

Task Force on Inclusive Initiatives

Final Report

College of Natural Science
Michigan State University

April 1, 2019

Updated: August 26, 2019

August 10, 2020 - Figure 1 and 2 restored

August 22, 2020 – Hyperlinks updated

Members & Contributors

Task Force Members

Dominic Aluia
Undergraduate Student-Senior
Environmental Geosciences

Saul Beceiro Novo
Assistant Professor
Physics & Astronomy

Diana Bello-Deocampo
Assistant Professor
Integrative Biology

Jerry Caldwell
Director
Senior Academic Specialist-Advisor
Charles Drew Science Scholars

Megan Donahue
Professor
Physics & Astronomy

Danielle Flores Lopez
Assistant Director of Student Success
Academic Specialist-Advisor
Natural Science
PhD Student, Higher, Adult and Lifelong
Education

Kendra Pyle (Chair)
Academic Specialist-Advisor
Biochemistry & Molecular Biology and Plant
Biology

Ariel Robbins
Assistant Director
Academic Specialist-Advisor
Charles Drew Science Scholars

Sarah Seloske
Graduate Secretary (former)
Plant Biology

Devin Silvia
Academic Specialist-Teaching
Computational Mathematics, Science, and
Engineering

Kyana Smith
Undergraduate Student-Senior
Human Biology, English, and Spanish

Mariane Wolfe
Academic Specialist-Advisor
Biomedical Laboratory Diagnostics
PhD Student, Higher, Adult and Lifelong
Education

Contributors

Teresa Clark
PhD Student
Plant Biology

Pawel Danielewicz
Professor
Physics & Astronomy

Andrea Doseff
Professor
Physiology

Cori Fata-Hartley
Assistant Dean (Curriculum Coordination)
Natural Science

Cynthia Jordan
Faculty Excellence Advocate
Professor
Neuroscience

Eben Gering
Research Associate
Integrative Biology

Jonglim Han
Academic Specialist-Advisor
Dow STEM Scholars Program

Kenna Lehmann
PhD Student
Integrative Biology and Ecology,
Evolutionary Biology, and Behavior Program

Lazarius Miller
Alumnus, BS 2017
Biological Science-Interdepartmental

Nathaniel Ostrom
Professor
Integrative Biology

Daniel Pfau
PhD Student
Neuroscience

Chrysoula Vasileiou
Academic Specialist-Teaching
Chemistry

Acknowledgements

The Task Force members and Contributors would like to thank the following MSU administrators, faculty, staff, students for taking time to talk with us, meet with us, or provide administrative support to aid in the preparation of this report:

Hilda Mejia Abreu, Dorinda Carter Andrews, Shannon Burton, Theodore Caldwell, Karen Clark, William Donahue, Sue Dyer, Jesse Early, Heather Eisthen, Katusha Galitzine, Michael Hudson, Donna Rich Kaplowitz, Jasmine Lee (now at University of Maryland Baltimore County), Tracy Montgomery, Karen Pace (retired), Val Osowski, Dionardo Pizaña, Joyce Pinckney, Robin A. Rennie, Paulette Granberry Russell, Richard Schwartz, Lin Stork, Daniel Thaler, Laurie Thorpe, Quentin Tyler, Alex Wright, and The College of Veterinary Medicine Diversity Committee

Table of Contents

<i>Executive Summary</i>	7
Actions Underway based on Task Force Recommendations	7
Recommendations for Future Actions	9
<i>Why the Task Force was formed</i>	11
<i>Task Force Framework</i>	12
<i>Background Information</i>	13
Council on Diversity & Inclusion (CDC)	14
Charles Drew Science Scholars	15
Dow STEM Scholars Program	16
Curriculum Updates	17
<i>Data and Findings</i>	20
College Demographics	20
Department Inclusive Initiatives	37
Council on Diversity and Community (CDC) Initiatives	38
Current NatSci Hiring Practice to Increase Faculty Diversity	39
2012 CDC Report on Graduate Student Recruitment and Retention	41
SIRS review	43
<i>Status of Recommendations Underway</i>	44
Bylaws Changes - CDC to a Standing DEI Committee	44
College Climate Survey	45
College-level Diversity, Equity and Inclusion (DEI) Position	47
Diversity, Equity, and Inclusion (DEI) Training	49
College Website	51
<i>Future Recommendations</i>	54
College Diversity, Equity, and Inclusion (DEI) Mission Statement	54
College-wide strategic plan that emphasizes DEI work	54
Best Hiring Practices to Increase Diversity	55
Equity and Inclusion as part of annual reviews, areappointment, promotion and tenure	58
Evaluation of New Tools for Teaching Evaluation	59

Inclusion statements for course syllabi	60
Feedback Mechanism on Faculty Mentoring.....	60
Additional Recommendations	62
<i>References</i>	64
<i>Appendices</i>	68
Appendix A: Federal Guidelines and Definitions of Terms Used for Race and Ethnicity	68
Appendix B: Demographic Data for Comparison to NatSci Data	69
Appendix C: Natural Science Data Tables	70
Appendix D: Department DEI Initiatives	80
Appendix E: Sample SIRS form.....	83
Appendix F: Proposed Updates to SIRS form.....	87
Appendix G: College-Level Bylaws for Diversity, Equity, Inclusion Advisory Committee ...	87
Appendix H: Diversity, Equity, and Inclusion Training Timeline (CIEG proposal)	91

Executive Summary

In the spring of 2018, in response to the Nassar scandal, Interim Dean Cheryl Sisk and the NatSci Faculty Advisory Council created a Task Force on Inclusive Initiatives, which was charged to: (1) Evaluate suggestions from the NatSci Council on Diversity and Community (CDC) and comments from NatSci college and department town halls to advance diversity and inclusion within NatSci; (2) Conduct a NatSci climate assessment survey to identify areas where we are doing well and areas in need of improvement (to be completed by the MSU Office of Survey Research in Spring 2019); and (3) Develop recommendations for NatSci to enhance diversity, equity, and inclusion within all NatSci settings (e.g., classrooms, research laboratories, workplaces). Kendra Pyle, Academic Specialist-Advisor, has been appointed in a temporary, half-time position to lead the task force and college inclusive initiatives through May 2019.

The task force collected data on current College activities, demographics of NatSci students, faculty and staff, and reported activities from other MSU Colleges and programs. It also reviewed the recent history of efforts by the College, including a 2012 CDC Report on Graduate Student Recruitment and Retention. To the extent possible, it substantiated its claims and recommendations with citations to the social science literature and analysis of collected data.

A review of the NatSci demographics over the last 10 years shows that the demographics of the student population have not changed very much over the last decade and shows that there is ample room for improvement of the overall diversity of the College. NatSci itself could benefit from borrowing and adapting programs and effective practices from other colleges, and in turn, NatSci should freely share their experiences, materials, and any “lessons learned” with other colleges and organizations.

Actions Underway based on Task Force Recommendations

Some of the recommendations made by the task force are already being acted upon by the College of Natural Sciences. We list those here.

1. Change the Bylaws to Create a Diversity, Equity, and Inclusion (DEI) Committee.

Upon the passage of the proposed NatSci bylaw changes, a DEI Advisory Committee will replace the current Council on Diversity and Community (CDC). The DEI Advisory Committee shall recommend, review, and evaluate policies and programs that affect the diversity of the faculty, staff, and students of NatSci, as well as the inclusivity efforts of the college. This includes advising and consulting with the Dean and units and offices in the six focus areas identified by the MSU Office for Inclusion and Intercultural Initiatives to guide DEI initiatives for all MSU units: 1) Leadership; 2) Access, Retention, Advancement (applicable to faculty, staff, and undergraduate and graduate students); 3) Research; 4) Curriculum (formal and informal); 5) Campus Climate; and 6) External Engagement.

2. **Conduct a College Climate Survey.**

MSU Office of Survey Research Survey has been hired to conduct a college-wide climate survey in Spring 2019. There will be four versions of this survey targeting: 1) faculty and teaching specialists; 2) staff, academic specialists (with roles other than teaching), and postdoctoral researchers; 3) graduate students; and 4) undergraduates with NatSci majors. Coordinate majors in Lyman Briggs and a sample of undergraduate students with majors outside of NatSci who have completed NatSci classes in spring and fall 2018 will also be invited to complete a subset of the questions on the undergraduate survey.

The survey will assess general satisfaction within NatSci, feelings of belonging, safety, respect, and value, and how common incivility, bullying, and sexual harassment are within the college. The survey will also measure how individuals rate the climate, as well as how members of identity groups rate the climate for other groups. Additional assessments include: 1) the prevalence of bias/discrimination (experienced or witnessed), 2) the level of familiarity and comfort with mechanisms for reporting these experiences, and 3) the interest of staff, faculty, and students in attending diversity training.

3. **Create a NatSci Diversity and Inclusion Website.**

A website subcommittee made up of CDC and Task Force members has been tasked with creating a new diversity webpage. This website will act as a central hub where people can easily access information and resources related to college- and university-wide data, events, initiatives, and training opportunities on diversity and inclusivity-related topics. As of November 2018, the web page content is under development, with plans to finalize and publicize the new webpage in spring 2019.

4. **Establish a College-level Diversity, Equity, and Inclusion (DEI) Position.**

The task force has drafted a proposed job description for a full-time DEI Director, Assistant Dean, or Associate Dean position within the College. The position is not yet approved. Its responsibilities would include:

- Annual evaluation of college and unit-level diversity data for faculty, staff, and students.
- Carrying out college-level initiatives to meet goals in the DEI strategic plan.
- Collaborating with units to help them set and meet goals that align with the college DEI strategic plan.
- Developing accountability measures for college-level and unit-level inclusion goals, which will be assessed annually.
- Collaborating and sharing resources and best practices with other MSU units, with a focus on STEM (Science, Technology, Engineering, and Mathematics) colleges.
- Leading college-level DEI training efforts with a focus on improving problem areas identified in the climate survey from spring 2019.
- Working with Faculty Excellence Advocates or other identified individuals to implement best hiring practices to increase faculty and staff diversity.

5. Develop and Sustain a System of Training and Workshops for Diversity and Inclusion.

Members of the CDC have received a Creating Excellence Inclusion Grant from the Office for Inclusion and Intercultural Initiatives to develop a series of trainings and workshops to be held in 2019. The funded activities include:

- Training events centered on cultural competency, group identity, power and privilege, and the four levels of oppression. These events will be led by Karen Pace from Pace 4 Change and Dionardo Pizaña from Michigan State University Extension (MSUE).
- Pilot implementations of the day-long cultural competency training event to be offered on January 15 and 23, 2019 for a group of NatSci senior leaders, chairs/directors, faculty, staff, and graduate students.
- A train-the-trainer workshop, to be held in Feb-April 2019 (6 training days) to develop a NatSci facilitation team that can lead future cultural competency training and other diversity- and inclusion-related training events.
- A second round of the cultural competency trainings to be offered on April 10 and 11, 2019. These workshops will be led by Karen Pace and Dionardo Pizaña with assistance from the NatSci facilitation team.
- Subsequent day-long cultural competency training in summer 2019, to be led by the NatSci facilitation team.

Recommendations for Future Actions

6. Write and post a NatSci diversity, equity, and inclusion (DEI) mission statement.

NatSci should develop a DEI statement which shows the college's commitment to improve campus climate and create equitable experiences for all students, faculty, and staff.

7. Develop a DEI Strategic Plan for the College.

NatSci should develop specific college-level inclusion goals and a timeline to accomplish them that align with the six focus areas identified by the MSU Office for Inclusion and Intercultural Initiatives to guide DEI initiatives for all MSU units (see bylaws changes).

8. Increase and Improve Hiring of Diverse Faculty and Staff.

- A. NatSci should create language to be included in NatSci job ads about NatSci's commitment to diversity, based on the college-level DEI statement.
- B. Job requirements in the College of NatSci should reflect that candidates are expected to understand the challenges faced by members of underrepresented groups in higher education and actively participate in inclusive practices.
- C. NatSci should encourage broader searches for faculty positions. Extremely targeted hires in restrictively-specified research areas are less likely to yield qualified representatives from underrepresented groups, since candidates from minoritized groups currently make up a tiny fraction of the potential candidate pool in many fields.

- D. Candidates for all NatSci faculty and staff positions should be required to submit diversity and inclusion statements as part of their application packets.
 - E. Interviews for all faculty and staff positions should be required to include questions regarding the candidate's experience with diversity and inclusion initiatives.
 - F. NatSci should retain oversight of faculty and staff candidate pools to ensure that that they include a diverse group of candidates.
- 9. Incorporate equity and Inclusion-related goals as part of annual reviews, and reappointment, promotion and tenure.**
- A. Implement changes to faculty and staff annual reviews that require a commitment to inclusive excellence, as demonstrated by setting and meeting annual diversity and inclusion goals.
 - B. Implement changes to promotion and tenure policies to recognize contributions to diversity, equity, and inclusion in all promotion and tenure decisions.
- 10. Evaluation of New Tools for Teaching Evaluation**
- Research existing assessment tools on the market for evaluating teaching, that could be implemented in place of the current or a redesigned SIRS form. One example that is utilized by the Lyman Briggs College is the Student Assessment of their Learning Gains <https://salgsite.net/>.
- 11. Recommend Inclusive Language for Syllabi.**
- Recommend that all faculty include inclusion content in their syllabi, including how to report bias/sexual assault.
- 12. Feedback Mechanism on Faculty Mentoring**
- Develop annual feedback mechanisms (e.g. written surveys) for mentors and mentees that are consistent, constructive, anonymous, evidence-based, and also recorded and retained.

The recommendations listed above are by no means exhaustive. As such, the Task Force identified further recommendations that would benefit NatSci but were not explored in the same level of detail. These have been included at the end of this report and should be considered for opportunities to go beyond the limited set of recommendations presented above.

Why the Task Force was formed

Diversity, equity, and inclusion are core values of MSU and the College of Natural Science (NatSci). The college is committed to creating a supportive and welcoming environment where all students, faculty, and staff can pursue academic and professional success.

In the spring of 2018, in response to the Nassar scandal, Interim Dean Cheryl Sisk and the NatSci Faculty Advisory Council created a Task Force on Inclusive Initiatives, which was charged to: (1) Evaluate suggestions from the NatSci Council on Diversity and Community (CDC) and comments from NatSci college and department town halls to advance diversity and inclusion within NatSci; (2) Conduct a NatSci climate assessment survey to identify areas where we are doing well and areas in need of improvement (to be completed by the MSU Office of Survey Research in Spring 2019); and (3) Develop recommendations for NatSci to enhance diversity, equity, and inclusion within all NatSci settings (e.g., classrooms, research laboratories, workplaces). Kendra Pyle, Academic Specialist-Advisor, has been appointed in a temporary, half-time position to lead the task force and college inclusive initiatives through May 2019.

Task Force Framework

As members and contributors to the Task Force on Inclusive Initiatives, our work has focused on providing detailed recommendations to improve climate within the college and to make inclusive initiatives a clear college priority, guided by the following framework:

- We value diversity and recognize the importance of increasing the representation of faculty, staff, and students within the college from different backgrounds and social identities, including, but not limited to, race, ethnicity, sex, gender, religion, sexual orientation, socioeconomic status, age, ability status, and national origin. Groups composed of people from diverse backgrounds lead to greater diversity in thought, perspective, and viewpoints, which leads to higher productivity and more creative solutions (Leung et al., 2008; McCleod et al., 1996). Increased diversity also leads to improvements in students' educational experiences and outcomes (Astin, 1993; Gurin, 1999).
- We strive for equity where everyone has access to the resources needed to meet their academic and professional opportunities, recognizing that current and historical institutional practices and policies within the U.S. and MSU have created barriers that have led to unequal access for people belonging to minoritized groups, which must be addressed.
- We are committed to inclusion—creating an environment where all students, faculty, and staff within NatSci feel safe, valued, respected, and a sense of belonging.
- Creating a culture of change that leads to a truly inclusive environment is an ongoing process that will take time and investment by everyone within NatSci.
 - “This work requires the fortitude to know that reflecting, repairing, and renewing are part of a cyclical process” (Seifert, 2007, p. 17).
 - Accountability and transparent processes must be developed at every level within the college for this commitment to be realized.
 - Initiatives need to be solutions-focused, with measurable goals and outcomes.
 - The College must be transparent in sharing data, surveys, results, and outcomes with students, faculty, and staff and the greater community outside MSU.
 - Training must be an essential component of this work.

Background Information

To be able to address equity issues, it is imperative to understand the cultural and historical framework in which systems of inequality developed and are maintained within institutions. This understanding requires expanding a limited notion of racism (as well as other isms) as individual acts of prejudice to racism as an oppressive system of control that grants advantages to one group of people (the dominant group) while denying access to others (the target groups). By understanding and changing how oppression (i.e. racism, sexism, classism, ageism, ableism, cissexism, and heterosexism) operates on individual, interpersonal, institutional, and cultural levels (four levels of oppression), we can begin dismantling these oppressive systems, creating an inclusive and equitable environment for members of all minoritized populations (Pizaña, 2017; Sensory & DiAngelo, 2012).

Misconceptions about other groups of people, or prejudices, develop because of lack of exposure to people who are different from us. When our preconceived notions lead us to treat people differently, then we are discriminating against them. Although discrimination operates at individual and interpersonal levels, oppression at institutional and cultural levels develops when stereotypes and prejudice operate within “pervasive, historical, and political relationships of unequal power among social groups” (Sensory & DiAngelo, 2012, p. 43). Change requires challenging people’s assumptions and empowering “... individuals to reflect critically on the legacies and processes of their cultures, to imagine different futures and to take responsibility for decisions and actions” (Andreotti, 2006, n.p.).

There is a persistent belief that racism is a thing of the past and that it’s time to just get over it. This belief is due to a persistent misunderstanding in dominant American society that racism is an individual act perpetrated by hate-filled individuals toward members of another racial group. This definition of racism focuses on the personal and interpersonal levels while ignoring the systemic oppression that operates at institutional and cultural levels, including impacts on education, health care, housing, and criminal justice. This “focus on individual *incidents*, rather than on racism as an all-encompassing *system*, prevents the personal, interpersonal, cultural, historical, and structural analysis that is necessary in order to challenge it” (Sensory & DiAngelo, 2012, p. 102).

One of the challenges for minoritized groups is a lack of a sense of belonging at institutions of higher education (Hurtado & Carter 1997; Johnson et al., 2007). Members of minoritized groups may come to believe that they have less value due to negative images, representations, and viewpoints perpetuated by dominant culture (Sensory & DiAngelo, 2012). On college campuses, this belief can lead to students not participating fully in class, not speaking up when they feel excluded, and feeling powerless to promote change (Lee, 2015). This belief can also lead to stereotype threat, where the concern that stereotypes about a student’s group will negatively influence them actually affects their academic and work performance (Steele et al., 2002). Black faculty and students at predominantly white institutions like MSU often experience not being heard or seen, of having to work harder than their white counterparts, of having to explain why they belong, and sometimes having to remain silent to survive (blackspaceblog, 2014). Because of the invisibility of privilege, students and faculty from the dominant group usually believe that

members of minoritized groups should try to fit in. Thus, the focus of many educational institutions to increase academic success and retention of underrepresented students has been to help them integrate into the dominant, mainstream system, expecting them to adapt to the systems in place (Rhoades, 1998). Instead, universities need to strive to become more welcoming to all students, faculty, and staff, and strive to meet their needs for academic and professional success.

Council on Diversity & Inclusion (CDC)

Mission

The NatSci Council on Diversity and Community (CDC) disseminates information, and sponsors and organizes learning opportunities to encourage and maintain diversity within NatSci and MSU.

Guiding Values

All members of the college contribute to the diversity of the college and university communities. Diversity includes, but is not limited to, race, gender, sexual orientation, class, ability, belief and discipline. The CDC is dedicated to the following beliefs:

Diversity is key to maintaining the scientific leadership of the college and university. Departments and programs must create and nurture respectful, inclusive, and supportive communities to foster work-life balance and diversity.

Formation

On January 12, 2009, then Dean R. James Kirkpatrick sent out a memo announcing that the Women's Advisory Committee was renamed the College Advisory Council on Diversity and Community (CDC) with a significantly increased charge to advise the college concerning issues relevant to women and minoritized groups, and to undertake specific projects in these areas. Specific immediate projects included identification and dissemination of tools and resources for handling work-life balance, enhancing recruitment and retention of more diverse STEM faculty, and creating environments where diversity in background and lifestyle is acknowledged as an asset in advancing success. Other activities included offering workshops and presenting speakers to promote these efforts and developing resources for work-life balance in a diverse community. The council also advised on implementation of the National Science Foundation (NSF) Advancing Diversity through the Alignment of Policies and Practices (ADAPP-ADVANCE) grant designed to bring about institutional transformation by promoting greater transparency in recruitment, retention, and advancement of faculty. Since its creation, the council has expanded its membership to include representation by tenure system and fixed-term faculty, support staff, academic specialists, postdoctoral researchers, and undergraduate and graduate students.

Charles Drew Science Scholars

The Charles Drew Science Scholars program (formerly known as the Charles Drew Science Enrichment Laboratory [Drew Lab]) was established in 1979 by the NatSci to effect greater retention, academic success and graduation of students from groups under-represented in natural science and mathematics degree attainment. The mission of the Drew Scholars program aligns with the college's values on diversity and inclusiveness. Over its nearly forty-year history, the Drew Scholars program has helped hundreds of students achieve their goal of earning a college degree by pursuing a holistic and comprehensive approach of providing both academic and non-academic support to students.

