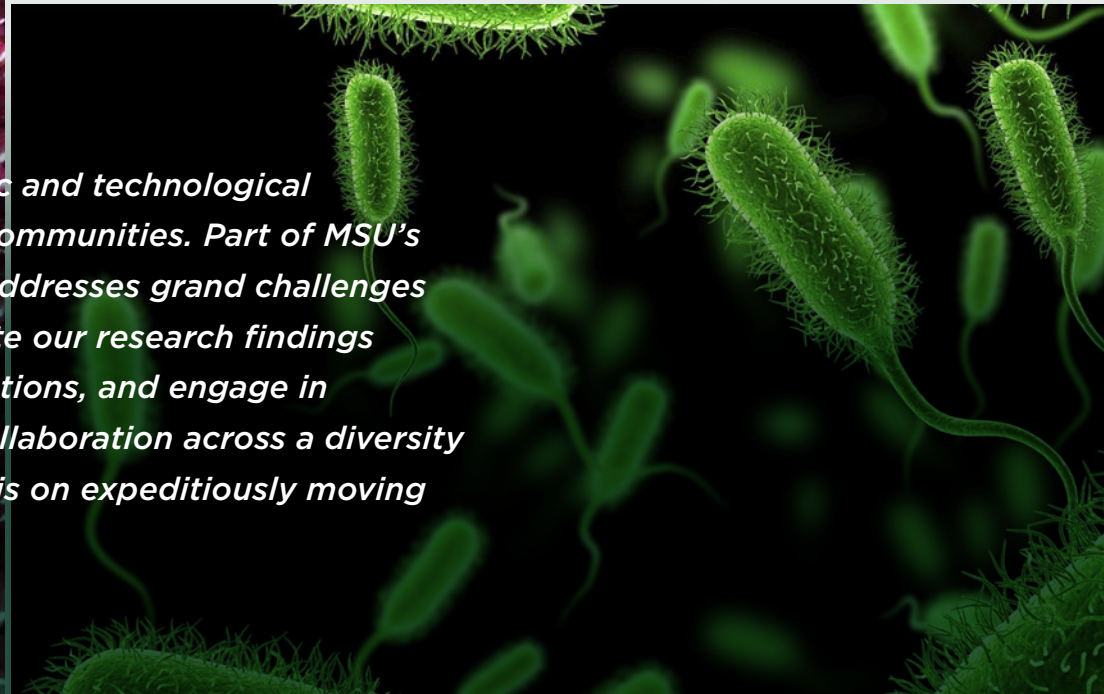
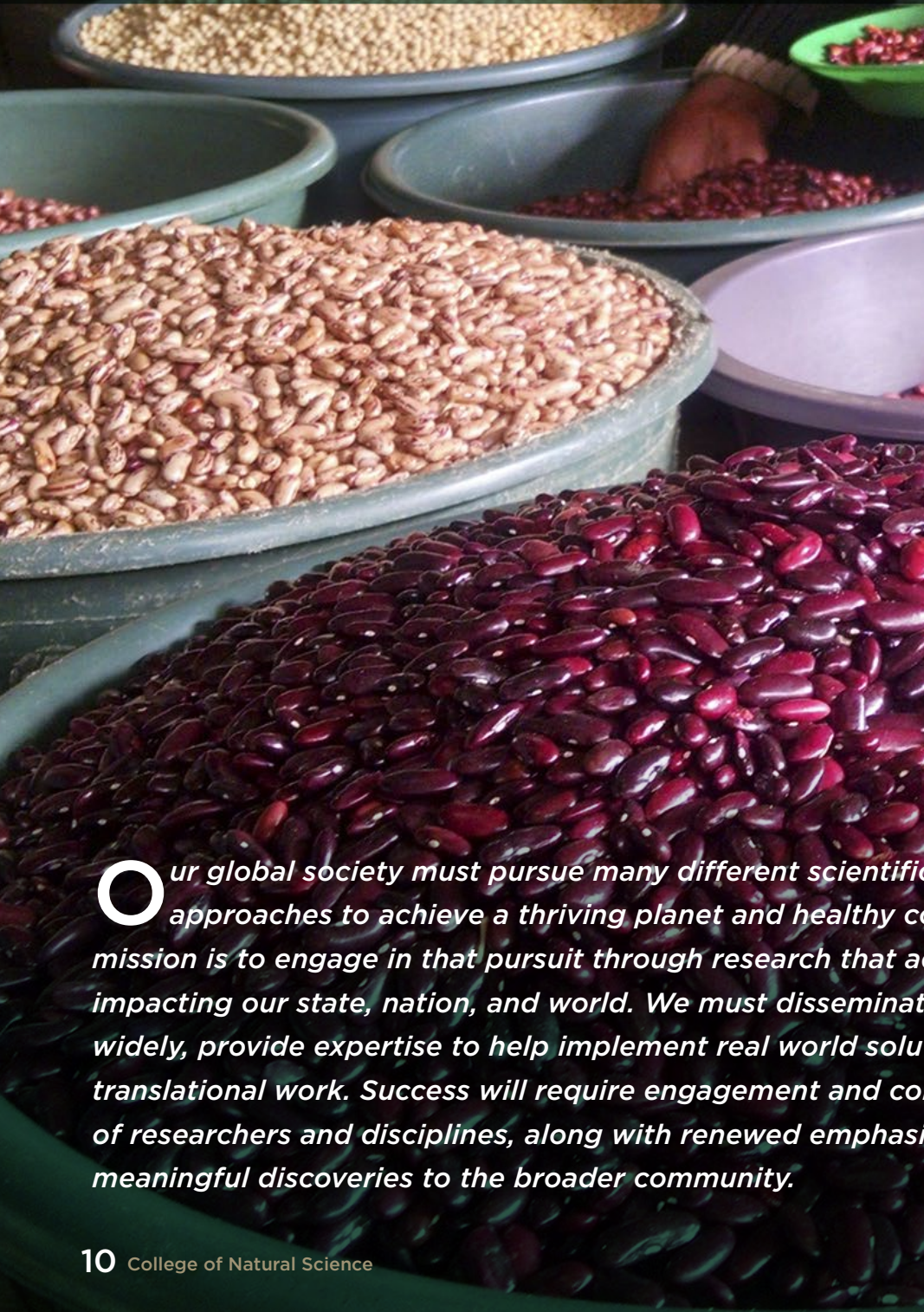
- **Increase** both the **quality and quantity of research publications** and increase **citation rates** by 50 percent.
- **Double** the number of **research programs with top five national rankings**, while raising all programs by at least 20 percent in the major rankings.
- **Increase federal grant expenditures** by 50 percent.
- **Double** the number of **training grants and external student fellowships**.
- **Increase** by 50 percent the number of **intramural and extramural faculty, staff, and student awards**.