Membership and participation in the Drew Scholars program are primarily by invitation. Invited students are selected from the pool of students admitted to the university who indicate on their admissions application that they plan to pursue a degree program offered in NatSci and/or pre-professional health curriculum (most of whom will ultimately decide to pursue a NatSci degree), and who meet specific criteria based on their high school record and standardized test (ACT, SAT) scores. The total number of Drew students (freshmen, sophomores, juniors, and seniors) ranges between 250-300 students per year. Students in the program are highly representative of the population demographic that has historically been underrepresented at MSU and nationally in attaining science and mathematics baccalaureate degrees. According to the National Science Foundation (NSF), underrepresented groups in science and engineering are “women, persons with disabilities, and three racial and ethnic groups—blacks, Hispanics [Latinx], and American Indians or Alaska Natives” (NCSES, 2017, p.2). The typical yearly demographics for the Drew Scholars program are 45% African American, 25% Hispanic/Latinx, less than 1% American Indian/Alaskan Native, 27% two or more races, 2% non-underrepresented, 40% first-generation, and just above 50% who are eligible for a Pell grant financial aid award. The gender composition of incoming students is typically 3:1 female to male.

The Drew Scholars program provides student support services and resources that are structured around five programmatic activities: 1) academic advising, 2) tutoring and academic coaching, 3) career advising and resources, 4) residential science-emphasis living and learning community (Science Living and Learning Community, SLLC), and 5) freshman and sophomore seminar and mathematics and biology courses. The residential program is designed to ease students' transitions from high school to the 4-year college system by giving them an opportunity to be a part of an existing student community, to facilitate study-group formation, and to provide greater opportunities for out-of-class cohort and community-building activities that are known to positively impact students' academic success and view of their overall college experience. The program also assists students with identifying and securing opportunities for academic enrichment and career-related exposure, preparation, and training experiences, such as science internships and faculty-mentored research.

Dow STEM Scholars Program

In 2014, the Herbert H. and Grace A. Dow Foundation issued a challenge to universities in the state of Michigan to increase the number of students who graduate with a STEM degree. In response, MSU created the Dow STEM Scholars Program, which offers:

1. A special math course was developed to prepare students for higher-level math courses, for students who start at MSU underprepared in math, based on the math placement test taken by entering students.
2. An introductory course, *CEM121: Explorations in Chemistry*, was developed to ensure students have the math skills and appropriate background to succeed in *CEM141: General Chemistry*, a course required for virtually all STEM students.
3. A first-year seminar was introduced to teach academic skills needed specifically for success in STEM.
4. A model of intrusive and highly personalized advising and mentoring was developed.
5. A series of programming to create a strong sense of community including both academic oriented and social activities was introduced.

To be recruited into the Dow STEM Scholars Program, students must have a low placement on the required math placement test, be Michigan residents, and have indicated they will pursue a STEM major. The primary measures of success for the program are:

- Successful completion of *MTH103: College Algebra* and *CEM141*.
- Successful completion of next level mathematics required for the student's major.
- Completion of an MSU STEM degree.
- Scholarship support for undergraduate research to enhance the major experience and to better prepare Dow Scholars for graduate or professional schools.

Students in the first cohort of Dow STEM Scholars are now in their fourth year of study. The program began with 49 students. Of these students, 11 left MSU (reasons: two financial, one transfer, one personal, two medical issues, and five for academic reasons). Nine students remained at MSU and decided to change to non-STEM degrees due primarily to a change of career interests. There are currently 28 active Dow STEM Scholars (DSS). All of the 28 active Dow Scholars, as well as the nine students who left the program for non-STEM majors at MSU, are on track to graduate in a timely manner. The Dow STEM students are more likely to persist in STEM majors (58%) than non-Dow students (40%), which is an impressive gain. As examples of the impact on scholastic performance, Dow STEM scholar consistently outperform their non-Dow STEM counterparts in *MTH103* and *CEM141*.

The Dow Program is very diverse. As of Spring 2018, 77% of Dow participants were female, 52% were first-generation students, and 55% were Pell-eligible. Regarding the racial/ethnic distribution, 43% of the participants were Black, 41% were White, 7% were Hispanic/Latinx, 4% were Multiracial, and 3% were Asian. The remaining 2% identified as either non-US citizen MI residents or did not report their race/ethnicity. Overall, the Dow STEM program serves a higher proportion of non-white (59%) and female (77%) first time undergraduates than MSU as a whole (35% and 52%, respectively). Additionally, Dow STEM Scholars represent a higher proportion of

first generation (52%) and Pell eligible (55%) first time undergraduates than MSU as a whole (23% and 21%, respectively).

Lack of support and community is a major factor in why students do not graduate from college and all of the efforts of the Dow STEM Scholars Program have been designed to create a strong sense of belonging and community among the Dow STEM students. In a survey of the Dow STEM Scholars in Spring 2018, 95% of the Scholars reported that they felt supported. The Dow Grant has made a significant difference to MSU and to individual students, and the program is focused on continuing to grow while developing new improvements and enhancements.

Curriculum Updates

While NatSci is deeply committed to its responsibilities to provide both introductory and advanced instruction in the physical, biological, and mathematical sciences, this report highlights some of our recent efforts to improve the introductory courses for undergraduate students from across the university. Research shows that the first two years of college are key to retention and academic success for students interested in pursuing STEM degrees. It is during this time that students must pass through the *STEM Gateway*, the required entry-level, introductory courses in biology, chemistry, mathematics, and physics that students complete before moving on to upper-level courses in their chosen discipline. Gateway courses have historically been barriers for large numbers of students, who lack the preparation or the support to succeed in the existing environment, or who find the vision of science and engineering offered in typical introductory STEM courses uninviting. These barriers have contributed to low numbers of students from underrepresented groups in STEM disciplines.

NatSci has the principle responsibility for STEM gateway at MSU and we are committed to reducing these types of barriers in order to improve student success for a diverse group of learners interested in STEM. Several large-scale reform efforts in introductory mathematics, chemistry, biology, and physics have been completed or are underway. These efforts have been supported through internal college resources, the Office of the Provost, and grants awarded to our NatSci faculty from the National Science Foundation (NSF), Association of American Universities (AAU), and Howard Hughes Medical Institute (HHMI), many of which have the specific goal of increasing STEM student retention and success particularly for students from underrepresented groups. These efforts have resulted in the adoption and continued development of evidence-based teaching practices and in improved student outcomes that we predict will lead to increased graduation rates and decreased time to degree (e.g. improved Drop, Failure, Withdrawal rates in first semester chemistry, biology, and calculus). Some of these major reform efforts are highlighted below.

Mathematical Sciences: Mathematics courses are required of essentially all MSU students and in the past, have been a significant impediment to student success. We are working to eliminate that impediment by providing the best possible opportunity for all MSU students to succeed in their initial math course. Courses are being transformed so that they employ research-based teaching methods and engage students in active and quantitative thinking. A central component of this reform effort is the elimination of

MTH1825: Intermediate Algebra, the developmental math course that has historically been a significant obstacle for many students. The Department of Mathematics and the Program in Mathematics Education (PRIME) have led, along with collaborators from the Hub for Innovation in Learning and Technology, the development and implementation of two new pathways for success for students who typically would have taken *MTH1825*:

- *MTH101/102: Quantitative Literacy* is a recently developed and now institutionalized curriculum that provides an alternative pathway for satisfying MSU's mathematics requirement that does not include *MTH1825*. These courses stress practical applications of mathematics for students who are intending to major in programs not requiring a deep background in mathematics. These courses eliminate the need for remediation in *MTH1825* and are better aligned with the needs of students not pursuing STEM degrees. Early results suggest that *MTH101/102* has been a success and is improving learning student outcomes for several hundred students every year.
- *MTH103: College Algebra* will now be the first math course for all students who previously would have taken *MTH1825* and plan to pursue a STEM degree. The curriculum is being revised to include evidence-based teaching practices and to better prepare students for calculus, which is required for most STEM programs. Following the pilot implementation in 2017-2018, a two-semester sequence of *MTH103 (A/B)* is being implemented to support students for whom a single semester is not sufficient to prepare them for calculus.

In addition to these large transformation efforts, other introductory level courses, such as *MTH124: Survey of Calculus*, a course that serves hundreds of life science and business students every year, have been transformed. Overall, the Department of Mathematics is committed to eliminating obstacles that prevent students from succeeding in introductory math courses.

Chemistry: Introductory chemistry is often the first "science" course STEM majors take and students' experiences have often been discouraging. The introductory general chemistry curriculum, including lecture (*CEM141* and *142*) and laboratory (*CEM161* and *162*) sequences, has been completely transformed and now incorporates evidence-based teaching and learning approaches that have been shown to improve student learning. The curriculum engages students in the same practices that scientists typically use and includes inquiry-based labs. Research is ongoing but we have already detected an increase in grade averages and a decrease in the number of students earning a 1.5 or lower in the lecture courses. We predict that these changes will contribute to an increase in STEM retention and a decrease in time to degree.

In addition to the general chemistry transformation efforts, *CEM121: Explorations in Chemistry* was developed as one of the academic components of the Dow STEM Scholars Program, described elsewhere in this report. This course is designed to prepare students for success in the general chemistry sequence, particularly for students who are underprepared in mathematics. Students who complete *CEM121* before taking *CEM141* earn, on average, a higher grade in *CEM141* and are less likely to earn a 1.5 or lower than similarly prepared students who do not take *CEM121*.

Biology: MSU's Biological Sciences (BioSci) program, our gateway experience in life science, is a key determinant for STEM retention and success for students from across the university, including the ~75% of NatSci students who are pursuing biology-related degrees. Therefore, improving the student experience in BioSci courses was a major focus of the recent, provost-supported Biology Initiative. Investments were aimed at shifting to learner-centered models of instruction grounded in published research about how people learn. The curriculum is being transformed to engage students in activities and assignments that emphasize time-on-task and high expectations, use formative and summative assessments of student learning to guide teaching practice, and create learning environments that encourage faculty-student and student-student interaction. Consequently, a large proportion of the Biology Initiative funding has been invested in enabling such models by reducing class size, increasing the number of graduate teaching assistants (GTAs) and undergraduate learning assistants (ULAs), and decreasing the student to instructor ratio. These efforts are ongoing, but have resulted in improved learning and better student outcomes.

Physics: Over the last four years, faculty from the Department of Physics and Astronomy have transformed several gateway physics courses, including *PHY183/184 (P3-Practices and Projects in Physics and EMPCubed)*, *PHY251/252 (P@CL-Physics at the Cellular Level)*, *PHY251/252 (DATA Lab-Design Analysis, Tools, and Apprenticeship Lab)*. The transformation efforts approaches make use of the best available research on undergraduate education in physics while supporting the use of modern tools such as computer modeling. Evaluation of these innovative instructional models has shown that students who take the transformed courses perform better on nationally normed concept inventory assessments and have better attitudes about physics and physics research compared to students in traditional course offerings. The Department of Physics and Astronomy is now poised to build on these successes to develop innovative studio-style and problem-based courses that can take advantage of the collaborative learning spaces planned for the new STEM teaching building.

Data and Findings

College Demographics

It is important to understand where NatSci stands as a college as it relates to the diversity of its members. This will create a baseline going forward and identify areas where the college should focus its inclusion efforts to meet its diversity goals.

We collected and reviewed data on the race/ethnicity and gender of NatSci's faculty, staff, and students from MSU's Office of Planning and Budgets (OPB), which is from the fall semester of each specified academic year. Race/ethnicity categories referenced in the data tables and graphs are the identification labels tracked and used by OPB, according to federal guidelines (see Appendix A). Persons of color includes faculty, staff, and students listed as African American/Black, American Indian/Alaska Native, Asian, Hawaiian/Pacific Islander, Hispanic/Latino/x, Multiracial, or Other. Before 2010, federal guidelines for collecting and reporting race/ethnicity data did not include separation of Asian/Pacific Islander or the addition of categories of Hawaiian/Pacific Islander or Multiracial. Since MSU does not record race/ethnicity data for international faculty, staff, or students, race/ethnicity data is only presented for domestic faculty, staff, and students (Office of Inclusion and Intracultural Initiatives, 2018).

We also collected race/ethnicity data for the state of Michigan from the 2010 Census and race/ethnicity and gender data for students enrolled at MSU in Fall 2017 and 12th grade students enrolled in Michigan high schools in 2017-2018 for comparison to NatSci data (tables 1 and 2 in Appendix B). Race/ethnicity and gender data for NatSci's faculty, staff, and students can be found in figures 1-3 below and tables 1-16 in Appendix C. Data relating to persistence, graduation rates, and degree conferrals for undergraduate and graduate student populations can be found in figures 4-13 below and tables 17-25 in Appendix C. Additional demographic tables and graphs for the college are available [online](#).

Race/Ethnicity

Evaluating the College's efforts towards diversity and inclusion by considering the makeup of its faculty and staff population through the lens of race and ethnicity revealed that the college is significantly underperforming in meeting its diversity goals (compare table 1 in Appendix B with tables 2-6 in Appendix C). African American/Black, Hawaiian/Pacific Islander, Hispanic/Latinx, and Multiracial groups are considerably underrepresented in all employment categories (Figure 1 and 2 and tables 2-6 in Appendix C, compare to table 1 in Appendix B). American Indian/Alaska Natives are underrepresented in all employment categories except for tenure-stream faculty, which meet Michigan population percentages (0.7%); however, this is likely unreliable due to the extremely low sample size (only two faculty of 301 for 2017-2018). Of particular concern are the low percentage of African American/Black tenure-stream faculty in the college compared to the Michigan population (0.7% compared to 14.1%).

NatSci faculty and staff employment categories in the college include tenure-stream faculty, fixed-term faculty, continuing academic staff (continuing academic specialists), fixed-term academic staff (fixed-term academic specialists), and non-academic staff. The distributions of faculty and staff by employment category are available in table 1 in Appendix C.

The NatSci undergraduate and graduate student data shows:

- For a seven-year period beginning with academic year 2007-08, domestic students of color consistently represented about 17% of the student population in NatSci (table 8 in Appendix B). The overall percentage of domestic students of color began modestly increasing in the college starting in the 2014-15 academic year, reaching 22% in the 2017-18 academic year.
- There is a larger percentage of students of color among the undergraduate students than graduate students in the college (27.0% to 15.5% in 2017-2018 based on domestic student data).
- There are smaller percentages of underrepresented students (per NSF guidelines - Black, Hispanic/Latinx, and American Indians/Alaska Natives) among NatSci graduate students than undergraduate students (Figure 2).
- American Indian/Alaska Native students are underrepresented, and their undergraduate student population has declined, reaching a low of 0.2% in the 2017-18 school year (table 10 in Appendix B, Figure 2).
- The Hispanic/Latinx undergraduate student population has more than doubled since the 2007-08 year but the group still remains underrepresented compared to the population of 12th grade Michigan students (table 10 in Appendix B, Figure 2, compare to table 2 in Appendix B).
- Between 2007-2017, the International undergraduate student population within NatSci has seen a 3.5-fold increase (Figure 2).

Comparison of tenure-stream faculty to undergraduate students:

- Although the overall percentage of underrepresented faculty within the tenure-stream faculty is very low, it is even lower as compared to the corresponding percentage among the undergraduate students. Studies have consistently shown that it is important for students to interact with professors they can identify with. As highlighted in the table 1 below, the percentage of both Hispanic/Latinx (2.0%) and African American/Black (0.7%) faculty members in the college of Natural Science is dramatically lower than that of the corresponding undergraduate student population (5.1% and 7.7%, respectively).

Table 1. Race/ethnicity demographics: Tenured Faculty vs. Undergraduate Students

Race/Ethnicity	Tenured Faculty (%)	Undergraduate Students (%)
African American/Black	0.7	7.7
Asian	17.9	6.9
Hispanic/Latinx	2.0	5.1
White	73.4	65.1
International	5.3	9.8

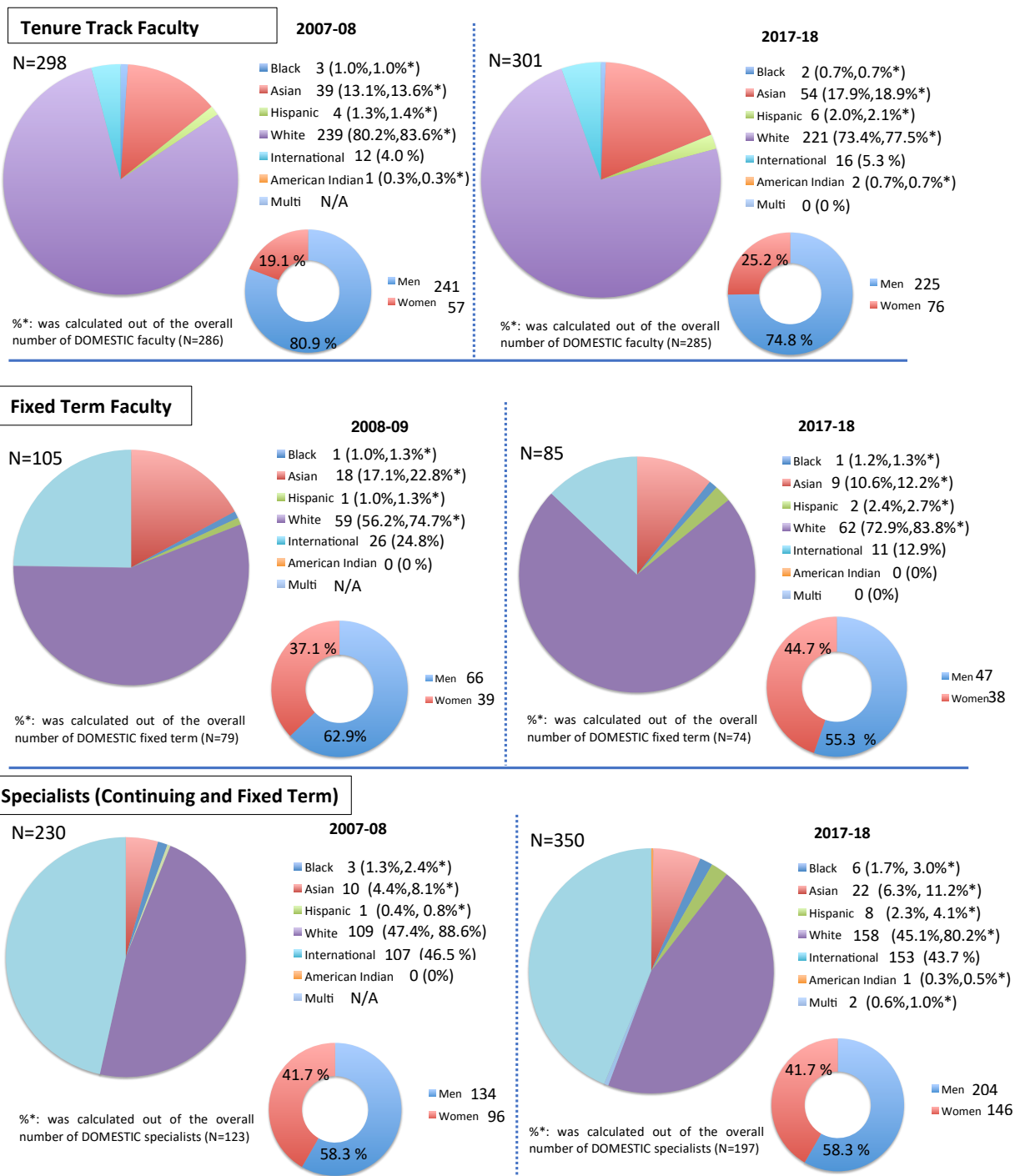


Figure 1. NatSci Employees by Ethnicity: Tenure-track Faculty, Fixed-term Faculty, and Specialists (Academic Staff). *Note: Before 2010, federal guidelines for collecting and reporting race/ethnicity data did not include separation of "Asian/Pacific Islander" or the addition of categories of "Hawaiian/Pacific Islander" or "Multiracial"*

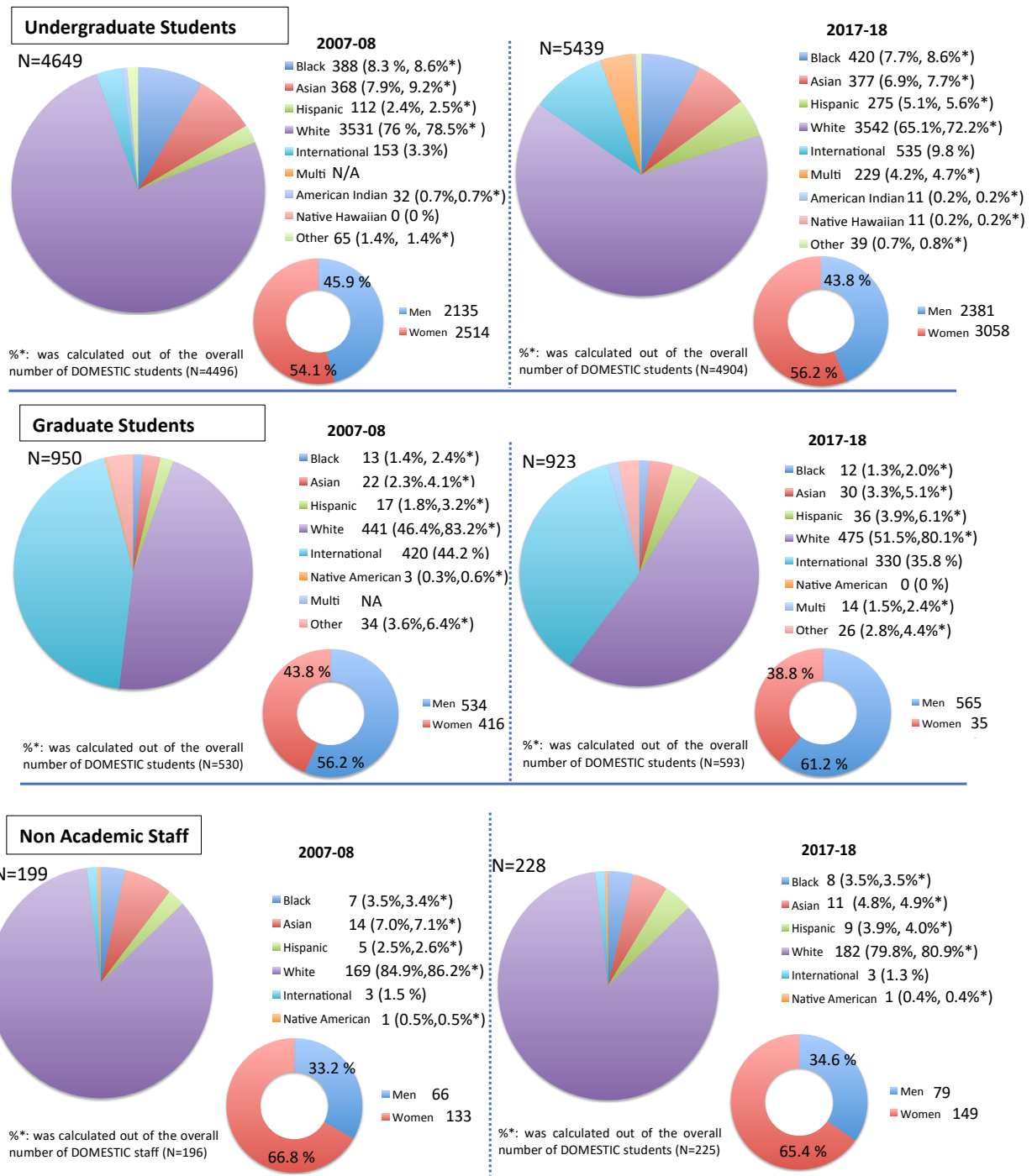


Figure 2. NatSci Undergraduate Students, Graduate Students, and Non-Academic Staff by Ethnicity. Note: Before 2010, federal guidelines for collecting and reporting race/ethnicity data did not include separation of “Asian/Pacific Islander” or the addition of categories of “Hawaiian/Pacific Islander” or “Multiracial”

Gender

Based on the data we have received from various university sources, including MSU Human Resources and the Office of Planning and Budgets, the only gender-based categories available for university employees and students are male/female. The university should expand gender options beyond the male/female binary to be inclusive of transgender individuals. This could be done by collecting self-reported data on sex assigned at birth (male, female) and current gender identity (male, female, transgender, or other self-reported identity), following recommendations of the GenIUSS Group (2014). Starting in the 2016-2017 academic year, the Common Application, a single, online application for more than 800 universities, changed the wording on the application to “sex assigned at birth” and also added a free response question so that students could self-identify their gender (The Common Application, 2016). Since MSU joined as a member institution for the 2018-2019 application cycle, MSU will now have information available on how students self-report their gender identity, which should be added to university data.

- Women faculty in NatSci are significantly underrepresented. Although overall NatSci has more female than male undergraduate students (56.2% female, 43.8% male), the percentages are dramatically different for tenure-stream faculty (25.2% female, 74.8% male).

Table 2. Gender demographics: Tenured Faculty vs. Undergraduate Students

Gender	Tenured Faculty (%)	UN Students (%)
Men	74.8	43.8
Women	25.2	56.2

- For the undergraduate student population, the gender difference among each race/ethnicity is small except among African American men and women. The percentage of African American women is more than double the percentage of African American men (70% women vs 30% men, for the 2018 cohort) while all other races/ethnicities never reach that level of difference between the two genders (see tables 11 and 12 in Appendix C).
- Comparing the demographics of the four largest departments comprising NatSci (Chemistry, Physics/Astronomy, Mathematics, and Integrated Biology), the percentage of female tenure track faculty varies from 14.3% (Physics/Astronomy) to 45% (Integrated Biology). The percentage of female graduate students varies from 19.6% (Mathematics) to 60.8% (Integrated Biology) (Figure 3).

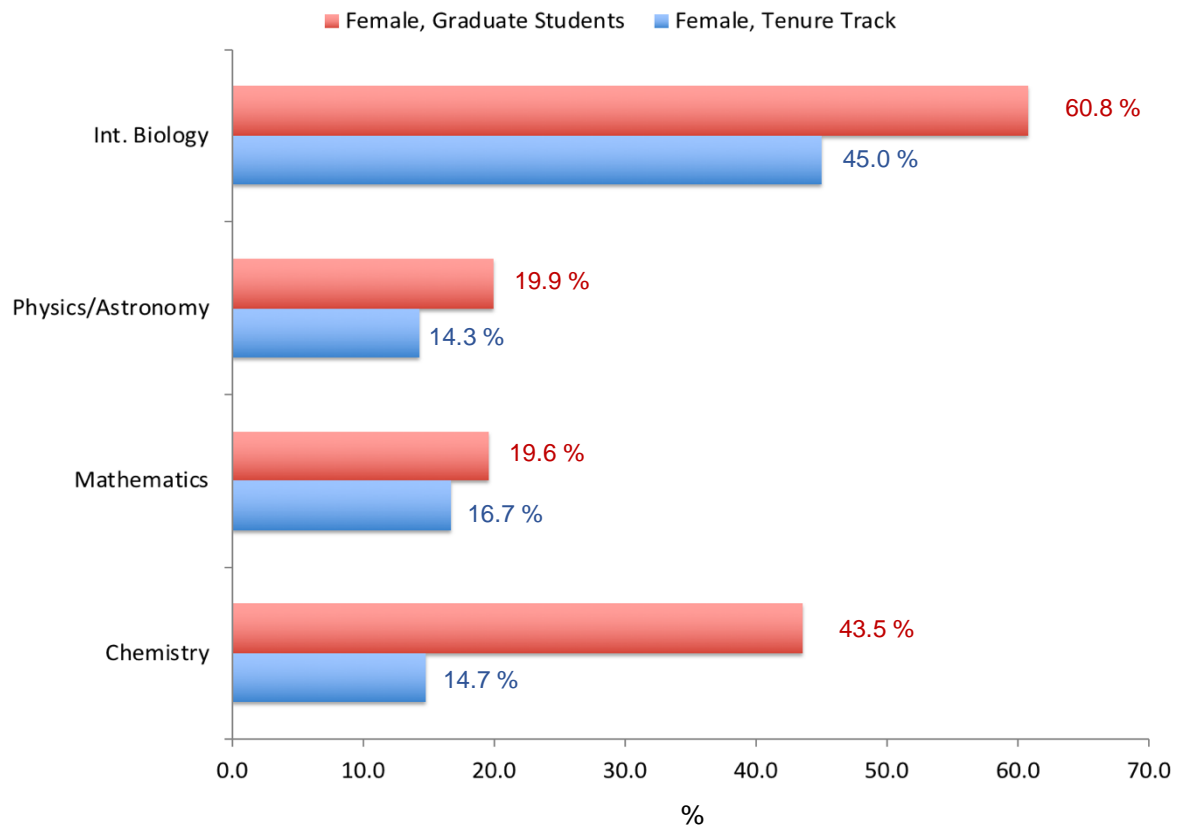


Figure 3. Comparison of NatSci departments by percentage of Female Tenure-track Professors and Female Graduate Students for the 2017-2018 academic year

Persistence / Graduation Rates / Degree Conferrals

It is important to review the persistence, graduation, and degree conferral data to ascertain how NatSci is doing in meeting its goals for diversity and inclusion not only in initial demographics of students but also in equity of degree attainment. In this section of the report, persistence and graduation rates of undergraduates in the College are reviewed to make this determination (see figures and tables below and tables 17-25 in Appendix C). Persistence is defined as the percentage of students who return to MSU for another academic year.

Persistence

- Overall, undergraduate students who enter MSU as NatSci students, persist at MSU and the persistence rates have increased over the last 10 years (Figure 4).
- Overall, men and women in NatSci persist at similar rates (Figure 5).
- Considering race and ethnicity, there are high levels of persistence for all groups after year one. After the second year, the difference in the persistence rates between whites and underrepresented students widens (Table 3).

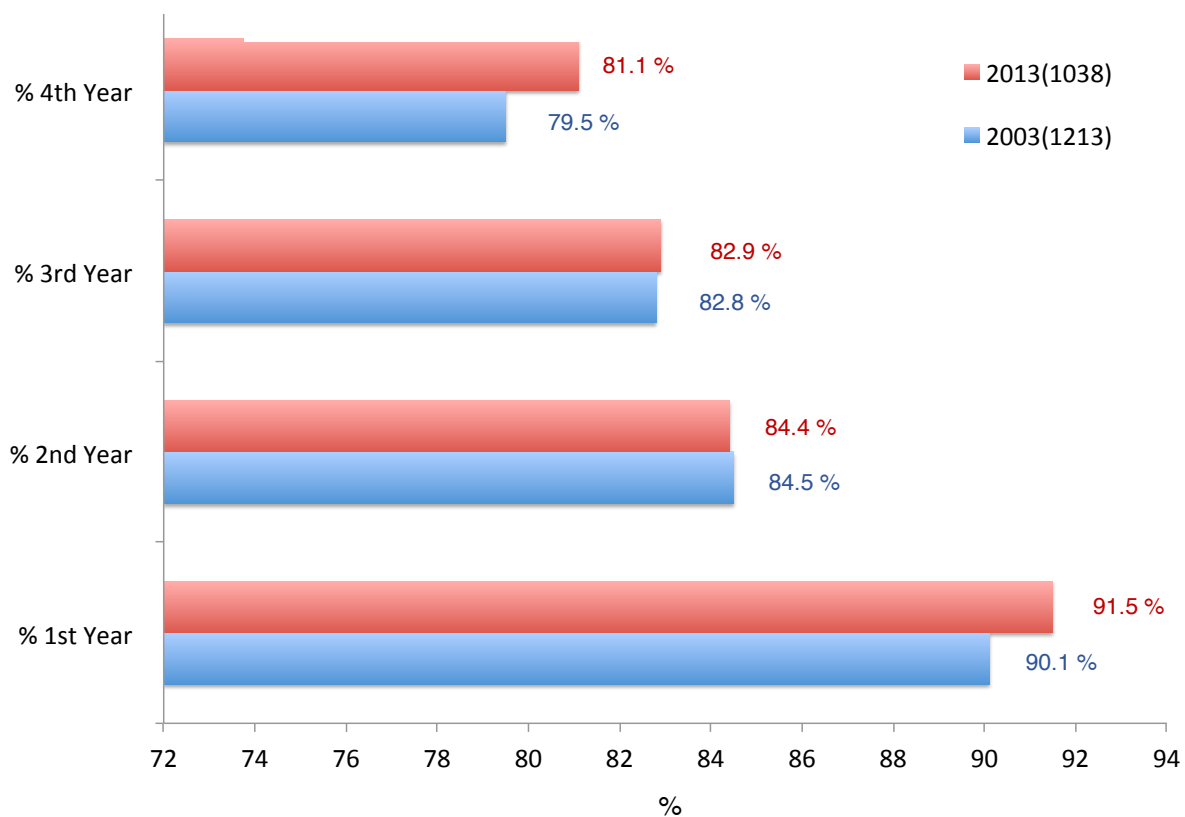


Figure 4. NatSci Undergraduate Persistence Rates, 2003 vs. 2013 Cohort

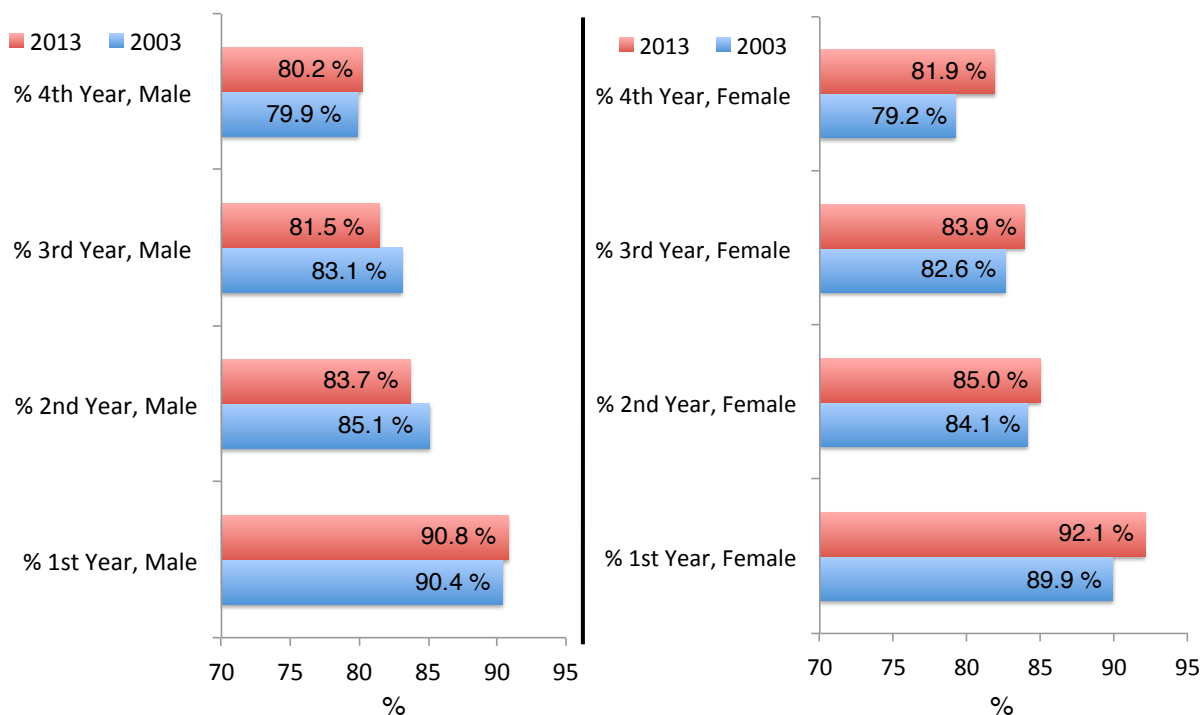


Figure 5. NatSci Undergraduate Persistence Rates by gender, 2003 vs. 2013 Cohort

Table 3. NatSci Undergraduate Persistence, by Race/Ethnicity

		Entering Cohort					10-year Average
		2003	2004	2011	2012	2013	
Year 1 Retention %	Black	83.2	92.8	85.4	85.0	87.8	87.2
	Hispanic	82.4	78.8	80.0	90.9	80.6	86.1
	International	72.7	84.6	91.4	89.7	94.6	86.3
	White	91.5	91.8	89.6	88.6	92.3	90.6
Year 2 Retention %	Black	73.3	85.6	74.4	78.0	74.4	76.0
	Hispanic	76.5	69.7	78.2	70.5	77.8	76.5
	International	72.7	84.6	88.6	78.2	83.9	78.7
	White	86.5	87.5	85.1	84.9	86.8	86.3
Year 3 Retention %	Black	70.3	77.0	70.7	78.0	73.3	71.3
	Hispanic	70.6	66.7	76.4	72.7	75.0	73.9
	International	72.7	76.9	76.4	72.7	75.0	73.0
	White	85.2	84.3	83.1	82.2	85.4	84.2
Year 4 Retention %	Black	63.4	72.7	67.1	70.0	70.0	67.5
	Hispanic	61.8	63.6	76.4	68.2	69.4	69.3
	International	63.6	76.9	81.4	74.7	81.3	70.1
	White	82.0	82.5	81.0	80.4	83.7	82.0

Graduation Rates

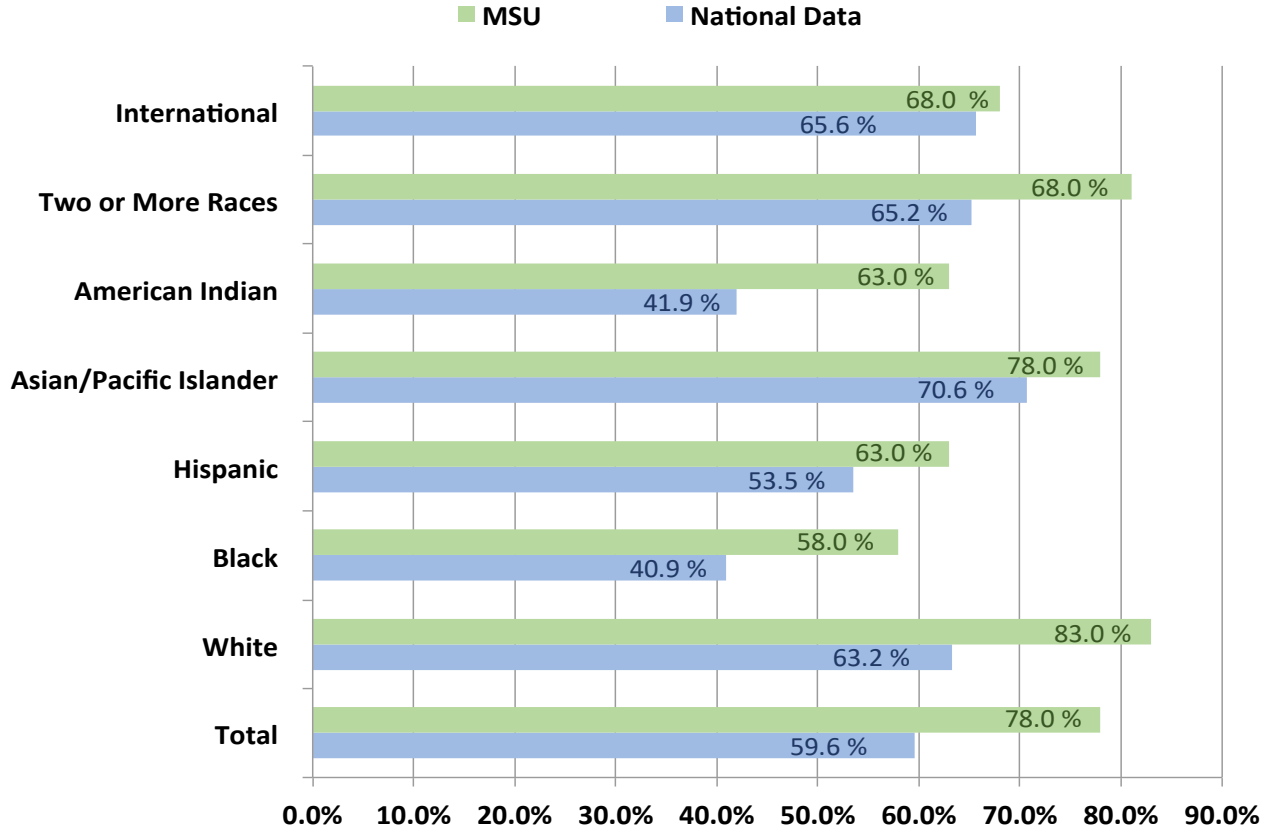


Figure 6. Graduation rates for MSU (2008 data) vs. the national average

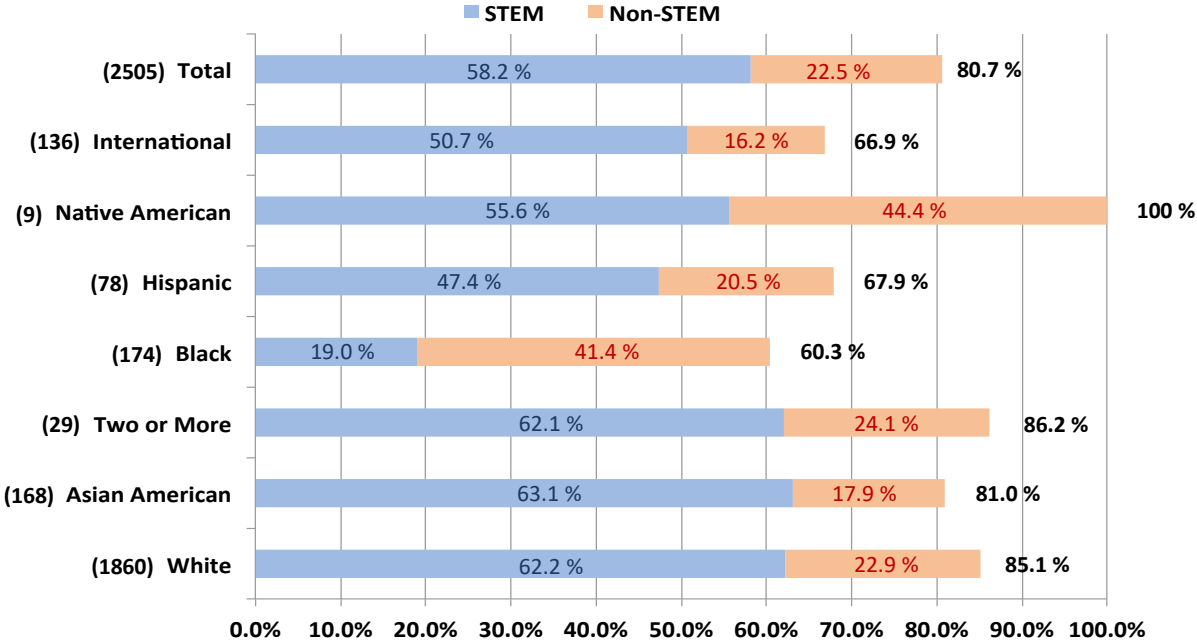


Figure 7. Six-year graduation rates for students starting in STEM colleges (2008 Cohort)

- MSU undergraduate graduation rates in 2008 are higher than the national average for all races/ethnicities, as shown in Figure 6.
- Figure 7 depicts the 6-year graduation rates, by race/ethnicity, for students starting in STEM colleges (including NatSci), for the 2008 cohort. Overall, only 58.2% of the students graduate with a degree in STEM (vs 80.7% graduating with any degree at all). The percentage of Black students graduating with a STEM-degree is extremely low at 19.0%, with the second lowest percentage being that of Hispanic/Latinx students (47.4%).
- Focusing on NatSci, the overall 6-year graduation rates have been consistently high (~77%) over the last 10 years. The rates for the 4th and 5th year graduation have been consistent as well (Figure 8).
- Breaking it down by race/ethnicity, we can see that the 6-year graduation rates cohort show a large difference between the white students and the students of color (Table 4).
- Figures 9 and 10 compare the 6-year graduation rates, by race/ethnicity, for students starting in NatSci for the 2008 and 2011 cohorts. For the 2011 cohort, only 36.7% of the students starting in NatSci graduate within the college. From the rest, only 14.3% graduate with a STEM degree, 27.2% graduate with a non-STEM degree, while 21.8% did not graduate from MSU. These numbers are very comparable with those of the 2008 cohort.
- Comparing for the different races/ethnicities, NatSci retains and graduates very low numbers of Hispanic/Latinx (25.5%) and Black (17.1%) (numbers based on the 2011 cohort).
- For Hispanic/Latinx and Black students, most of them are absorbed by other non-STEM-colleges (32.7% and 37.8% respectively), while a third of them don't graduate from MSU (30.9% and 39.0% for Hispanic/Latinx and Black students, respectively; numbers based on the 2011 cohort).
- For International students, most of them are absorbed by other STEM-colleges (57.1%), while 20% don't graduate from MSU (numbers based on the 2011 cohort).
- Figure 11 depicts the NatSci undergraduate graduation rates for the 2003 vs 2013 cohorts, by gender. As shown, female undergraduate students have significantly higher 4-year graduation rates for the 2011 cohort, but the gap closes by the 6th year.