* The metrics listed in Strategic Priorities 3 and 4 overlap significantly.



STRATEGIC PRIORITY 4

Pursue scientific discoveries that address societal grand challenges, including climate change, emerging diseases, and food/water security.



Our global society must pursue many different scientific and technological approaches to achieve a thriving planet and healthy communities. Part of MSU's mission is to engage in that pursuit through research that addresses grand challenges impacting our state, nation, and world. We must disseminate our research findings widely, provide expertise to help implement real world solutions, and engage in translational work. Success will require engagement and collaboration across a diversity of researchers and disciplines, along with renewed emphasis on expeditiously moving meaningful discoveries to the broader community.

Goals and Action Items

Tackle challenging problems facing our planet, its people, and the sustainability of our society.

- Engage MSU researchers at all levels of experience in the university's land grant and Association of American Universities (AAU) missions.
- Invest in established research strengths with potential to discover solutions to societal grand challenges.

Collaborate with partners both internal and external to MSU to develop and apply research-based solutions to challenging problems.

- Partner with industry, healthcare, and local businesses to commercialize MSU inventions, enhance economic development, and create internship opportunities.
- Partner with other colleges at MSU to establish collaborations that bring together a diversity of technical expertise, opinions and life experiences to address societal grand challenges.

Pioneer new approaches to emerging global problems.