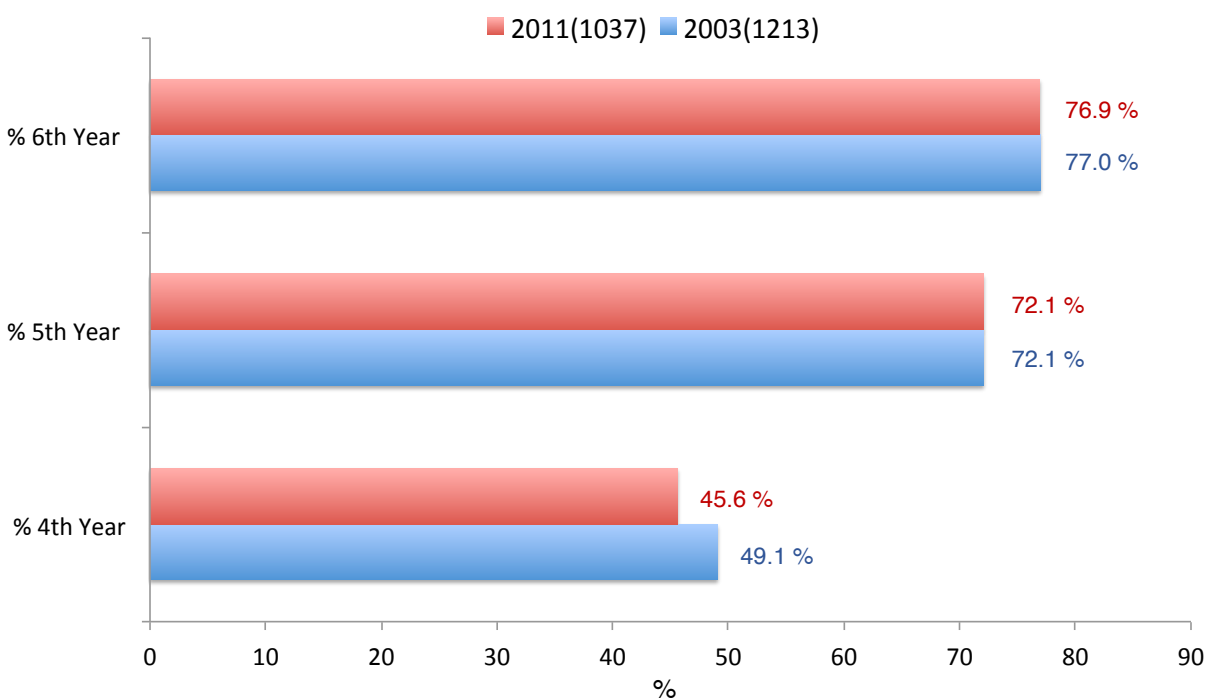
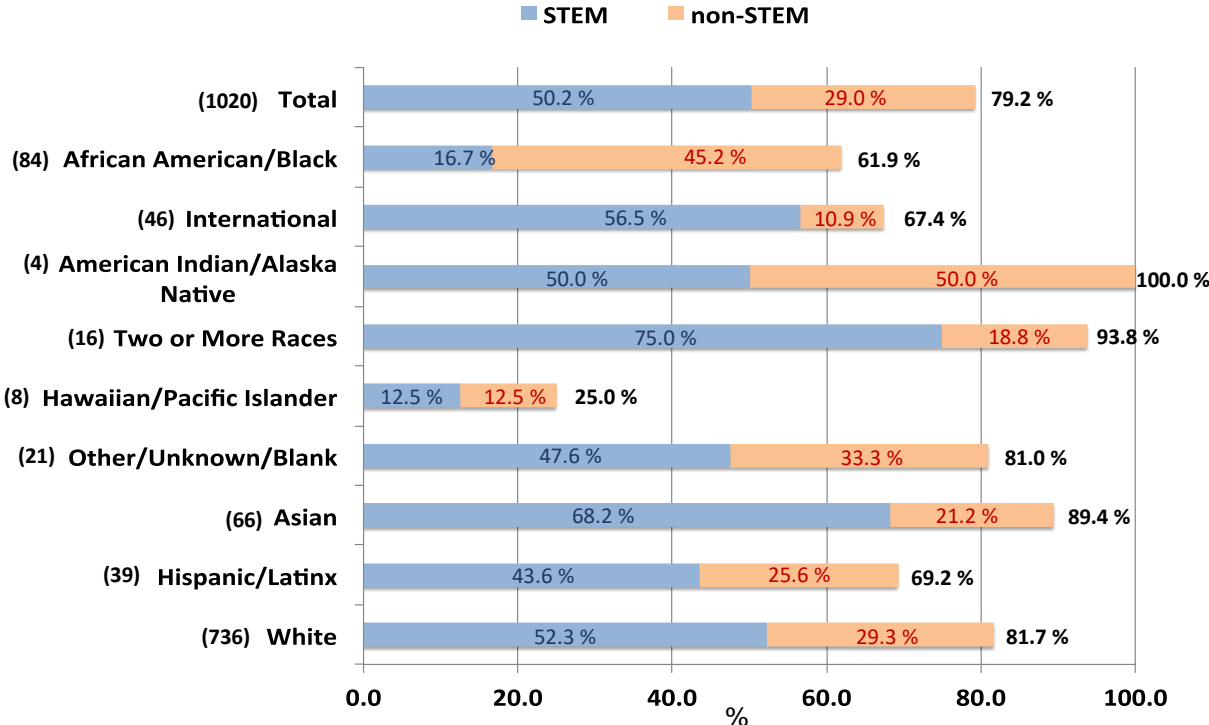


Figure 8. NatSci Undergraduate Graduation Rates, 2003 vs. 2013 Cohort

Table 4. NatSci Undergraduate Graduation, by Race/Ethnicity

		Entering Cohort					10-year Average
		2003	2004	2011	2012	2013	
4-Yr Graduation %	Black	17.8	12.9	14.6	21.0	16.7	17.8
	Hispanic	17.6	27.3	27.3	29.5	36.1	27.9
	International	36.4	30.8	38.6	39.1	50.9	37.7
	White	54.1	51.9	52.2	51.7	57.8	52.6
5-Yr Graduation %	Black	44.6	50.4	50.0	60.0	---	49.4
	Hispanic	50.0	48.5	54.5	50.0	---	52.8
	International	54.5	61.5	72.9	65.5	---	58.0
	White	76.5	75.1	76.2	75.4	---	76.2
6-Yr Graduation %	Black	57.4	62.6	58.5	---	---	57.7
	Hispanic	61.8	60.6	65.5	---	---	63.3
	International	54.5	76.9	78.6	---	---	63.1
	White	80.4	79.6	80.0	---	---	80.0

Six Year Graduation Rates for Students Starting in NatSci (2008 Cohort)



Six Year Graduation Rates for Students Starting in NatSci (2011 Cohort)

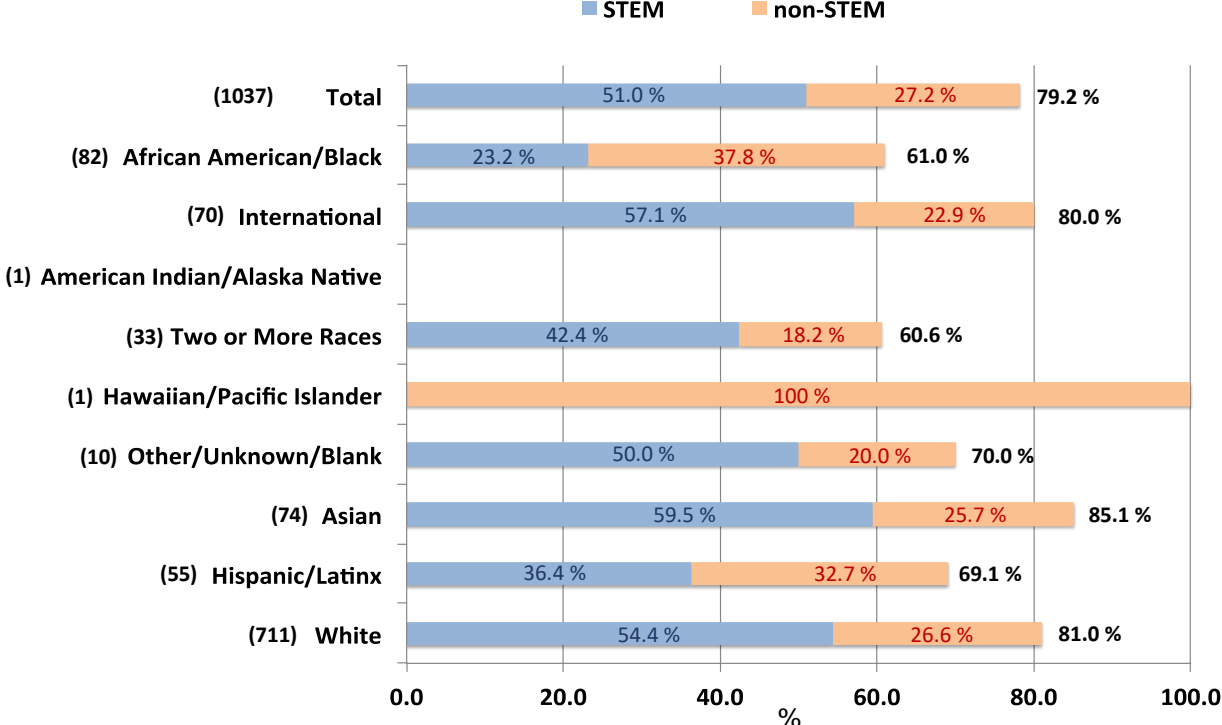
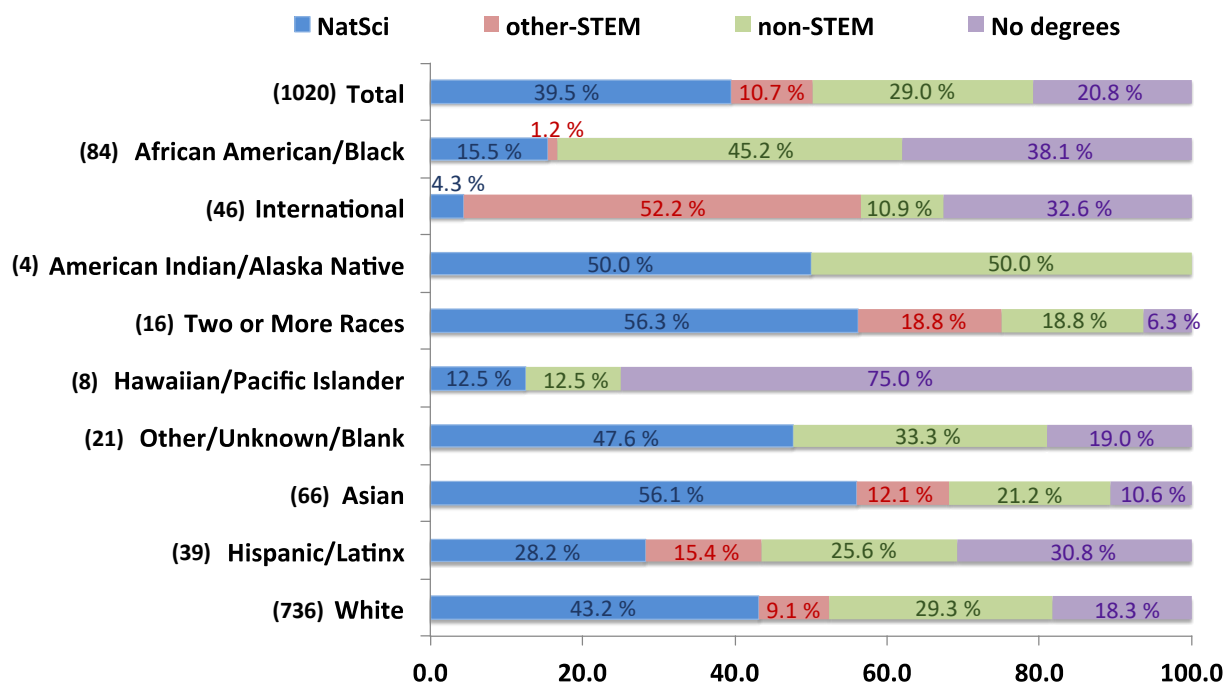


Figure 9. Six-year graduation rates for students starting in NatSci, 2008 and 2011 Cohorts, percentages of degrees in STEM and non-STEM colleges

Six Year Graduation Rates for Students Starting in NatSci (2008 Cohort)



Six Year Graduation Rates for Students Starting in NatSci (2011 Cohort)

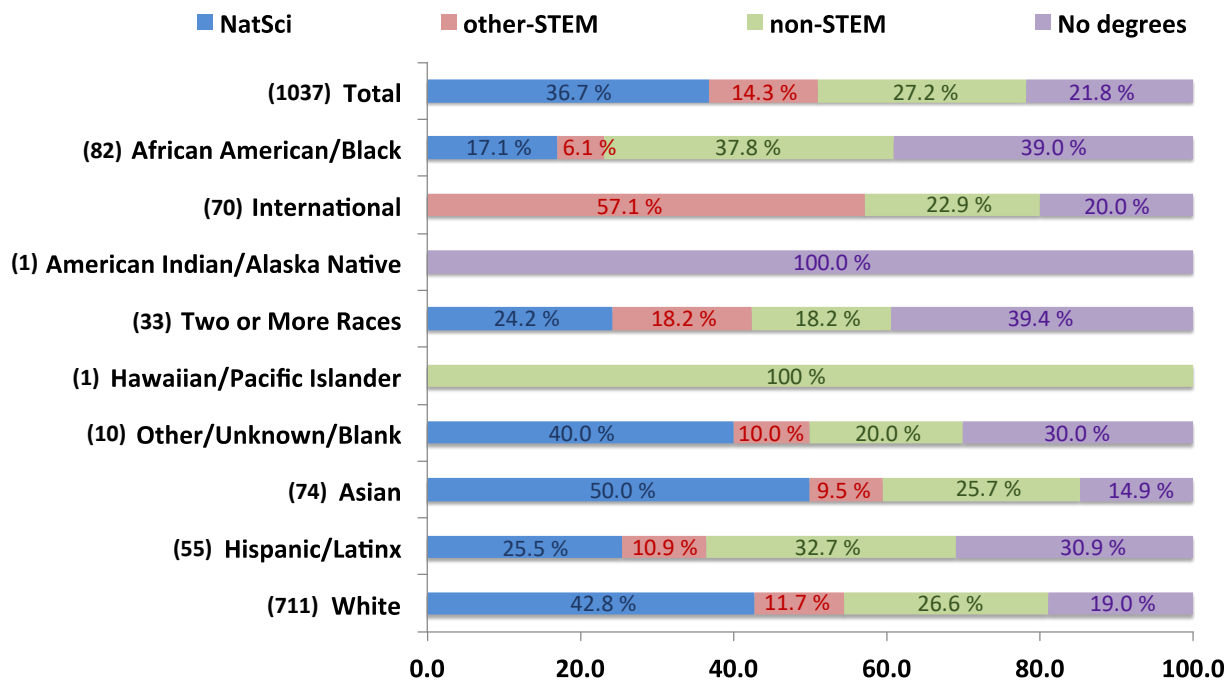


Figure 10. Six-year graduation rates for students starting in NatSci, 2008 and 2011 Cohorts, percentages of degrees in NatSci, other STEM-colleges, and non-STEM colleges

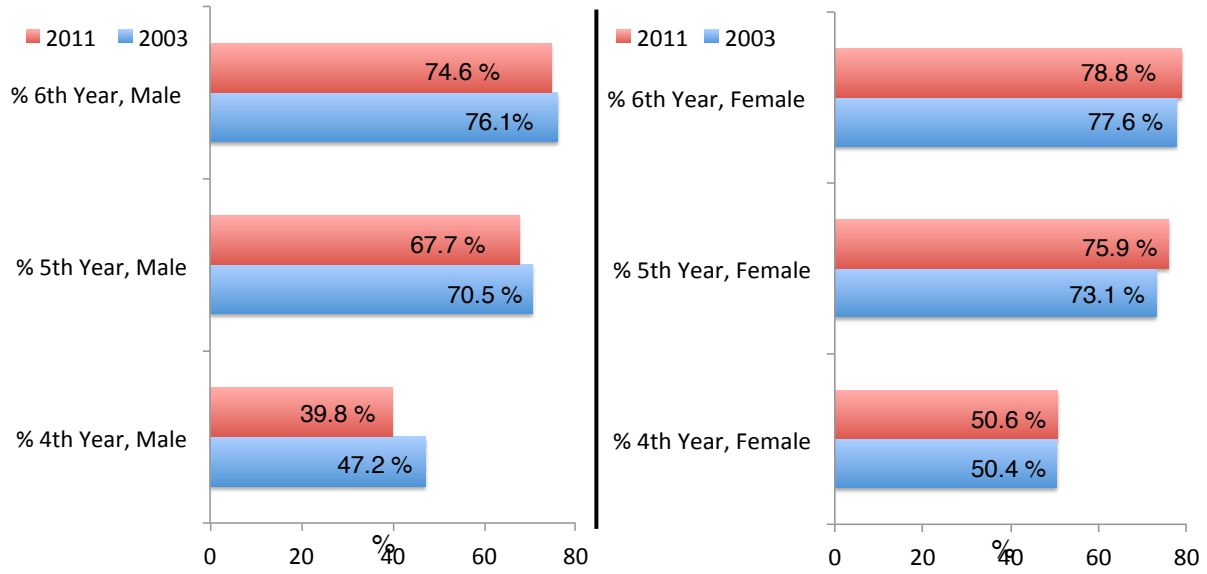


Figure 11. NatSci Undergraduate Graduation Rates, 2003 vs. 2013 Cohort

Degree Conferrals

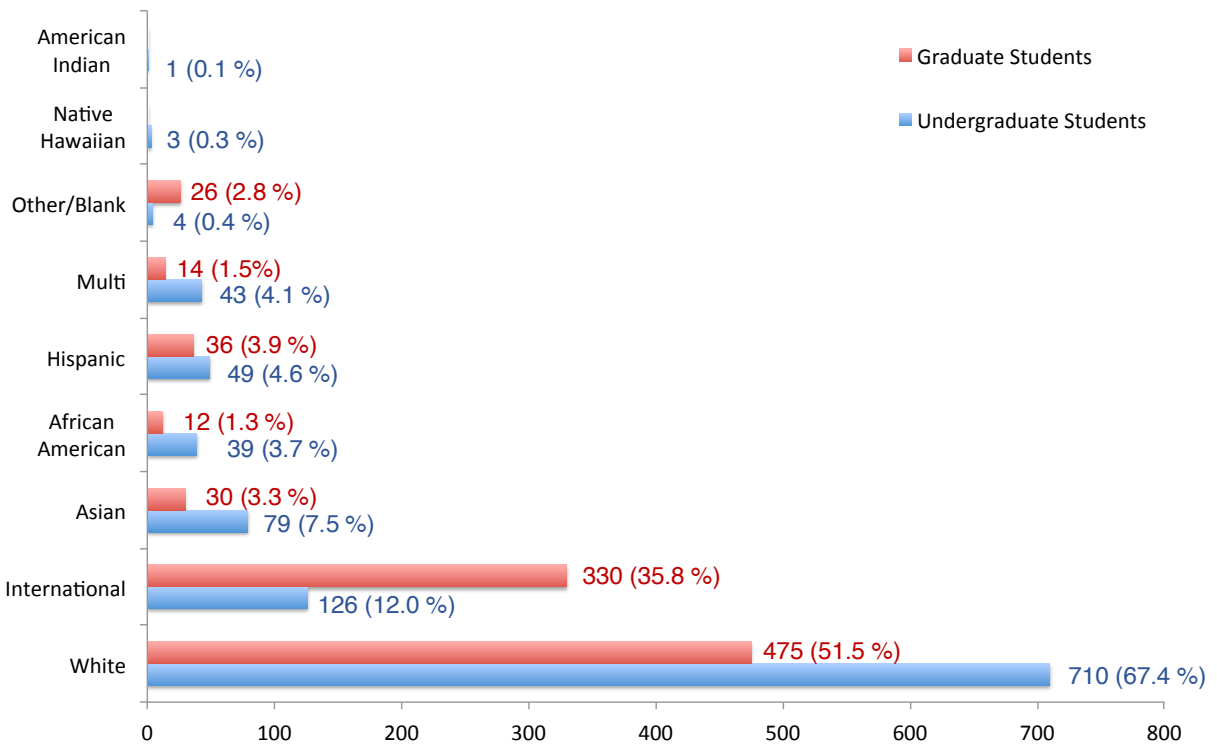


Figure 12. NatSci Degrees Conferred by Race/Ethnicity for 2017-18 academic year

- The NatSci degrees conferred by race/ethnicity for the 2017-2018 year reflect the diversity differences in population between the graduate and undergraduate students at the college. The undergraduate population is much more diverse than that of the graduate students regarding the race/ethnicity of the domestic students. However, the NatSci graduate student population includes a larger number of international students (Figure 12).
- As shown in Figure 2, women are the majority of the undergraduate population (56.2% for the 2017-18 cohort), while they are the minority of the graduate students (38.8% for the 2017-18 cohort). The overall level of degree conferrals by men and women reflect the composition of the corresponding undergraduate vs. graduate student populations (Figure 13). At the baccalaureate level, for the 2017-18 year, 55.5% of the graduates were women, while the corresponding number for PhD degrees is down to 46%.

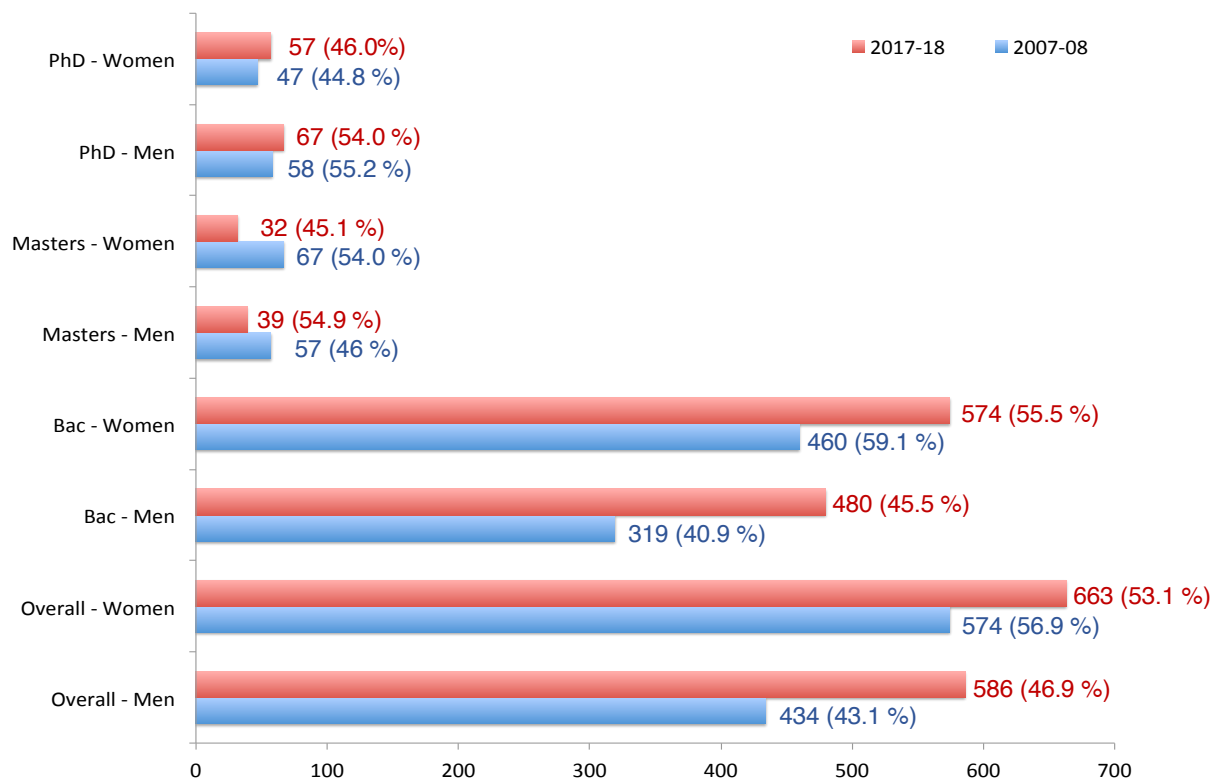


Figure 13. NatSci Overall degrees Conferred by Gender, 2007-08 vs. 2017-18 academic year

Ability

According to MSU Office for Inclusion and Intercultural Initiatives diversity report for 2016-2017, there are various types of permanent disabilities represented throughout campus, between both MSU students and employees (Office for Inclusion and Intracultural Initiatives, 2018, p. 9).

Although detailed numbers for NatSci are not available at this point, NatSci serves 187 students with disabilities who have declared a major within the college by Spring 2018, according to data from the Resource Center for Persons with Disabilities, which represents 12% of the population of students with disabilities at MSU (M. Hudson, personal communication, October 1, 2018).

Salaries

There is not a large difference in the salary range between men and women employees in NatSci for the 2017-2018 academic year (Figure 14). The largest difference is between male and female non-academic staff, where, on average, men's salaries are ~\$80,000 while women's salaries are ~\$55,000. (Considering this employees' category includes people of different ranks and seniority, this large gap might be an artifact.)

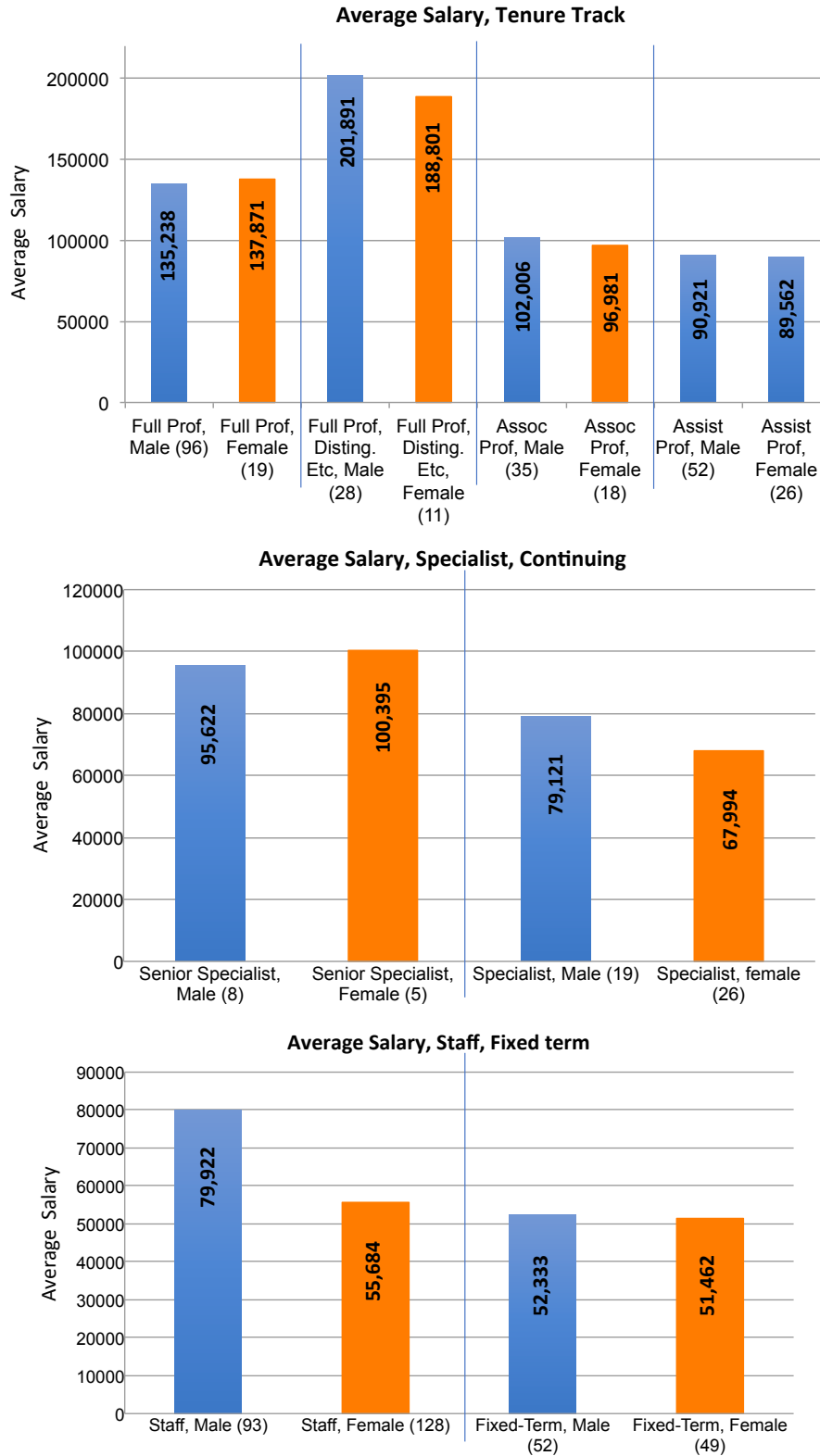


Figure 14. Average salaries for NatSci male vs. female employees of various groups for the 2017-2018 academic year

Future Data Collection Recommendations

The information gathered and reviewed in this report is just a starting point and it does not provide a full audit of NatSci's diversity. Below is a list of recommendation for future data collection to get an even more in-depth review of where the college stands.

Faculty and Staff

- Ability data regarding faculty and staff within NatSci
- Employee gender data beyond binary gender categories

Students

- Ability data regarding students within NatSci
- Transfer student headcounts, persistence rate, graduation rate, and degree conferrals by gender and race/ethnicity, together and separately.
- Undergraduate major by gender and race/ethnicity distribution
- Comparison of gender and race/ethnicity data between the biological and physical sciences for undergraduate and graduate students
- Student gender data beyond binary gender categories

Department Inclusive Initiatives

In order to assess NatSci departmental and program efforts on diversity, equity, and inclusion (DEI), the task force examined departmental/program websites and reached out to chair/program directors via email. Specifically, we inquired as to what current or planned endeavors they had in regard to DEI initiatives. *Only 8 out of the 27 departments/programs responded to our email request.* Examination of departmental/program websites and email inquiries (or results garnered from contacting individual departments/programs) yielded the following:

	Website Resources or Links	DEI Policy or Statement	DEI Committee or Officer	Other*
Departments (n=11)	4/2	2/3	1/3	1/1
Programs (n=15)	4/2	1/2	0/1	4/1
College of Natural Science	1	1	1	0/1

existing / # under development

*Other: includes (but is not limited to) seminar series, tenure policies, etc.

Detailed efforts by department and programs are included in Appendix D.

Most departments/programs contacted, that did not have existing or developing initiatives, indicated that they were waiting for the task force report to formally implement recommended additions/changes to their DEI initiatives and policies.

Council on Diversity and Community (CDC) Initiatives

Held from Spring 2014-Spring 2018, the Pathways to Science speaker series was designed to bring distinguished speakers from various STEM disciplines and various backgrounds to MSU to share their experiences. In addition to giving a scientific talk within the host department, each invited speaker gave a "Pathways to Science" seminar, describing their experiences through their careers during a meeting/luncheon with graduate students and postdocs. Each seminar was co-hosted by NatSci and one of the units.

Over the last two years, the CDC has organized several diversity and inclusion workshops and trainings to address equity issues within the college. In Spring 2016, the CDC hosted a workshop series called *Towards Racial Equity: Creating a More Inclusive Science Community*, which included three workshops: (1) supporting and advocating for students of color within the lens of Critical Race Theory; (2) exploring group identity, privilege, and oppression; and (3) improving mentoring opportunities and addressing the career needs of MSU faculty of color. The CDC also organized a STEM Teaching Essentials Workshop in February 2017 for faculty, advisors, and graduate students from the STEM colleges, called *Learning Narratives from Students of Color in STEM Classrooms* (video link: <https://goo.gl/6fwc3a>). The workshop, which was well-attended (45 participants) and well-received (rated 9.44 out of 10), demonstrated interest in this type of training within the college. In October 2017, the CDC held a follow-up training called, *Creating an Inclusive STEM Classroom: Strategies and Skills Development*, which included practice scenarios to help participants develop skills to handle bias incidents, microaggressions, and discrimination that occur in classrooms. Participants expressed a desire for more skill-building workshops to discuss practical solutions for these types of incidents.

Additional CDC accomplishments included drafting letters in response to the 2016 presidential election and the Muslim travel ban, which then Dean Jim Kirkpatrick shared with students and faculty, as well as organizing a screening of the *Migrations of Islam* documentary in March 2017, followed by a discussion with the producer, Salah D. Hassan, and director, Swarnavel Pillai. In February 2017, the CDC partnered with the Office of Inclusion and Intercultural Initiatives, Lyman Briggs College, and the Charles Drew Science Scholars program to coordinate a Brave Space for the campus community to reflect and connect with one another on stressful and contentious issues. The CDC also created the STEAM4DIVERSITY listserv in October 2016 to disseminate diversity and inclusion information, events, and resources for the entire MSU community.

More recently, at the suggestion of the CDC, NatSci participated as a sponsor for Tarana Burke's April 2018 campus presentation on the #MeToo movement. The CDC also arranged for the college to cover the costs of six CDC members and two Dean's office staff members to attend the February or July 2018 MSU Extension two-day Multicultural Self-Awareness

workshop, led by Dionardo Pizaña and Karen Pace, which focused on understanding differences and raising awareness of prejudice, discrimination, and oppression. In Spring 2018, the CDC worked with Jessica Garcia, from the Office of Inclusion and Intercultural Initiatives, to host the Understanding Implicit Bias Certificate program for participants within NatSci.

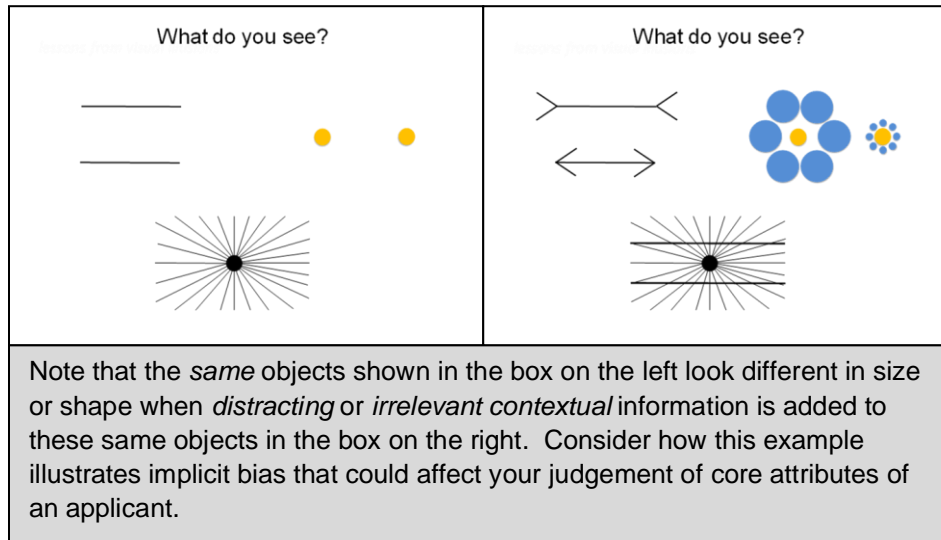
During fall 2018, a new presentation series was started called Diversity in STEM, focusing on hosting a local MSU speaker each semester. Speakers are invited to give a research talk related to diversity-issues within STEM, as well as an evening talk open to community members. Speakers will also hold an informal lunch with undergrads and evening reception with graduate students and postdocs. The Fall 2018 speakers were Dr. Apryl Pooley and Tashmica Torok.

Current NatSci Hiring Practice to Increase Faculty Diversity

NatSci Faculty Excellence Advocate, Cynthia Jordan, meets with all search committees in the college that are seeking to fill positions for tenure-track faculty, fixed-term faculty, or academic specialists who will fill “continuing” positions (often with a teaching and/or advising emphasis). Search committees are required to meet with the FEA and establish an FEA-approved process prior to ad posting. This FEA-approved process includes multi-stage evaluation criteria, narrative of the search process and interview questions. Committees have the option of submitting interview questions for approval at the time a candidate short list is submitted for approval.

All search committee members are required to attend this initial meeting with the FEA regardless of prior “training.” Remote attendance is acceptable but is currently limited to one member per meeting. Goals of the meeting are to solicit conversation around four points of emphasis: 1) Best search practices (Members are asked to talk about what they think are best practices, and what has worked or not worked in the past); 2) Discuss diversity, including its meaning and value and why it is a challenge; 3) Conflict of interest (COI), including what constitutes a COI between search committee members and candidates and what is the appropriate course of action should a COI arise; 4) Implicit bias, how it affects our judgement, and how the human brain is actually wired for *bias* (see visual illusions below) as part of its normal function, and how this results in everyone being biased.





The meeting typically last 75 – 90 minutes, largely driven by what the FEA observes is candid discussion around the topics listed. The discussion is guided by a power point developed by FEA Jordan which has since served as a template for several other colleges. The

FEA has limited contact with the committee after the initial meeting and the required documentation is approved, although an increasing number of search committee Chairs contact the FEA at various stages in the search soliciting advice (i.e., the FEA is increasingly perceived as a resource).

Perceived strengths of the current system:

- Requirement that all search committees meet with the FEA to discuss best search practices. The initial search committee meeting increases faculty awareness about key challenges around conducting a transparent, accountable and equitable search process.

Perceived weaknesses in the current system:

- The FEA has no formal training in HR policies and practices
- The FEA was not provided with any formal guidelines in the college regarding their “regulatory” role in the search process
- The FEA has little or no authority to enforce best search practices, especially when the search and/or unit Chair is uncooperative
- The FEA does not have a clear reporting structure and support system
- The FEA is not part of the decision-making process regarding what searches are approved and how building excellence through diversity is a core mission for all searches
- The FEA has no contact with any of the job candidates at any stage
- Search committee members lack sufficient formal training on critical topics, including:
 - implicit bias
 - understanding diversity
 - strategies for building a diverse community
 - how to write job ads to attract diverse applicants
 - how to reduce bias during evaluation of candidate portfolios
 - How to attract, and interview candidates
 - How to support and retain faculty
- Very little accountability regarding the search process and whether decisions and outcomes are justified and reflect a good and equitable process

- There is no knowledge about whether the approved *written* search process and evaluation criteria have been followed

2012 CDC Report on Graduate Student Recruitment and Retention

During the 2011-2012 academic year, the NatSci Council on Diversity and Community (CDC) worked to create a report on the state of recruitment and retention of underrepresented students into graduate programs entitled, "[*Exploration of Recruitment and Retention in the College of Natural Science at Michigan State University.*](#)" This report was completed and submitted to the dean of the college in August 2012. We present a summary here of the findings and recommendations from this document and discuss whether the college has succeeded in addressing these recommendations.

When considering the state of undergraduate and graduate recruitment and retention of students, the 2012 CDC Report found the following:

- The 6-year graduation rates for underrepresented students were ~20% lower than their non-underrepresented counterparts.
- Retention of NatSci majors to their junior year was ~10% lower for underrepresented students.
- When considering gender, the enrollment of graduate students within graduate programs varied substantially between the biological sciences and the physical sciences. The biological sciences enrolled disproportionately more female students than male students, while the physical sciences enrolled disproportionately more male students than female students.
- Attrition within graduate programs was comparable for both males and females, although attrition rates for males were noticeably higher than females in the biological sciences.
- Enrollment and, consequently, attrition information for underrepresented minorities in the graduate programs in NatSci were too low to provide meaningful insights into any possible trends. This, itself, points to a problem with the recruitment of underrepresented students in NatSci graduate programs.

When reviewing the challenges NatSci faces in recruiting and retaining underrepresented students into graduate programs, the 2012 CDC Report identified the following:

- *Funding:* Recruiting qualified applicants requires financial support that is competitive with other institutions and covers multiple years of study. This includes offering fellowships and ensuring sufficient research assistantships and teaching assistantships.
- *Faculty and Department Support:* Few departments have made committed efforts to increase the diversity of their programs. This may be due to a lack of interest or a lack of time for current department faculty.
- *Geography:* Many underrepresented students live in regions outside of Michigan and enrolling at MSU requires leaving familial support systems and adjusting to a new climate and a new community.