- Respond swiftly to emerging global problems through innovative applications of scientific research.
- Invest in both applied and fundamental research essential to addressing emerging grand challenges.

Key Metrics*

- **Double** the number of **new proposals** that are submitted addressing societal grand challenges.
- **Increase** by 50 percent the number of **partnerships with businesses**.
- **Increase** the number of NatSci **licensed patents and start-up companies** by 50 percent.
- **Increase** by 50 percent the **number of funded large-scale grand challenge projects** in NatSci.
- **Double research support** from **individual donors and the private sector**.

* The metrics listed in Strategic Priorities 3 and 4 overlap significantly.



STRATEGIC PRIORITY 5

Cultivate the college's internal and external relationships through compelling, engaging communication, development, and outreach efforts.

Effective communications, development, and outreach activities are vital to the success of any academic enterprise. As a public institution and scientific community, we are obligated to share—in a clear and accessible way—our discoveries and innovations, particularly those supporting the public's understanding of how science is important in their everyday lives. In turn, engagement with our audiences will strengthen our relationships to ensure that our research and educational pursuits remain relevant; our accomplishments and contributions are elevated in ways that attract external funding from individual donors, foundations, and corporations; and the value of our college is conveyed to the broader community.

Goals and Action Items

Extend the reach, influence, and efficacy of the college's scientific and educational endeavors through innovative, compelling communications.

- Enhance the appreciation of science by showing how it helps us understand and navigate our lives in an increasingly complex world.
- Integrate diversity, equity, and inclusion (DEI) into NatSci themes, messages, and storytelling to authentically represent the college population and communicate actions and activities.
- Convey NatSci's vision, mission, values, and research endeavors to help the college recruit and retain a diverse body of the best and brightest students, staff, and faculty members, and to reinforce relationships with donors and other external funders.
- Position NatSci as a leader in providing science-based solutions to people's problems and enriching their lives.
- Cultivate strong relationships with key funding agencies, professional journals, trade publications and professional societies to broaden the reach and voice of NatSci science communications.

Identify development efforts and initiatives that enrich the student experience, cultivate affinity among alumni and donors, and enhance the reputation of the college.

- Build and strengthen relationships with alumni and donors through current and new, innovative forms of engagement.
- Increase fundraising success with alumni and friends of the college, and with corporate and foundation partners.
- Steward donors with strategic and intentional activities that focus on impact.

Broaden and amplify the sharing of NatSci's research discoveries and innovations, transformative teaching, and student learning through outstanding outreach and education activities.

- Engage NatSci's diverse audiences and communities by sharing information and expertise and inviting idea exchange around transformative research, teaching, and learning activities.
- Support and broaden existing connections —both online and in-person— with people, groups, and organizations outside of the science community to foster mutually beneficial relationships that encourage the exchange of ideas, resources, and expertise.
- Attract prospective students by sparking an interest in, and passion for, science.
- Inform public policies and influence decision making by sharing our scientific expertise and discoveries.
- Leverage existing outreach and education activities at the college and university levels to enhance overall efforts and better harness department/faculty activities toward a common goal.

Key Metrics

COMMUNICATIONS

- **Re-imagine the college communications strategy** around NatSci's strategic plan by January 2023.
- **Enhance storytelling** by broadening the scope and diversity of news/information shared, including multimedia initiatives and series that are representative of the NatSci community.
- **Elevate the college's use of social media and other online communication** platforms—especially the NatSci website—to **increase visitor engagement and public awareness** of the college's research and activities.
- **Increase coverage of NatSci research-related activities in the popular press** (print, digital, radio, TV) by 15 percent to enhance the college's visibility in the broader community.
- **Identify a core pool of experts** by field to help amplify NatSci's reputation as a respected, dependable, scientific resource by October 2022.

DEVELOPMENT

- Invest resources to **enhance donor connectivity, stewardship effectiveness and donor frequency**.
- **Increase interactions and engagement with corporate partners** and foundations by 25 percent.
- **Grow average annual fundraising** by 50 percent—to more than \$10 million per year—over the next five years.
- **Develop a new blend of in-person and online discovery and engagement** with donors that increases overall engagement by 20 percent.

OUTREACH

- **Increase activities designed to promote scientific literacy** in the broader community and K-12 institutions by 20 percent.
- **Boost participation in community outreach and education activities** by 30 percent.
- Achieve a 25 percent **increase in community-engaged and service-learning opportunities** for students.
- **Increase the number of partnerships** with key industries and businesses, foundations, and educational institutions by 25 percent to gain broader access to knowledge and expertise, and to strengthen career development efforts.
- **Increase faculty participation in outreach-related activities** by 20 percent over the next five years.



STRATEGIC PRIORITY 6

Demonstrate transparency, accountability, professionalism, and respectful communication in ways that contribute to the greater good of all.

Transparent, inclusive practices are essential to dismantling structural biases, establishing a more equitable environment, promoting a sense of belonging, increasing participation, and building trust. This strategic priority strives to create a climate and culture within NatSci that makes it possible for us to accomplish our other strategic priorities and to respond with more agility to external pressures and crises. When all members of the community feel heard, valued, and respected, they operate at their fullest potential, thereby making human capital NatSci's greatest asset.

Goals and Action Items

Promote professionalism and accountability.

- Require each NatSci unit to adopt or develop and honor a code of professional behavioral standards that is consistent with college and university guidelines and prioritizes physical, emotional, and psychological safety for everyone: students, staff, postdocs, specialists, and faculty.
- Foster open conversation about NatSci core values through systems of performance evaluation and promotion that include discussion of these values, acknowledge effective interactions, and value DEI contributions as viewed by students and peers, and through self-reflection.

Increase and practice transparency and respectful communication.

- Establish and uphold transparency and accountability principles to promote professional, respectful communication throughout the college.
- Communicate clear and transparent information and procedures that enable college members, partners, and alumni to be informed of, and participate in, college-level decision making.

Empower personal development through mentoring relationships.

- Inform all mentees (faculty, postdocs, grad students, undergraduate students in research labs) about safety in mentoring relationships, how to be an engaged and proactive mentee and peer mentor, and how to seek interdisciplinary mentorship.
- Emphasize mentorship in professional conduct, including responsible conduct of research, scientific ethics, and creation of safe and respectful research, teaching, and training environments.
- Promote effective mentorship for graduate students by requiring annual guidance meetings that include written annual progress reports, provide constructive feedback, and incorporate a discussion of professional development opportunities, consistent with graduate school guidelines.

Key Metrics

- The College will conduct a survey of all members of its community in 2022 to **establish a baseline, and subsequent surveys in years three and five, to measure progress and inform strategic direction** in the following areas: satisfaction with their academic and professional environment; perceptions of increased professionalism; respectful communication, transparency, and confidence that their viewpoints will be considered; mentorship success; and effective mechanisms of accountability.
- By May 2023, each unit will establish and communicate a **clear reporting structure for input and concerns** regarding professionalism, mentorship, and transparency.
- By November 2023, the College will identify a **framework for effective mentorship** expectations and practices, and mechanisms for rewarding exemplary mentoring and taking corrective action when expectations are not met.
- By January 2024, the College and all units will have a **clear set of professional standards of behavior and transparency** with associated policies and procedures in place to reward individuals and units who exemplify professionalism and transparency and to take corrective action when standards are not met.

Phil Duxbury, upon his arrival in August 2018 as dean of the College of Natural Science (NatSci), set as one of his top priorities creating a new strategic plan for the college. As he geared up for starting the strategic planning process, he built on activities and approaches already ongoing in the college put into motion by then interim NatSci Dean Cheryl Sisk.

These activities included the development of a co-created vision, mission, and core values package for the Dean's Office to establish accountability and intentionality at the top of the organization; and the establishment of a Task Force on Inclusive Initiatives charged with conducting a collegewide climate survey to identify areas where NatSci was doing well and areas in need of improvement, and producing a report outlining recommendations to enhance diversity, equity, and inclusion (DEI) within all NatSci settings.

These threads of co-creation, consensus, and DEI-focused touch points were incorporated into the broader planning process and helped shape the college's approach as it began the development of its five-year strategic plan (2022-2026).