The 2012 CDC Report also explored the programs aimed at increasing diversity already in place at MSU, of which there are a handful, as well as programs that exist at other institutions and sought to identify what aspects of these programs make them successful. They reported the following to be important components of effective diversity programs:

- *Funding*: Successful programs are often funded by government agencies. Funding is critical for ensuring the longevity of the programs and promoting student interest. Students in these programs are often provided financial support to cover things like tuition waivers, health insurance, professional development, or housing costs.
- *Mentoring*: Mentoring can be an effective way to support students in diversity programs. Faculty mentors need to regularly engage with their mentees and should be well-informed about the program requirements and serve as an active advocate for the success of their mentee. Peer mentoring can also be beneficial to program participants as peers can often discuss shared experiences or concerns that may arise.
- *Faculty Engagement*: In order to recruit underrepresented students, faculty need to be engaged in the process. Effort should be made to contact competitive minority applicants, make them feel welcome at MSU, and answer any questions they may have. If faculty are not committed to diversity efforts, those efforts will be less likely to succeed.
- *Research Experience*: Building opportunities for research or for developing research-related skills can help prepare students in diversity programs for their future career efforts. These opportunities may take the form of either formal or informal coursework.
- *Professional Development*: Providing students with professional development opportunity is another important component of programs that support successful students.

Finally, after reviewing the state of the graduate programs within NatSci, the 2012 CDC Report created a list of three main recommendations for how the college might better address the underrepresentation of marginalized groups with the college:

1. *Undergraduate Initiatives*: Many underrepresented students are underprepared for college, especially in math and the sciences. MSU should develop programs to support and assist these students to increase their chances for success. Transition courses with well-defined goals and a sophomore research seminar are two avenues for supporting these students.
2. *Faculty Involvement in Recruitment*: NatSci should stress the importance of diversity with all department chairs and graduate directors and faculty should be provided with information about current diversity initiatives and student recruitment programs. These programs should be discussed at new faculty orientations. Departments should ensure that faculty are involved with every step of the recruitment process including active and clear communication with underrepresented candidates and timely information regarding funding to be competitive with other programs. NatSci should incentivize diversity, equity, and inclusion and the recruitment and retention of underrepresented students, especially for pre-tenured faculty.
3. *Utilizing MSU Resources*: Graduate student recruitment should focus on populations already at MSU (e.g. McNair Scholars, BEACON SROP, etc.) and faculty should be involved in existing recruitment efforts (e.g. Alliances for Graduate Education and the

Professoriate (AGEP) Alliance fall conference). NatSci should collaborate with the Graduate School and programs like AGEP to improve their recruitment efforts.

Since these recommendations were first made, there has been some progress made in certain areas. In particular, efforts have been made to address the “Undergraduate Initiatives” recommendation through curriculum reform (as described in the “Curriculum Updates” section of this report). The Graduate School has been also monitoring the representation of marginalized students within its programs and between 2014 and 2017 there has been some noted success in recruiting underrepresented students into certain graduate programs. Specifically, the Department of Microbiology and Molecular Genetics, the Neuroscience Program, and the Department of Physics and Astronomy have shown gains in students from some underrepresented populations. However, the overall number of such students within the NatSci graduate programs remains quite low (see Appendix C tables 13-16). The efforts that are underway within NatSci and its various departments/programs that include, but are not limited to the following:

- Encouraging departments to use “holistic evaluations” for graduate student applications, including an emphasis experiential criteria and cautioning against the use of the GRE as an admission standard.
- Identifying students from Summer Research Opportunities Program (SROP), encouraging them to apply to graduate programs at MSU, and making quick decisions on their applications so that they are not lost to other institutions.
- Setting up lunch events with SROP students and graduate directors to make connections, dispel myths about graduate school, and discuss financial details.
- Sponsoring personnel to attend conferences for underrepresented minorities to recruit them into SROP and graduate programs.
- Identifying underrepresented students for university fellowship awards (e.g. the University Enrichment Fellowship) and looking at markers beyond GREs, including signs that students have overcome barriers or adversity.
- Creating new research experience for undergraduates (REU) programs that specifically partner with institutions that service minority populations.

Although there has been some progress made towards these recommendations, the summary of this report is also a cautionary tale, since this report notes similar situations and makes recommendations that are not altogether different from the recommendations our current report has. Therefore, we also recommend regular assessment of institutional and individual efforts and accomplishments, and a continued investment of resources and funds. The changes we would like to make are not made with one-time emergency actions. They require sustained, conscious institutional commitment to the goals of inclusion.

SIRS review

Based on concerns that female faculty, international faculty, and faculty of color receive biased feedback on student evaluations (Lazos, 2012), Sekhar Chivukula, while in his role as NatSci Associate Dean of Faculty Development, recommended that the NatSci Faculty Advisory Council (FAC) review the current Student Instructional Ratings System (SIRS) form (see

Appendix E) and consider making updates. A FAC subcommittee was formed, which decided that the current SIRS are not very useful either for the instructors or for departments. The subcommittee discussed that the current form was more of a popularity contest than an assessment of teaching and learning.

A new tool was designed (see Appendix F), which removed the number ratings, which seemed subjective, and replaced them with more straightforward yes/no questions, which seemed like they would be less biased, and a couple of free response questions. The updates also included a smaller set of questions to help the instructor focus on where they could make improvements. Although the FAC approved the new SIRS form at its meeting on April 12, 2018, since Sekhar Chivukula left his position in the college to become the Associate Provost for Undergraduate Education, the document was not fully implemented.

Status of Recommendations Underway

Bylaws Changes - CDC to a Standing DEI Committee

As an adhoc council, the Council on Diversity and Community (CDC) does not have the same authority as a permanent NatSci standing committee. Since not every unit is required to have a member on the CDC, college-level and unit-level efforts are not well integrated, which means that there is little collaboration on widespread diversity initiatives. Many faculty and staff are not even aware that the CDC exists. At the NatSci Faculty Advisory Council (FAC) meeting on November 8, 2018, we proposed that the Diversity, Equity, and Inclusion Advisory Committee (DEIAC) be considered for inclusion as a Standing Committee of NatSci. This proposed college-level Diversity, Equity, and Inclusion Advisory Committee would replace the current CDC. Voting on the proposed bylaws change is expected to take place before the end of spring 2019.

The main change will be that the new committee will have representatives from all the units in the college, allowing for a bigger impact and homogeneity in the transmission of the matters addressed in the committee. The focus of the DEIAC shall be to address persistent, systemic, and emergent issues within the following six focus areas identified by the MSU Office for Inclusion and Intercultural Initiatives to guide diversity, equity, and inclusion initiatives for all MSU units:

1. Leadership
2. Access, Retention, Advancement (applicable to faculty, staff, and undergraduate and graduate students)
3. Research
4. Curriculum (formal and informal)
5. Campus Climate
6. External Engagement

Initiatives within these areas, implemented with an accountable and transparent decision-making process, will focus on creating a supportive and welcoming environment where all NatSci students, faculty, and staff can pursue academic and professional success.

See Appendix G for an overview of the composition and function of the proposed NatSci Diversity, Equity, and Inclusion Advisory Committee. This proposed draft follows the format used by NatSci and is loosely modeled after the NatSci FAC bylaws.

College Climate Survey

Campus climate is a way of describing the tendency of faculty, staff, administrators, and students to hold certain perceptions, expectations, and standards around issues of diversity and/or respect for individuals (Rankin & Reason, 2008; Hurtado et al., 2008). Studies suggest that experiencing prejudice and discrimination in the classroom and on campus are main contributors toward students of color withdrawing from college (Cabrera et al., 1999). Tinto's (1993) work shows that students are more likely to persist at universities if they are integrated into the academic and social communities at the university. Increased positive academic experiences (such as validation from faculty and peers and increased sense of belonging) lead to increased persistence and graduation (Hurtado et al., 2012; Strayhorn, 2012).

By addressing campus climate issues within NatSci, we seek to create more positive, inclusive experiences for all our students, especially minoritized students, leading to increased persistence and retention. This will help the college contribute to MSU's institutional goal to increase the overall undergraduate 6-year graduation rate to 82% and reduce opportunity gaps below 15% by 2020. To directly address disparity issues, we must identify barriers that lead to inequity, understand the experiences of minoritized groups, and identify solutions to create equitable experiences for all Spartans.

Previous endeavors addressing MSU campus climate

A university-wide undergraduate campus climate survey was conducted in 2016, and while student respondents generally felt comfortable on campus and in classrooms, the campus experience was not the same for all MSU students. According to Paulette Granberry Russell's presentation of preliminary results at the Neighborhood Student Success Summit on May 10, 2016, 29% of surveyed students reported that they had experienced exclusion, and exclusion based on race was reported most frequently. Black students of all genders and women from all other races experienced more exclusion than other groups. Among surveyed students, 35.5% had observed exclusionary conduct, with 10.1% observing exclusionary behavior carried out by faculty members.

In response to the Nassar incident, Interim Dean Cheryl Sisk asked NatSci units to organize town halls in February and March 2018 to listen to the concerns and ideas of students, staff, and faculty. Participant feedback echoed a number of the 2016 survey findings that community members often feel safety and inclusion are disregarded at MSU. Students felt that the recent case highlighted that despite protection policies in place, not everyone is, or feels, safe. One student expressed disappointment that many were acting as though the reported sexual assault at MSU was unique because in reality, these incidents are not so rare. The student felt that this incident only gained so much attention because a university employee was involved and it threatened the campus's public image.

Another NatSci undergraduate town hall was held on April 24, 2018 to understand the student experience in regard to advisors, instructors, and administrators. Students acknowledged that advisors were well informed about MSU requirements, career-related opportunities, and strategies. However, students also reported sometimes feeling penalized (rather than helped) when seeking information about suitable next steps in their academic plans or professional development. Similarly, many instructors come off as condescending and uncaring to students who do not maintain at least a 3.5 in the course.

The town halls allowed participants to recommend ways to improve campus climate, such as the creation of this taskforce to identify priorities and recommendations for addressing them. Town hall attendants also expressed interest in 1) clarifying resources available on campus for incident reporting, so the burden of reporting is not on the survivor, 2) including an inclusion statement in course syllabi, 3) identifying the climate within the college through an up-to-date climate survey, and 4) having a medium for collecting comments anonymously.

Identifying current climate needs and how to move forward

In response to town hall recommendations and to address concerns raised in the 2016 campus climate survey, the NatSci Task Force on Inclusive Initiatives, with input from the Council on Diversity and Community, developed a survey with the MSU Office of Survey Research (OSR). The survey was conducted February 20 – March 20, 2019 by OSR to collect information from the greater NatSci community to gauge the effects of campus climate on student and employee success.

The survey will assess general satisfaction within NatSci; feelings of belonging, safety, respect, and value; and how common incivility, bullying, and sexual harassment are within the college. The survey will also measure how individuals rate the climate, as well as how members of identity groups rate the climate for other groups. Additional assessments include: 1) the prevalence of bias/discrimination (experienced or witnessed), 2) the level of familiarity and comfort with mechanisms for reporting these experiences, and 3) the interest of staff, faculty, and students in attending diversity training.

Survey questions were derived and adapted from the 2016 MSU campus climate survey, past surveys conducted by OSR, [similar surveys conducted by Rankin and Associates for the University of California schools](#) (i.e. [UC Berkeley](#)), the [James Madison College racial climate survey](#), and the [University of Michigan campus climate surveys](#). Respondents' responses will be aggregated by OSR to maintain confidentiality. In order to gain a broader understanding of the climate at MSU, four versions of the survey were created, targeting: 1) faculty and teaching specialists; 2) staff, academic specialists (with roles other than teaching), and postdoctoral researchers; 3) graduate students; and 4) undergraduates with NatSci majors. Coordinate majors in Lyman Briggs and a sample of 5000 undergraduate students with majors outside of NatSci who completed NatSci classes in spring and fall 2018 were also invited to complete a subset of the questions on the undergraduate survey.

The surveys were designed to take approximately 15-20 minutes to complete. The surveys also provided space and unlimited time for responders to expand on their experiences, if desired.

Advertisement strategies for the survey included flyers in high traffic areas (e.g., hallways, classrooms, offices); e-mails from Dean Phillip Duxbury and Associate Dean Cheryl Sisk to all faculty, staff, and students and from advisors to undergraduate students; and announcements on NatSci social media. When OSR completes the climate survey report in late spring/summer 2019, their report will be posted to the new NatSci diversity website, so that it is available for anyone who would like to read it. By surveying the campus climate in this way, we hope to discover areas of concern within the college and generate ideas for creating more equitable experiences for all faculty, staff, and students, so that they can be more successful and enjoy their time at MSU.

College-level Diversity, Equity and Inclusion (DEI) Position

One of the biggest challenges in advancing diversity efforts within NatSci has been that this work has not been the explicit responsibility of anyone within the college. Establishing a full-time diversity, equity, and inclusion (DEI) position within the college will show a clear commitment to these issues which is currently lacking. Without a diversity champion to raise the importance of embedding DEI issues within all college initiatives, it is very easy for DEI initiatives to be seen as “add on” programs that are not central to the college’s mission.

The Task Force strongly believes that the college will be unable to advance DEI efforts college-wide without an investment in this type of position. An advanced degree in areas such as social work, higher education, student affairs, educational leadership, or social justice education is desirable for this position. Suitable candidates should have a minimum of five years of demonstrated success in implementing and assessing inclusive initiatives within the field of higher education in areas such as recruitment and retention of underrepresented faculty, staff, and students; development of mentoring programs; inclusive classroom practices; improving campus climate; faculty development; and conflict resolution and/or restorative justice practices. We suggest that this position is filled at director, assistant dean, or associate dean level and that the individual in this role reports directly to Dean Phillip Duxbury.

The individual in this role informs the Dean on diversity-related issues and works with the Council on Diversity and Community (proposed bylaws to create a Diversity, Equity, and Inclusion Advisory Committee) and departments within the college to lead the development of initiatives designed to advance diversity and equity within individual departments as well as across the whole college. The position provides leadership for incorporating diversity, equity, and inclusion principles through all areas of the College. This individual will lead initiatives and coordinate integrated approaches to increase diversity and inclusivity, create a more multicultural environment for faculty, staff, and students within units and at the college level. The individual in the DEI position will also network with diversity partners across MSU including, but not limited to, diversity offices and positions within other STEM colleges, the Office for Inclusion and Intercultural Initiatives, the Council on Racial and Ethnic Minorities (CoREM), the Office of Cultural & Academic Transitions (OCAT), the LBGT Resource Center, the Resource Center for Persons with Disabilities, and the Office for International Students and Scholars.

The successful Director, Assistant Dean, or Associate Dean of Diversity, Equity, and Inclusion will possess the following attributes:

1. Leader with a broad knowledge of and experience with issues of multiculturalism in higher education; well-acquainted with the scholarship of diversity and inclusion including a) structural understanding of power, privilege, and difference, b) systemic racism and sexism in academia; and c) the educational impact of diversity.
2. Promotion of issues of social justice and diversity as fundamental aspects of academic excellence for faculty, staff, and students. Demonstrated leadership in the design, implementation, and evaluation of initiatives that create and sustain an inclusive environment (including recruitment and retention, access, faculty hiring, mentoring and promotion, and equity and diversity in curriculum). Commitment to advocate for these initiatives when faced with challenges.
3. Dedication to the core values and mission of MSU as a land-grant university where people matter. Proven champion of inclusiveness who will further MSU's goal of fostering a culture of opportunity for all scholars to bring their passion and talent to join a vibrant, intellectual community built on mutual respect.

Goals for the first year of the position could include:

- Conducting focus groups with students, staff, and faculty as a follow-up to the climate survey.
- Collaborating with units and help them set DEI goals that align with the college DEI strategic plan.
 - Develop accountability measures for meeting these unit-level inclusion goals, which will be assessed annually.
- Setting up a system for annual evaluation of college and unit-level diversity data for faculty, staff, and students.
- Collaborating and sharing resources and best practices with diversity offices and diversity committees in other colleges, the Office of Inclusion, the Lesbian, Bisexual, Gay, and Transgender Resource Center, the Office of International Students and Scholars, and other MSU units.
- Evaluating and assessing the pilot DEI training program (see Training in Recommendations Underway) and creating a plan for follow-up trainings based on problem areas identified in the climate survey and focus groups.
- Working with Faculty Excellence Advocates or other identified individuals to implement best hiring practices to increase faculty and staff diversity (see Future Recommendations below).
- Working with the Office of Admissions and individual departments on the development of recruitment programs to increase the diversity of undergraduate and graduate students.
- Evaluating promotion and tenure policies and recommending changes to recognize contributions to diversity, equity, and inclusion in all promotion and tenure decisions.
- Evaluating faculty and staff annual reviews and recommending changes that could include attendance at DEI trainings annually, as well as commitment to inclusive excellence (as demonstrated by setting and meeting annual diversity and inclusion goals).
- Evaluating opportunities to partner with other MSU units such as DOW STEM Scholars in recruiting undergraduates from high schools in Detroit, Flint, Lansing, Benton Harbor,

Kalamazoo, Saginaw, Pontiac, Highland Park, and other urban areas to increase underrepresented student recruitment (Liberate MSU, 2015).

Diversity, Equity, and Inclusion (DEI) Training

Background

One of the Task Force's primary recommendations to advance equity and inclusion within NatSci is to develop ongoing training for all NatSci faculty, staff, and students to build awareness of diversity and inclusion issues. Because our college is large, training of this scope will require developing a core group of facilitators made up of faculty, staff, and academic specialists from within NatSci to lead these trainings. The NatSci CDC was awarded a Creating Inclusive Excellence Grant (CIEG) from the Office of Inclusion and Intercultural Initiatives for a proposal called *Building Capacity for Diversity, Equity, and Inclusion Training in the College of Natural Science*. The purpose of this training initiative, which will be carried out in spring-summer 2019, is to develop a day-long training on cultural competency, group identities, power and privilege, and the four levels of oppression that can be offered to units and programs within NatSci, as well as to develop a NatSci facilitation team to lead this workshop and future diversity and inclusion trainings for the college.

The college has hired Karen Pace from Pace 4 Change and Dionardo Pizaña from MSU Extension to develop this training and to facilitate the pilot trainings and the train-the-trainer sessions. For more detailed information about the training, please see the training proposal timeline in Appendix H.

Training Facilitators

Dionardo Pizaña is the diversity and personnel specialist for MSU Extension. He has over 25 years of experience developing, teaching, and facilitating diversity education programs through Michigan State University Extension, Adrian College, and Siena Heights University. He is a nationally-recognized, multicultural consultant, speaker and trainer. Dionardo's work as an activist and educator is grounded in his conviction that deep and lasting institutional change requires an equally strong commitment to "working on oneself" while nurturing authentic relationships across difference.

Karen L. Pace worked as a program leader, educator, and facilitator with MSU Extension for over 30 years. Her work focused on youth development, and social and emotional health while addressing issues of bullying, bias, harassment, and dating violence. She is currently the director of Pace 4 Change—an organization providing education and consulting for a wide variety of groups around issues of diversity, cultural competency, and social justice education. Karen has worked as part of diverse teams for more than 20 years to create efforts that address root causes of complex issues at the personal, interpersonal, institutional, and cultural levels.

Dionardo and Karen have partnered on for more than twenty years on initiatives to engage coworkers, organizational leaders and community members in Michigan and across the country

in discussions related to diversity, multiculturalism, authentic relationships across differences, cultural competence and other social justice topics.

Training Assessment and Evaluation

Participants will be asked to complete a retrospective survey for assessment after each training is completed. In the retrospective survey, participants will be asked to indicate their responses to statements as they would have answered before they completed the training and how they would answer now that they have completed the training. The type of survey instrument was strongly recommended by Karen Pace because participants in DEI trainings often “don’t know what they don’t know.” She has found that in comparison to pre and post surveys, retrospective surveys more accurately reflect changes in participants’ awareness, feelings, attitudes, knowledge, and actions that occur due to attending trainings.

Comparing responses in the before and after assessment sections of the surveys will allow us to evaluate if the training has led to 1) increased understanding of prejudice, discrimination, and oppression, 2) appreciation of how membership in target and non-target groups shapes experiences of faculty, staff, and students, and 3) awareness of the challenges faced by minoritized students, staff, and faculty at MSU. Furthermore, we will evaluate if participants have increased their awareness of their social identities, understand which of their identities give them privilege, have developed greater awareness of their unconscious biases toward individuals from different identity groups, gained awareness of how they learned about human differences, and have developed concrete skills to work toward greater equity.

These assessments will be used as a mechanism for summative assessment of our success in achieving the goals of the trainings, and as formative assessment for improvements that can be made to future sessions. The assessments will also provide participants with the opportunity to request additional training in specific areas that they believe would benefit their department or the college as a whole. We will use these requests to help inform the development of new training sessions.

In addition to collecting information about our success in achieving our training objectives, we will also collect anonymous information about the efficacy of our trainers so we can identify ways in which training sessions could be improved. Debriefing sessions will be held with facilitators so they can identify elements of the trainings that are effective and areas for improvement. Not only will we work internally to interpret the results of our assessments and identify mechanisms for growth and improvement, but we will also consult with experts like Dionardo Pizaña and Karen Pace to ensure that our efforts to address any deficiencies are maximally effective. Feedback on facilitation during the train-the-trainer sessions, as well as during the debriefing sessions will be important components in developing a highly qualified, competent team of NatSci facilitators, ready to provide high-quality equity and inclusion training for the whole college.