A foundational tenet of such endeavors is that the process is as important as the final product. Such a framework cultivates community cohesiveness and seeks to ensure that all voices are heard and perspectives considered in charting the college's actions, activities, and efforts.

A recap of the process and timeline for the strategic plan's development:

January 2019

- o NatSci Dean Phil Duxbury kicks off a collegewide strategic planning process with NatSci's chairs and directors, invites units to submit plans, and establishes working groups to define strengths, concerns and opportunities in five key areas: Vision, Mission, Values; Diversity, Equity, and Inclusion; Graduate Education; Research; and Undergraduate Education.

February/March 2019

- o NatSci chairs and directors nominate working group members.
- o Working groups begin a six-month work period to prioritize the most critical opportunities and issues and make recommendations about how NatSci might direct resources to strategically advance its vision and mission.

June/July 2019

- o Unit chairs and directors submit their final plans to the dean.

August/September 2019

- o Working groups submit reports of priorities and recommendations for their respective areas to the dean.

October 2019

- o Discussions begin about bringing in a third party facilitator to lead the next phase of the process, which involves the creation of three deliverables – a 2-page overview, a strategic plan, and a strategy implementation document.
- o A steering committee (Phil Duxbury, Val Osowski, Cheryl Sisk and Mark Voit) forms and meets with the potential facilitator to begin to frame the path forward, map key milestones and stakeholder touchpoints, and identify and establish the NatSci Strategy Integration Team (SIT) and its charter.

November 2019

- o Department chairs, directors and others make recommendations on SIT membership, which includes representatives from the NatSci Dean's Office, each of the working groups, and a cross-college representation of faculty and staff members who hadn't formally participated in the process to date.
- o The college secures the facilitation services of the East Lansing-based firm, Coetic. Karen DeShon, partner and organizational development and effectiveness lead, joins the effort.

December 2019

- o Dean Duxbury announces the 15-member Strategy

Integration Team (see list on page 18), the steering committee and facilitator, and previews the process at the NatSci Chairs and Directors meeting.

- o The SIT holds a Dec. 16 kick-off meeting to review the group's charge and deliverables and uses the working group reports as a starting point.

January/April 2020

- o The team begins meeting for two hours bi-weekly on Fridays in January 2020, with the steering committee holding one-hour meetings on the following Mondays (meetings to continue through May 2021).
- o In addition to meeting as a whole group, breakout groups and subgroups meet and do homework between meetings throughout the process.

May/July 2020

- o The SIT sends out early draft strategic priorities, action items, and metrics for feedback from the college community (see list on page 19).
- o The SIT receives more than 100 responses from across the college, deliberates on the feedback and adjusts priorities and action items, including the addition of a sixth priority related to communications, development, and outreach activities.

August/September 2020

- o The SIT turns its attention to final refinement of the strategic priorities, action items and metrics, and circles back to the working group reports to check alignment.
- o Strategic priority teams circle back with NatSci groups and individuals for additional feedback.
- o The team begins work on the first deliverable – a 2-page NatSci overview—which includes the new NatSci vision, mission, and values; a NatSci “At a Glance” section; the six strategic priorities, and aspirational metrics.

October/December 2020

- o A graphic design version of the 2-page overview is produced for the SIT's consideration.
- o The SIT shares the overview with NatSci chairs and directors to gather additional feedback.
- o Work begins on the strategic plan, which will detail the goals, actions, and metrics for each of the six strategic priorities.
- o The SIT reviews the first draft of the strategic plan (including graphic design and layout elements), along with another iteration of the 2-page overview with updated icons.

January 2021

- o Additional iterations of the 2-page overview and strategic plan are shared with the team based on ongoing feedback.
- o Work commences on the strategy integration document, with leads identified for each strategic priority and SIT members signing on to assist with writing and review as needed.

February/June 2021

- o Each strategic priority team works on fleshing out content by adding the following sections: “Where we Are,” Next Steps,” “Primary Metrics,” and “Related Metrics.”
- o Input is also solicited from relevant external sources as the pieces are written.
- o Work on the strategy implementation document continues, with reader feedback from SIT members discussed and incorporated and ongoing refinement of format.

July/October 2021

- o An editorial team consisting of leads for each of the six strategic priorities, the dean, and the NatSci DEI assistant dean is established and begins meeting bi-weekly to incorporate feedback and continue refining the strategy implementation document.
- o Editorial team collectively reviews the entire document and provides feedback/discusses final issues to be resolved before sharing with the chairs and directors and other NatSci groups.

November/December 2021

- o 2-page overview and strategic plan are finalized and prepped for roll out.
- o Final tweaks to strategy implementation document are made by the editorial team.
- o Full document is sent to chairs and directors to kick off the implementation process.

January/April 2022

- o NatSci chairs and directors participate in Phase One of the strategic plan implementation by completing a survey sent to them in January to identify plan priorities and first steps ahead of a series of meetings in February and March.
- o NatSci officially announces its strategic plan; rolls out 2-page overview and strategic plan in April.

NatSci Strategy Integration Team

Jerry Caldwell, Director, Charles Drew Science Scholars program; Undergraduate Working Group member

Phillip Duxbury,* NatSci Dean and Professor, Department of Physics and Astronomy

Danielle Flores Lopez, NatSci Director of Academic Advising and Student Success Initiatives

Eric Hegg, NatSci Associate Dean of Budget, Operations and Research; Professor, Department of Biochemistry and Molecular Biology

Gina Leininger, Associate Professor, Department of Physiology

Elizabeth Munch, Assistant Professor, Department of Computational Mathematics, Science, and Engineering

Val Osowski,* NatSci Communications Director, Vision, Mission, Values Working Group member

Jeffrey Schenker, Professor, Department of Mathematics; Director of Graduate Studies; Graduate Working Group member

Danny Schnell,^ Professor, Department of Plant Biology; Diversity, Equity, Inclusion Working Group member

Richard Schwartz, NatSci Associate Dean for Graduate Studies; Professor, Department of Microbiology and Molecular Genetics, Graduate Education Working Group member

Cheryl Sisk,* NatSci Associate Dean for Faculty Development; Professor, Department of Psychology and Neuroscience Program; DEI Working Group member

Mark Voit,* Professor, Department of Physics and Astronomy; Undergraduate Education Working Group member

Angela Wilson, NatSci Associate Dean for Strategic Initiatives; Professor, Department of Chemistry; Mission, Vision, Values Working Group member

Willie Wong, Assistant Professor, Department of Mathematics

Elise Zipkin, Associate Professor, Department of Integrative Biology; EEB Director; Research Working Group member

Facilitator: Karen DeShon, Coetic, East Lansing, Mich.

* NatSci Strategy Integration Team Steering Committee Member

X No longer at MSU/NatSci

^ Deceased

NatSci Working Groups

DIVERSITY, EQUITY, AND INCLUSION

Diana Bello-DeOcampo, Associate Professor, Department of Integrative Biology

Jerry Caldwell, Director, Charles Drew Science Scholars program (liaison)

Denae Friedheim,^x Assistant Director, Residential Initiative on the Study of the Environment (RISE)

Sara Garnett, Research Associate, Department of Integrative Biology/KBS/EEB

Erynn Green, B.S., alumnus, human biology, 2020

Kendall Mahn (co-chair), Associate Professor, Department of Physics and Astronomy

Lazarus Miller, B.S., alumnus, biological science-interdepartmental, 2017

Kendra Pyle (co-chair), NatSci Coordinator for Diversity, Equity, and Inclusion

Daniel Pfau, (co-chair), Ph.D., alumnus, neuroscience, 2019

Ariel Robbins, Assistant Director and Advisor, Charles Drew Science Scholars program

Cheryl Sisk, NatSci Associate Dean of Faculty Development; Professor, Department of Psychology and Neuroscience Program