Importance of Ongoing Training

Assessment results from the series of cultural competency trainings that will be offered in spring and summer 2019 will be used to inform future offerings as well as the design of new trainings. The facilitators will work with the CDC and the Diversity, Equity, and Inclusion (DEI) Director (if/when hired) to provide guidance to the Dean Phillip Duxbury to foster a successful and sustained effort toward promoting equity and inclusion, with a focus on the following diversity initiatives:

1. Developing training for new and current NatSci faculty, staff, and students based on the results of the previously mentioned climate survey to target specific issues that are identified within the current college climate.
2. Working with the Office of Inclusion and Intercultural Initiatives, and the Academic Advancement Network to develop and offer new trainings tailored to the needs of units within NatSci by leveraging the NatSci facilitator team. Examples include training uniquely applicable to academic advisors, training for addressing issues that are unique to STEM (e.g. large classroom sizes and faculty misconceptions that diversity issues are not relevant to instruction in STEM disciplines), and training for graduate teaching assistants and undergraduate learning assistants.

Once the training of new facilitators is completed, it is imperative that the college continues to support this facilitation team in the development of new trainings to address the needs of individual units within NatSci.

College Website

In considering the outward-facing message that NatSci sends its constituents, one of the first resources that individuals may look to is the website for the College. NatSci's current website offers its visitors only a single tab with rather limited links to diversity-related topics. To better understand how this resource could be improved, we reviewed several other MSU college and program websites to assess their diversity- and inclusion-related content. Our goal was to develop a new website that more effectively showcases NatSci's diversity-centered opportunities and initiatives.

Assessment of diversity-related content on other websites of MSU colleges and programs

The 14 websites we analyzed were: Eli Broad College of Business (Broad), College of Agriculture and Natural Resources (CANR), College of Arts & Letters (CAL), College of Veterinary Medicine, College of Communication, Arts & Sciences, Education, Engineering, Honors College, International Studies and Programs, Law, Lyman Briggs, Music, NatSci, and College of Social Sciences (CSS). It is important to note that this is not an exhaustive list of MSU colleges and programs, and that the websites of any given college or program are not

necessarily up to date. As a consequence, the websites we reviewed may not be wholly representative of current diversity-related efforts throughout MSU.

The websites of the 14 colleges/programs we reviewed vary significantly in their reporting of diversity-related resources. For example, and importantly, only a subset of them identify a faculty diversity and inclusion committee, and these committees vary in size and composition. Here, a notable difference is that some committees are solely composed of faculty whereas others include student and/or staff representatives. Approximately half of the websites do not advertise anything resembling a faculty diversity and inclusion committee at all. However, many of these websites do identify a high-level person, often at the assistant dean level or higher, with a designated role in addressing diversity- and inclusion-related issues. The Programs or colleges lacking such persons, or at least failing to make their existence public online, were Education, the Honors College, Lyman Briggs, and (most relevant to this report) NatSci.

We also found variation in the materials that the reviewed websites showcase as pertinent to diversity and inclusion. Featured activities range from one-off events to sustained efforts, and include climate surveys, speaker series, standard reviews of hiring, retention, and promotion practices, summer student residential programs, workshops for faculty and students, funding and support for student/peer groups. We have considered the curation of such resources carefully in planning a new NatSci webpage that will focus specifically on diversity and inclusivity. Our intention for the new, dedicated website is to communicate and strengthen NatSci's commitments to diversity, and also to catalyze engagements with website visitors.

Vision and timeline for a forthcoming, dedicated NatSci-Diversity website

Although the current NatSci website already has a link for diversity-related topics, there is a need for a more comprehensive NatSci-diversity-related core. NatSci's CDC is currently designing a new website (<https://natsci.msu.edu/diversity-equity-and-inclusion>) that will launch in spring 2019. Our overall goal is for the new website to act as a central hub where any member of the NatSci family can easily access information and resources related to college- and university-wide data, events, initiatives, and training opportunities on diversity and inclusivity related topics. We also want NatSci's diversity-related priorities and activities to be visible to individuals outside of the college, including other colleges and universities, prospective students, staff, and faculty, and the local community. Our vision is that the new website will fulfill the following basic roles:

1. NatSci – Diversity and Inclusivity Communication Core

The newly designed NatSci-Diversity website will act as a platform for the college to publicize its mission statement regarding its commitment to diversity and inclusion. Some parts of the current website will be maintained (CDC Mission Statement, Ideas for Inclusive Language for Course Syllabi and Inclusion Statement for STEM Syllabi); this content will be updated and expanded as needed following the new website's launch. In addition, several new links will be added to reflect and highlight university, college and unit initiatives that currently include the Task Force formation, the Charles Drew Science Scholars, the DOW STEM Scholars and the impending Climate Survey, to name a few. Furthermore, we envisioned a more interactive website which will allow the NatSci Dean and/or the NatSci Diversity, Equity and Inclusion

Director to communicate with the online community in various ways including newsletters and live blogs.

2. Resources Hub

Although several resources and training opportunities related to diversity and equity are available on various current MSU websites, CDC has identified a lack of a centralized core where these resources are organized in a user-friendly way. Given the lack of a centralized and well curated alternative, our goal is to organize the new NatSci-Diversity website so that we can offer separate links for current and prospective Students, Faculty and Staff, based on their different interests and needs. These links will connect the website visitors with a large array of both physical resources (e.g. MSU offices and Organizations) and virtual resources (e.g. online training opportunities, access to official policies, and resources for addressing diversity- and inclusion-related issues or concerns). The new NatSci-Diversity Resource Hub will be covering the following topics:

i. College Diversity Related Data Source

Available data for the demographic composition (e.g. gender and ethnicity) of the NatSci community (including its students, staff, and faculty) will be made publicly available on the new website. Graduation and retention data will also be included. In addition, the results of the NatSci climate survey, that is currently about to launch, will also be posted here. Our aim is for the public distribution of these resources to abet current and future initiatives aligning with NatSci's commitment to inclusivity and diversity.

ii. Training Opportunities

This section will advertise both NatSci and university-wide training opportunities pertaining to diversity, equity and inclusion. Additionally, links for self-education sites will be offered to website users. Finally, the webpage will also act as a platform for advertising both local and nationwide diversity and inclusion conferences that are relevant to the NatSci community. Our intention is to empower NatSci faculty, staff, and students to develop themselves both personally and professionally, keeping pace with a dynamic landscape of critical issues and perspectives surrounding diversity and equity.

iii. General Diversity and Inclusion Resources

A plethora of links related to both MSU related and external resources and groups related to underrepresented minorities and general diversity and inclusion information will be provided. These will include both local and national resources that offer information, advocacy, or other useful tools for diverse members of the NatSci community.

3. Directory

The webpage will list the contact information of all NatSci-Diversity officers, including the new NatSci-Diversity, Equity and Inclusion (DEI) Director (when position is filled), CDC information, as well as the DEI representative from each unit. Contact information for the Faculty Excellence Advocate will also be highlighted. The directory will help students, staff and faculty identify individuals they can reach out to for assistance or questions about diversity-related issues.

4. Feedback/ Suggestions / Concerns / Comments Platform

The redesigned website will act as a platform for accepting any anonymous or eponymous suggestions, concerns and comments from its visitors. All comments and concerns will be

directed to the NatSci-Diversity, Equity and Inclusion Director (when position is filled) for follow up actions. This will provide a critical mechanism for community members to direct communications regarding diversity-related issues to a responsible party without fear of judgement or retaliation.

After the new website has been launched in spring 2019, our goal is to advertise its availability to the NatSci community using both social media and other public avenues, including the NatSci kiosk and similar main entrance screen-layouts throughout the units. At this time, we will also invite feedback from website users to further improve the content and organization of the new webpage.

Future Recommendations

College Diversity, Equity, and Inclusion (DEI) Mission Statement

NatSci does not currently have a diversity mission statement, although the NatSci Dean's Office has created a vision statement and a set of core values to foster and sustain a positive work culture and environment. We believe that the college should also craft a statement pertaining to diversity, equity, and inclusion (DEI) as a sign of its commitment to the students, faculty, and staff within the college. Such a statement is crucial for providing the college with guidance as it continues to grow and evolve. The college does not yet have a dedicated DEI office, but we should still hold ourselves accountable when it comes to these issues. The Task Force strongly recommends that one of the College's first steps in creating a strategic plan in spring 2019 should be the construction of a diversity statement that voices the commitment that NatSci has in supporting its constituents.

A variety of units across campus have diversity offices, and their mission statements could help guide the creation of one for NatSci:

- College of Engineering Diversity Programs Office mission statement - <https://www.egr.msu.edu/Wedpo/about/general-information>
- College of Agriculture & Natural Resources DEI Office Mission Statement: <https://www.canr.msu.edu/diversity/>
- College of Veterinary Medicine Office of Diversity and Inclusion mission statement: <https://cvm.msu.edu/about/diversity/strategic-plan>

College-wide strategic plan that emphasizes DEI work

While the mission statement provides a set of guiding principles for the college, the strategic plan is an outline of the specific goals that the college will aim to achieve related to DEI. Such a plan can serve as a means of holding the college accountable for the tasks it sets out to accomplish over specific time periods (e.g. one, five, ten years). For real structural and systemic changes to take place within the College regarding DEI, it is imperative that DEI becomes embedded into everything that the college does.

The Task Force recommends NatSci create a strategic plan that incorporates the following ideas to demonstrate commitment to addressing DEI issues:

- Diversity plans for the college should be integrated into broader plans, rather than function as stand-alone policies.
- The inclusion initiatives within the college should align with the focus areas identified by the MSU Office for Inclusion and Intercultural Initiatives to guide diversity, equity, and inclusion initiatives for all MSU units and detailed in the MSU Dean's Council *Framework and Action on Inclusiveness and Responsiveness* (<http://bit.ly/DEI-Framework>):
 - Leadership
 - Access, Retention, Advancement (applicable to faculty, staff, and undergraduate and graduate students)
 - Research
 - Curriculum (formal and informal)
 - Climate
 - External Stakeholders
- There should be clear avenues for collaboration with the diversity committees/dedicated staff in other MSU colleges, particularly in other STEM colleges, and MSU units.
- The college should seek guidance and advice on best practices from MSU units that focus on DEI work, including, but not limited to, MSU Office for Inclusion and Intercultural Initiatives, Office of Institutional Equity, Office for Resource Center for Persons with Disabilities, LBGT Resource Center, Center for Gender in Global Context, MSU Sexual Assault Program, and the Office of International Students and Scholars.
- We recommend that each unit should develop unit-level DEI goals, create a plan to achieve these goals, and review their progress annually.
- NatSci unit representatives to the NatSci DEI Advisory Committee (see *Bylaws Changes - CDC to a Standing DEI Committee* section) should assist with communication and alignment of unit-level and college-level DEI program and initiatives.
 - These representatives should be listed on each unit's website as a contact.
- The strategic plan should outline methods for continued assessment and accountability, such as planning to have a follow-up task force in three years assess the college's changes in staff, faculty, and student diversity and evaluate DEI programs, and planning to complete a follow-up college-wide climate survey in five years.

In addition to developing such a strategic plan, NatSci should clearly define how it will determine its success in achieving the targets outlined in the plan and make any progress public knowledge. The University of Michigan does this by making publicly-accessible progress reports, such as: http://diversity.umich.edu/wp-content/uploads/2017/11/Diversity_Equity_and_Inclusion_Year_One_Progress_Report.pdf

Best Hiring Practices to Increase Diversity

Changes in Hiring Committees to require more accountability

MSU's Advancing Diversity through the Alignment of Policies and Practices (ADAPP) grant, awarded through the National Science Foundation ADVANCE program, led to many improvements in hiring practices, including the creation of Faculty Excellence Advocates (FEA) for each college, who implemented required implicit bias training for all faculty search committees (Roehling & Russell, 2012). Unfortunately, some search committees do not see the need to infuse best hiring practices to increase faculty and staff diversity throughout the hiring process. Instead their focus is on simply meeting the basic requirement of "Reflects the MSU

commitment to diversity and core value of inclusiveness” in the MSU Faculty Search Toolkit (Roehling & Russell, 2012, p. 6).

There appears to be little oversight to review the diversity of candidate pools for faculty positions at MSU. Cindy Jordan, the NatSci Faculty Excellence Advisor, has indicated that this doesn’t occur for hires within NatSci. We recommend that more oversight is needed, and that all faculty and staff candidate pools are reviewed to ensure that they include a diverse group of candidates. Candidate pools deemed insufficiently diverse should be denied, and search committees should be required to cast a wider net in advertising for positions.

Additional Recommendations:

- Continue to require that every search committee member attend training on diversity and bias before serving
- Assess the process for how committee members are selected (should the unit leader be the sole decider?)
- Develop a system that requires accountability: The designated diversity advocate on each search committee generates a full written report of the search process (from start to finish) that includes but is not limited to a discussion of the following topics: what practices promoted inclusivity, honored diversity, and limited bias. This role would best be served by someone outside the unit.

Changes to the Language Used in Job Descriptions

A college’s commitment to diversity is very clear from wording in job descriptions. The college needs to develop specific, required language about NatSci’s commitment to diversity. This needs to go beyond what is typically included on NatSci job descriptions, which read currently: “Michigan State University is committed to achieving excellence through cultural diversity. The university encourages applications and/or nominations from women, persons of color, veterans and persons with disabilities. Michigan State University is an affirmative action, equal opportunity employer.” The revised language could be based on the mission statement on diversity, equity, and inclusion that the Task Force recommends that the college develop.

Job requirements should also reflect that candidates are expected to go beyond being simply committed to diversity, but are expected to understand the challenges faced by members of underrepresented groups in higher education and indicate a commitment to actively participate in inclusive practices, such as inclusive teaching practices, recruiting and retaining underrepresented students, and attending trainings on equity and inclusion (Sensoy & DiAngelo, 2017).

Considerations for writing the job description to attract diverse candidates (Summarized from Sensoy & DiAngelo, 2017; Wang & Degol, 2017):

- Acknowledge overrepresentation of dominant groups in NatSci (e.g. “Michigan State University is committed to achieving excellence through cultural diversity and acknowledges the overrepresentation of dominant groups in body and ideology.”)
- Ask that candidates have critically examined the social and cultural influences on knowledge production and validation within their field (e.g. “Candidates must

demonstrate an ability to situate knowledge in their field in a social, cultural, and historical context”).

- Utilize wording that indicates a critical understanding of social and cultural influences. Stating “Demonstrate an understanding of the lived experience of students of color” will attract more diverse candidates than “Demonstrate an understanding of disadvantaged or inner-city students.”
- Committee members must understand how to critically analyze candidates’ responses to this language.

Diversity Statements for All Candidates

The Task Force recommends that candidates for all faculty and staff positions be required to submit diversity statements as part of their application packets. Requiring diversity statements demonstrates to potential candidates that NatSci is committed to diversity and inclusion efforts. Reviewing diversity statements reminds members of the search committee that inclusive principles are a college core value, and an important consideration for hiring.

Examples of required application materials from other MSU colleges:

College of Arts and Letters: “summary of your experience with diversity in the classroom and/or in your past or planned research endeavors, any experience mentoring diverse students or community outreach initiatives, and an explanation of how you will advance our goals of inclusive excellence”

College of Agriculture & Natural Resources: 1) “a summary of describing how a commitment to diversity and inclusion informs past and future professional contributions in creating an inclusive classroom and/or research endeavors, any experience in mentoring diverse students, and an explanation of how you will contribute to our goals of inclusive excellence (limited to 1 page)”; 2) “a summary of experience or philosophy fostering diversity and inclusion in your professional career”

College of Social Science: 1) “a statement addressing how past and/or potential contributions to diversity/inclusion will advance MSU’s commitment to inclusive excellence”; 2) a diversity and inclusion statement, which should address your ability and experience working with underrepresented student populations

Considerations for examining a diversity statement (summarized from Sensoy & DiAngelo, 2017):

- Decide what explicit evidence will be used to determine that a candidate has promoted and will continue to promote diversity. For example, relationships with communities and activism/advocacy work
- Count multilingualism as a strength, not a barrier
- Expect diversity literacy no matter the field
- Seek and honor input from adjacent/affiliated departments that have successfully hired diverse candidates

Required Interview Questions on Diversity and inclusion

All interviews for faculty and staff positions should be required to include questions regarding the candidate's experience with diversity and inclusion initiatives. A list of possible questions should be developed by the CDC, with input from the FEA, and hiring committees should be provided with training on how to evaluate responses to these questions. All candidates should be expected to have some level of understanding about the challenges faced by historically underrepresented students, faculty, and staff in higher education and how to meet the needs of a diverse groups of people. They should also express a willingness to continue their professional growth in these topics.

Some possible interview questions (summarized from Sensoy & DiAngelo, 2017):

1. What experiences do you have specifically pertaining to multiculturalism in higher education?
2. What are some of the techniques you use to teach in a culturally responsive way?
3. How have you demonstrated leadership in the design, implementation, and/or evaluation of initiatives that create and sustain an inclusive environment for students? What about for faculty and staff?
4. What role do faculty play in counteracting the effects of systemic racism and sexism on student success rates? What strategies or mechanisms have you used or to address these challenges and how successful were they?
5. How do you recruit and support diverse graduate students? What success have you had? Challenges?
6. What role models are there in your field for nontraditional students (e.g. female students, LGBTQ+ students, Indigenous students, students of color, students with disabilities)?

See Sample Interview Questions Regarding Diversity ([University of the Pacific, 2016](#), p. 22-23).

Broader job descriptions

One of the ways to increasing the diversity of candidate pools is to broaden the research field of positions. Extremely targeted hires are less likely to yield qualified representatives from underrepresented groups, since candidates from minoritized groups will make up much less of the potential candidate pool.

Equity and Inclusion as part of annual reviews, and reappointment, promotion and tenure

Until inclusion and equity become the responsibility of all staff and faculty within NatSci, we will not be able to break down institutional barriers that lead to differential access to resources and differences in outcomes for all our faculty, staff, and students. Making inclusion the responsibility of all staff and faculty requires commitment and accountability across all levels of the college, including college administration, departments, and programs, as well as individual faculty and staff. Faculty and staff need to be held accountable by requiring progress towards individually-developed and specific goals that demonstrate their commitment to creating an inclusive climate, starting with self-education and reflecting on their own beliefs and

perspectives. Their goals should also focus on how they can contribute to diversity, equity, and inclusion efforts within their units. These goals should be discussed and evaluated during annual reviews. The Lawrence Berkeley National Lab provides some [helpful sample DEI goals and activities for annual reviews](#).

For faculty accountability, participation in diversity and inclusion initiatives should be evaluated as part of the requirements for reappointment, promotion, and tenure. Through a web search, we identified several universities that evaluate contributions to inclusion and equity efforts as part of promotion and tenure, which can serve as models for the college to consider.

In the [University of California \(UC\) schools \(system-wide\)](#): "Contributions in all areas of faculty achievement that promote equal opportunity and diversity should be given due recognition in the academic personnel process, and they should be evaluated and credited in the same way as other faculty achievements. These contributions to diversity and equal opportunity can take a variety of forms including efforts to advance equitable access to education, public service that addresses the needs of California's diverse population, or research in a scholar's area of expertise that highlights inequalities. Mentoring and advising of students and faculty members, particularly from underrepresented and underserved populations, should be given due recognition in the teaching or service categories of the academic personnel process." The UC schools provide guidelines for promotion and tenure committees: "[Evaluating Contributions to Diversity for Faculty Appointment and Promotion](#)" document

All faculty positions (both tenure and non-tenure track) at the [University of Oregon](#) are required to include a personal statement for promotion and tenure that "...should include discussion of contributions to institutional equity and inclusion. This can be fulfilled through service, research, and/or teaching; activities at the [University of Oregon] or within academic and professional associations, non-profit, governmental, and/or private sector organizations; or addressing a wide range of equity and inclusion issues." The university has also created [guidelines for faculty to include equity and inclusion in personal statements](#).

[Promotion and tenure guidelines at Pomona College](#) (p. 62), a small liberal arts college in Claremont, CA, require "...teaching, that is attentive to diversity in the student body" and "Fostering an inclusive classroom where all students are encouraged to participate in discussions, studios, rehearsals, performances, activities and other course exercises."

Evaluation of New Tools for Teaching Evaluation

Because of the importance and challenge of removing bias in teaching evaluations, the Task Force recommends researching existing assessment tools on the market for evaluating teaching, that could be implemented in place of the current or a redesigned SIRS form. One example that is utilized by the Lyman Briggs College is the Student Assessment of their Learning Gains <https://salgsite.net/>.

associations, non-profit, governmental, and/or private sector organizations; or addressing a wide range of equity and inclusion issues.” The university has also created [guidelines for faculty to include equity and inclusion in personal statements](#).

[Promotion and tenure guidelines at Ponomo College](#) (p. 62), a small liberal arts college in Claremont, CA, require “...teaching, that is attentive to diversity in the student body” and “Fostering an inclusive classroom where all students are encouraged to participate in discussions, studios, rehearsals, performances, activities and other course exercises.”