Danny Schnell,^ Professor, Department of Plant Biology

Stephen Thomas, NatSci Digital Curriculum Coordinator

Kevin Walker, Professor, Department of Chemistry

GRADUATE EDUCATION

Gary Blanchard, Professor, Department of Chemistry

Susan Conrad (co-chair), Professor Emeritus, Microbiology and Molecular Genetics

Andrea Doseff, Professor, Department of Physiology

Jon Kaguni, Professor, Department of Biochemistry and Molecular Biology

Brenden Longfellow (co-chair), graduate student, Department of Physics and Astronomy

Cecilia Martinez Gomez,^x Assistant Professor, Department Microbiology and Molecular Genetics

Reshma Menon,^x graduate student, Department of Mathematics

Allan McNamara, Professor, Department of Earth and Environmental Sciences

Kathryn Miller,^x graduate student, Neuroscience Program

Rachel Morris, Continuing Specialist, Biomedical Laboratory Diagnostics Program

Lyudmila Sakhanenko (co-chair), Interim Chair, Department of Statistics and Probability

Jeffrey Schenker, Professor, Department of Mathematics

Richard Schwartz, Professor, Department Microbiology and Molecular Genetics and NatSci Associate Dean for Graduate Studies

Megan Shiroda, Research Associate, CREATE for STEM (Research liaison)

Alex Wright, graduate student, Department of Integrative Biology

RESEARCH

Bruno Basso, Professor, Department of Earth and Environmental Sciences

Andrew Christlieb, Professor and Chair, Department of Computational Mathematics, Engineering and Science

Daniel Ducat, Associate Professor, Department of Biochemistry and Molecular Biology/PRL

James Galligan, Director, Neuroscience Program

Lisa Lapidus, Professor, Department of Astronomy and Physics

David Lowry, Assistant Professor, Department of Plant Biology

Tapabrata Maiti, Professor, Department of Statistics and Probability

Laura McCabe, Professor, Department of Physiology

Amy Ralston (chair), Associate Professor, Department of Biochemistry and Molecular Biology

Jeffrey Schenker,^ Professor, Department of Mathematics

Shinhan Shiu, Professor, Department of Plant Biology

Danny Schnell,^ Professor, Department of Plant Biology (DEI liaison)

Milton Smith, Professor, Department of Chemistry

Guowei Wei, Professor, Department of Mathematics

Kefei Yu, Associate Professor, Department of Microbiology and Molecular Genetics

Elise Zipkin, Associate Professor, Department of Integrative Biology/EEB Director

UNDERGRADUATE EDUCATION

Diana Bello-DeOcampo, Associate Professor, Department of Integrative Biology (DEI liaison)

Jerry Caldwell (co-chair), Director, Charles Drew Science Scholars program

Laura Chomiuk, Associate Professor, Department of Physics and Astronomy

Lee Cox, Professor and Chair, Department of Physiology

Jennifer Roberts, Secretary, Department of Physics and Astronomy

Ariel Robbins, Assistant Director and Advisor, Charles Drew Science Scholars program (DEI liaison)

Cori Fata-Hartley, NatSci Assistant Dean for Fixed-Term Faculty and Academic Specialist Development/Human Biology Program Director

Laura Mortensen, B.S., alumnae, mathematics, 2019

Gabe Ording (co-chair), Associate Professor and Director, Center for Integrative Studies in General Science

Kanchan Pavangadkar, NatSci Assistant Director of Student Success

Lynmarie Posey, Professor, Department of Chemistry; NatSci Associate Dean of Undergraduate Studies

Ben Schmidt, Associate Professor, Department of Mathematics

Megan Shiroda, Research Associate, CREATE for STEM Institute

Brian Telfor, Career Services and Placement Coordinator, NatSci Academic Student Affairs

Stephen Thomas, NatSci Digital Curriculum Coordinator

Stacy Vo, alumnae, human biology; Student Advisory Council

VISION, MISSION, VALUES

Danny Caballero, Professor, Department of Physics and Astronomy

Victor DiRita, Professor and Chair, Department of Microbiology and Molecular Genetics

Denae Friedheim,^x Assistant Director, Residential Initiative on the Study of the Environment (RISE) (DEI liaison)

David Hyndman,^x Professor and Chair, Department of Earth and Environmental Sciences

Teena Gerhardt, Associate Professor, Department of Mathematics

Robert Last, Professor, Department of Biochemistry and Molecular Biology

Val Osowski (chair), NatSci Communications Director

Kanchan Pavangadkar, NatSci Assistant Director of Student Success

Heidi Purdy, NatSci Assistant Dean, Academic and Student Affairs

Devin Silvia, Specialist and Director of Undergraduate Studies, Department of Computational Mathematics, Science and Engineering

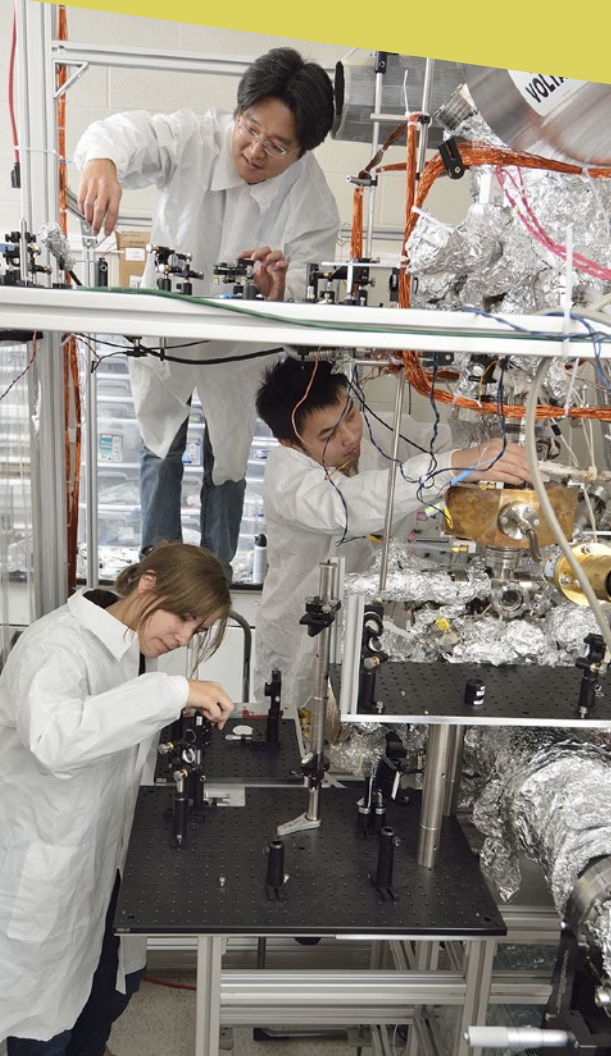
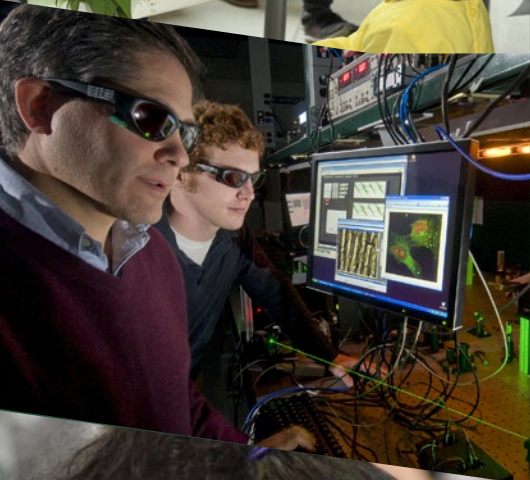
Angela Wilson, Professor, Department of Chemistry; NatSci Associate Dean for Strategic Initiatives

Feedback Participants

In addition to the cross-college representation on the Strategy Integration Team and working groups, other NatSci groups providing feedback to the NatSci strategic plan throughout the process are:

- o **Dean's Board of Advisors**
- o **Department Chairs and Program Directors**
- o **Diversity, Equity, and Inclusion Advisory Council**
- o **Faculty Advisory Council**
- o **Graduate students** (via email request)
- o **NatSci Advisors**
- o **Staff Advisory Committee** (ad hoc)
- o **Student Advisory Council** (undergraduates and graduates)
- o **Working Group members**

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