Evaluation of New Tools for Teaching Evaluation

Because of the importance and challenge of removing bias in teaching evaluations, the Task Force recommends researching existing assessment tools on the market for evaluating teaching, that could be implemented in place of the current or a redesigned SIRS form. One example that is utilized by the Lyman Briggs College is the Student Assessment of their Learning Gains <https://salgsite.net/>.

Inclusion statements for course syllabi

In order to demonstrate NatSci’s commitment to fostering inclusive classroom environments, faculty teaching NatSci courses should be encouraged to attend trainings related to these issues and develop inclusive language to include in their course syllabi. Not only does this require that the faculty think carefully about the ways in which their courses provide opportunities for students from diverse backgrounds to productively engage with their courses, but it also serves as a message to the students that the instructor is committed to creating an inclusive classroom.

Of course, this requires that faculty go beyond using boilerplate text copied from one course to the next and make certain that they are thinking about the ways in which a given course might have different requirements to promote inclusion. For example, in courses where group work is a key component of the course, it will be important for faculty to lay ground rules for group discussions and monitor group dynamics to address issues that may arise. The syllabus should include clear policies for how such issues will be addressed if they develop.

Since there is not one “right” statement to include in syllabi related to equity and inclusion, we do not wish to simply provide examples that might encourage the copy-paste mentality, but instead provide [a list of resources](#) to consider when writing a course syllabus. We hope that this serves as an attainable first step in building more inclusive classrooms.

Feedback Mechanism on Faculty Mentoring

A positive mentoring relationship is a strong indicator of academic success for both the mentor and the mentee, these indicators include positive outcomes in research productivity, degree attainment, and long-term career success and satisfaction (reviewed by Pfund et al., 2016). In

While the impact of advisor quality has a consistent and significant effect on student success in the published literature, we often don't evaluate the ability of research faculty to advise and mentor graduate students in a consistent or systematic way. Training and feedback approaches are haphazard, empirical, and undefined across departments and advisors. In contrast, evidence suggests structured training and feedback are necessary to determine how to facilitate and improve mentoring (Pfund et al., 2016). Thus, we recommend implementing a structured feedback mechanism for mentors and mentees.

This structured feedback mechanism for evaluation of faculty mentors by mentees should include the following components:

1. A consistently scheduled annual evaluation – We suggest that a consistent, standardized written survey be developed within the college to provide feedback on faculty mentoring. Such a survey should be designed to reward faculty for their strengths in advising and not just critique their weaknesses. The survey should also allow flexibility for individual departments to add items to the survey that identify aspects of mentoring relationships unique to their disciplines.
2. Evidence-based mentor attributes and tasks – The evaluation must be linked to a clear set of objectives as it relates to graduate student advising. Mentorship feedback should not consist of how a student feels about their advisor, but should be concretely linked to the specific expectations set by the MSU Graduate School as it relates to their duty as a faculty member at this University (see Pfund et al., 2016, Table 1 and the MSU Graduate School Guidelines for Graduate Student Advising and Mentoring Relationships: <https://grad.msu.edu/sites/default/files/content/researchintegrity/guidelines.pdf>). We would encourage units to establish training for mentors and mentees to review these guidelines and to be exposed to scenarios to become familiar with mentor/mentee roles.
3. Consistent, comparable, and retained on file to track progress – A standardized survey allows for the identification of successful mentoring practices within units and across the college, as well as barriers that might hinder graduate success. Furthermore, written evaluation results can be recorded and retained digitally. Collection of text written by the student will likely result in more thoughtful feedback from the student than a simple conversation would, and it provides a clear paper trail that can protect both the student and faculty advisor in particularly contentious situations. Evaluations in this format can be easily passed on to the graduate program director, department chair, or college dean. A long-term record of mentoring also allows for the identification of problems that may only become apparent over time.
4. Awareness of potential biases in surveys – The survey needs to be developed to minimize the effects of unconscious bias. As with student evaluations of faculty teaching (see SIRS form above), faculty from marginalized groups may be evaluated on a different scale than those from dominant groups (e.g. white, senior, male faculty) due to stereotypes of people who complete the survey.
5. Elicit the provision of negative and positive feedback – It is important that this survey recognize mentoring strengths in advisors as well as weaknesses. At all levels, academia suffers from a lack of positive feedback, and it is important that faculty be recognized for what they are doing well as advisors.

6. Follow-through from the college administration to value mentoring - A metric of success in mentoring should be used in annual faculty reviews, promotion or award packages, NSF/NIH grant proposals, etc. Without proper incentive, our current push for mentorship improvement will likely be lost in the busy day-to-day life of faculty advisors. This relationship between evaluation results and faculty success is not meant to punish faculty, but instead to foster and reward the career development of faculty who demonstrate excellence in student mentoring.
7. Anonymous – Feedback should strive to be anonymous. Ideally, faculty will be evaluated on an annual basis by their direct students, students whose committees they serve on, postgraduate research technicians/associates, postdocs, etc. Increasing the sample size of available data allows for a more comprehensive and accurate evaluation, but also reduces the risk of a student's evaluation being identified by an advisor which can lead to repercussions against the student.

Any changes designed to improve mentorship within NatSci must include buy-in at all levels of the college. Chairs, senior leadership, and hiring and promotion committees need to make a commitment to valuing and considering mentorship during the formal review process or evaluation of tenure and promotion. Of course, in order to ensure that evaluation of mentorship is a fair metric to be used in promotion and appointment of tenure, effort must be made to ensure that faculty receive adequate training in this area. By recognizing the importance of mentoring, the college will encourage and allow mentors to dedicate time and effort to fostering healthy mentoring relationships, which will ultimately improve graduate student success and research productivity at the university as a whole. A core goal of the [MSU Graduate School's 2019-2024 Strategic Plan](#) is to improve student success by 'expand(ing) inclusive mentoring practices and catalyz(ing) continuous improvement across units to implement evidence-based practices'. Specifically, the Graduate School plans to 'Work with academic units to develop a template for evaluating mentorship activities for use as part of faculty development programs, annual review, and RPT' (Objective 1.1.1).

Additional Recommendations

- Develop a program to teach mentoring skills to graduate students and postdocs
- Graduate student recruitment - although a handful of departments/programs have managed to recruit a greater number of underrepresented students over the last few years, the overall fraction of such students in NatSci's graduate programs are still quite low (~8% across all marginalized groups as of 2017). Current efforts should continue and new efforts should be made, including building partnerships with Historically Black Colleges and Universities (HBCUs) and other minority-serving institutions
- Start undergraduate recruiting to increase diversity
- Set up a lending library of inclusion/equity books
- Create a college-wide diversity award for efforts in promoting inclusion and equity, which includes a monetary award
- Consideration of a summer bridge program with credit-bearing courses
- Develop financial support programs to involve underrepresented students in research

- Partner with corporate sponsors to support the development of an undergraduate research program for underrepresented students (or low socioeconomic status/first generation students) that will provide a stipend to work in on-campus labs (similar to the MSU Federal Credit Union stipend for unpaid internships)
- Development of program like [U-M's Collegiate Postdoctoral Fellowship Program](#), an initiative that recruits outstanding scholars who will contribute to diversity and inclusion in research and teaching, and also prepare for tenure-track positions within the college
- Work with other MSU units to develop a campus-wide social justice and racial equity day-long or weekend workshop, showcasing the diversity and inclusion work done by colleagues across MSU
- Funding support to send underrepresented students to present at the Annual Biomedical Research Conference for Minority Students (ABRCMS)
- Develop an evaluation team of professors who can offer individualized classroom assessments in which they observe interactions and offer recommendations on how to make classrooms more inclusive
- Work with the MSU Graduate School to remove GREs as an admission criterion for graduate school admissions
- Consideration of piloting a Restorative Justice program for handling conflict and grievances (i.e. incivility, power dynamics) within NatSci programs and departments - contacts Rick Shafer, Associate Director of Student Life, Student Conduct and Conflict Resolution; and Shannon Burton, University Ombudsman

References

- Andreotti, V. (2006). Soft versus critical global citizenship education. *Policy & Practice: A Development Education Review*. Retrieved from <https://www.developmenteducationreview.com/issue/issue-3/soft-versus-critical-global-citizenship-education>
- Astin, A. W. (1993). Diversity and multiculturalism on campus: How are students affected? *Change*, 25: 44-50.
- blackspaceblog. (2014, Dec. 8). An open letter of love to black students: #BlackLivesMatter [Blog post]. Retrieved from <http://blackspaceblog.com/2014/12/08/an-open-letter-of-love-to-black-students-blacklivesmatter/>.
- Cabrera A. F., Nora A, Terenzini P. T., Pascarella E., & Hagedorn L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between white students and African-American students. *The Journal of Higher Education*, 70(2), 134-160.
- Chemers, M. M., Zurbriggen, E. L., Syed, M., Goza, B. K., & Bearman, S. (2011). The role of efficacy and identity in science career commitment among underrepresented minority students. *Journal of Social Issues*, 67(3), 469-491.
- The Common Application (2016, April 25). The Common Application expands gender identity options. Retrieved from: <https://www.commonapp.org/whats-appening/news/common-application-expands-gender-identity-options> (link no longer available 8/22/20).
- Evans, T. M., Bira, L., Gastelum, J. B., Weiss, L. T., & Vanderford, N. L. (2018). Evidence for a mental health crisis in graduate education. *Nature biotechnology* 36(3), 282.
- The GenIUSS Group. (2014). *Best practices for asking questions to identify transgender and other gender minority respondents on population-based surveys*. J.L. Herman (ed.). Los Angeles, CA: The Williams Institute. Retrieved from <https://williamsinstitute.law.ucla.edu/wp-content/uploads/Survey-Measures-Trans-GenIUSS-Sep-2014.pdf>
- Griffin, K., Baker, V., O'Meara, K., Nyunt, G., Robinson, T., & Staples, C.L. (2018). Supporting scientists from underrepresented minority backgrounds: Mapping developmental networks. *Studies in Graduate and Postdoctoral Education*, 9(1), 19-37.
- Gurin, P. (1999). Expert Report of Patricia Grin. The compelling need for diversity in higher education: Gratz, et al. v. Bollinger, et al., no. 97-75231 (E.D. Mich.); Grutter, et al. v. Bollinger, et al., no. 97-75928 (E.D. Mich.).
- Hurtado, S., Alvarez, C.L., Guillermo-Wann, C., Cuellar, M., & Arellano, L. (2012). A model for diverse learning environments: The scholarship on creating and assessing conditions for student success. In J. C. Smart & M. B. Paulsen (Eds.), *Higher education: Handbook of theory and research*, 27 (pp. 41-122). New York: Agathon Press.
- Hurtado, S., & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education*, 70(4), 324-345.
- Hurtado, S., Griffin, K. A., Arellano, L., & Cuellar, M. (2008). Assessing the value of climate assessments: Progress and future directions. *Journal of Diversity in Higher Education*, 1(4), 204–221.

- James Madison College 2015-2016 Racial Climate Committee (2016, July). Report of the racial climate committee to the James Madison College and Dean Sherman Garnet. Retrieved from: <https://jmc.msu.edu/diversity/download/rcc-final.pdf>
- Johnson, D. R. & Soldner, M. & Leonard, J. B. & Alvarez, P. & Inkelas, K. K. & Rowan-Kenyon, H. T., & Longerbeam, S. D. (2007). Examining Sense of Belonging Among First-Year Undergraduates from Different Racial/Ethnic Groups. *Journal of College Student Development*, 48(5), 525-542.
- Lazos, Sylvia R. (2012). Are student teaching evaluations holding back women and minorities?: The perils of 'doing' gender and race in the classroom. In G. Gutierrez, Y. Niemann, C. Gonzalez, & A. Harris (Eds.), *Presumed incompetent: The intersections of race and class for women in academia* (pp.165-185). Boulder, CO: University Press of Colorado.
- Leung A. K., Maddux, W. W., Galinsky, A.D. & Chiu. C. (2008). Multicultural experience enhances creativity. *American Psychologist* 63(3), 169-181.
- Lee, J. (2015). Affirmation, support and advocacy: Considering Critical Race Theory when advising students of color. [PowerPoint slides].
- Liberate MSU. (2015, Nov. 30) Our demands. Retrieved from: http://studentaffairs.msu.edu/_files/documents/LiberateMSU%20old%20demands%20PDF.pdf.
- McCleod, P.I., Lobel, S. A., & Cox. T.H. (1996). Ethnic diversity and creativity in small groups. *Small Group Research*, 27, 248-265.
- MI School Data (2017-2018). School Counts. Student Count Snapshot for all Schools in the State, 12th Grade Students, Report Categories Race/Ethnicity and Gender. Retrieved from: <https://www.mischooldata.org/DistrictSchoolProfiles2/StudentInformation/StudentCounts/StudentCount.aspx>.
- Montgomery, B. L., Dodson, J. E., & Johnson, S. M. (2014). Guiding the way: Mentoring graduate students and junior faculty for sustainable academic careers. *SAGE Open*, 4(4), <https://doi.org/10.1177/2158244014558043>
- MSU Office for Inclusion and Intercultural Initiatives (2018). *Diversity at MSU: 2016-17 Student and Workforce Data Report*. Retrieved from: https://inclusion.msu.edu/_assets/documents/about/annual-reports/2016-2017-Diversity-at-MSU-Student-and-Workforce-Data-Report.pdf
- National Center for Science and Engineering Statistics (NCSES) (2017). *Women, Minorities, and Persons with Disabilities in Science and Engineering*. (Report No. NSF 17-310). Arlington, VA. Retrieved from <https://www.nsf.gov/statistics/2017/nsf17310/static/downloads/nsf17310-digest.pdf>.
- Pfund, C., Byars-Winston, A., Branchaw, J., Hurtado, S., & Eagan, K. (2016). Defining attributes and metrics of effective research mentoring relationships. *AIDS and Behavior*, 20(2), 238-248.
- Pizaña, D. (2017, Dec. 29). *Understanding oppression and "isms" as a system*. Retrieved from http://msue.anr.msu.edu/news/understanding_oppression_and_isms_as_a_system.
- Rankin & Associates Consulting (2014, March). University of California-Berkley Campus Climate Project Final Report. Retrieved from: http://campusclimate.ucop.edu/_common/files/pdf-climate/ucb-full-report.pdf.

- Rankin, S. R., & Reason, R. D. (2008). Transformational tapestry model: A comprehensive approach to transforming campus climate. *Journal of Diversity in Higher Education*, 1(4), 262–274.
- Roehling, M.V., & Granberry Russell, P. (Eds.) (2012). *Faculty search toolkit: A resource for search committees and administrators at Michigan State University* (NSF ADVANCE Grant #0811205). East Lansing, MI: Michigan State University.
- Rhoads, R. A. (1998). Promises made, promises kept: The struggle of American Indians at Michigan State. In *Freedom's web: Student activism in an age of cultural diversity*. (pp. 127-139). Baltimore, MD: Johns Hopkins University Press.
- Sensoy, Ö., & DiAngelo, R (2017). “We are all for diversity, but...”: How faculty hiring committees reproduce whiteness and practical suggestions for how they can change. *Harvard Educational Review*, 87(4), 557-580.
- Sensoy, Ö., & DiAngelo, R. (2012). *Is everyone really equal?: An introduction to key concepts in social justice education*. New York: Teachers College Press.
- Seifert, T. A. 2007. Understanding Christian privilege: Managing the tensions of spiritual plurality. *About Campus*, 12(2), 10-17.
- Steele, C. M, Spencer, S.J., & Aronson, J. (2002). Contending with group image: The psychology of stereotype and social identity threat. *Advances in Experimental Social Psychology*, 34, 379-440.
- Strayhorn, T. L. (2012). *College students' sense of belonging: A key to educational success for all students*. New York: Routledge.
- Thomas, K.M., Willis, L.A. and Davis, J. (2007). Mentoring minority graduate students: Issues and strategies for institutions, faculty, and students. *Equal Opportunities International*, 26(3), 178-192.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: University of Chicago Press.
- UCOP Academic Personnel and Programs (2017, February). Evaluating Contributions to Diversity for Faculty Appointment and Promotion Under APM - 210. Retrieved from: <https://www.ucop.edu/faculty-diversity/policies-guidelines/eval-contributions-diversity.pdf>.
- University of Minnesota College of Food, Agricultural and Natural Resource Sciences (n.d.). Diversity and Inclusion in the Performance Review — CFANS. Retrieved from: <https://www.cfans.umn.edu/sites/cfans.umn.edu/files/Diversity%20and%20Inclusion%20in%20the%20Performance%20Review.pdf>.
- University of Oregon (n.d.). Equity and Inclusion in Personal Statements for Reviews of Bargaining Unit Faculty. Retrieved from: <https://inclusion.uoregon.edu/sites/inclusion2.uoregon.edu/files/updatedbestpracticesforequityandinclusioninpersonalstatementsforreviewsofbargainingunitfaculty.pdf>
- University of the Pacific. (2016). *A guide to faculty recruitment: Faculty diversity hiring plan*. Retrieved from <https://www.pacific.edu/about-pacific/administration-offices/office-of-the-provost/faculty-affairs-and-resources/faculty-resources/faculty-recruitment-and-appointment.html>
- U.S. Census Bureau (2010). Race and Hispanic Origin. Quick Facts Michigan. Retrieved from <https://www.census.gov/quickfacts/mi>.

Wang, M. T., & Degol, J. L. (2017). Gender gap in science, technology, engineering, and mathematics (STEM): Current knowledge, implications for practice, policy, and future directions. *Educational Psychology Review*, 29(1), 119-140.

Appendices

Appendix A: Federal Guidelines and Definitions of Terms Used for Race and Ethnicity

(MSU Office for Inclusion & Intracultural Initiatives, 2018, p. 3).

- African American or Black. A person having origins in any of the black racial groups of Africa. Terms such as “Haitian” or “Negro” can be used in addition to “Black or African American.”
- American Indian or Alaska Native. A person having origins in any of the original peoples of North and South America (including Central America), and who maintains tribal affiliation or community attachment.
- Asian. A person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent including, for example, Cambodia, China, India, Japan, Korea, Malaysia, Pakistan, the Philippine Islands, Thailand, and Vietnam.
- Hawaiian or Pacific Islander. A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.
- Hispanic or Latino. A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race. The term, “Spanish origin,” can be used in addition to “Hispanic or Latino.”
- White. A person having origins in any of the original peoples of Europe, the Middle East, or North Africa

Appendix B: Demographic Data for Comparison to NatSci Data

Table 1: Race/Ethnicity data for the State of Michigan from the 2010 Census

**Statistics for all states and counties, and for cities and towns with a population of 5,000 or more*

Race and Hispanic Origin	Percentage
White alone, percent	79.40%
Black or African American alone, percent (a)	14.10%
American Indian and Alaska Native alone, percent (a)	0.70%
Asian alone, percent (a)	3.20%
Native Hawaiian and Other Pacific Islander alone, percent (a)	(Z)
Two or More Races, percent	2.40%
Hispanic or Latino, percent (b)	5.10%
White alone, not Hispanic or Latino, percent	75.20%

(a) Includes persons reporting only one race

(b) Hispanics may be of any race, so also are included in applicable race categories

(Z) Value greater than zero but less than half unit of measure shown

Note: Adapted from U.S. Census Bureau (2010).

Table 2: Race/Ethnicity and Gender Comparisons between MSU students and Michigan 12th grade students

Student Enrollment	MSU Students Fall 2017*		State of Michigan 12th grade Students 2017-2018	
	Total number	Percentage	Total number	Percentage
African American/Black	3,414	7.9%	18,677	15.9%
American Indian/Alaska Native	116	0.3%	778	0.7%
Asian	2,582	6.0%	4,048	3.5%
Hawaiian/Pacific Islander	54	0.1%	142	0.1%
Hispanic/Latinx (of any race)	2,172	5.0%	7,632	6.5%
Two or More Races	1,416	3.3%	3,173	2.7%
Total Students of Color	9,754	22.6%	34,450	29.4%
White	32,870	76.1%	82,861	70.6%
Other/Unknown/No Response	545	8.0%		
Domestic Total	43,169	86.3%		
International	6,850	13.7%		
Total students	50,019		151,761	
Male	24,193	48.4%	58,781	50.1%
Female	25,826	51.6%	58,530	49.9%

*For MSU, race/ethnicity numbers and percentages are only for domestic students

Note. Data for MSU Students from MSU Office for Inclusion and Intercultural Initiatives (2018); data for Michigan 12th grade Students from MI School Data (2017-2018).

Appendix C: Natural Science Data Tables

Table 1. Faculty and Staff, Numbers by Employment Category

Employment Category	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
Tenure System Faculty	298	298	296	295	289	290	296	297	288	298	301
Fixed Term Faculty	110	105	88	80	77	80	77	90	93	90	85
Continuing Staff	36	36	38	40	36	35	43	48	50	52	56
Fixed Term Staff	194	195	174	176	202	205	229	219	243	255	294
Non-Academic Staff	199	200	204	236	198	210	209	217	223	233	228

Table 2. Tenure Track Faculty, Percentages by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
American Indian/Alaska Native	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.7%	0.7%	0.7%
Asian	---	---	---	14.6%	14.9%	15.9%	16.2%	15.8%	17.0%	17.1%	17.9%
Asian/Pacific Islander	13.1%	13.4%	14.2%	---	---	---	---	---	---	---	---
African American/Black	1.0%	1.0%	1.0%	1.0%	1.0%	0.7%	0.7%	0.7%	0.7%	0.7%	0.7%
Hawaiian/Pacific Islander	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hispanic/Latinx	1.3%	1.3%	1.4%	1.7%	1.4%	1.4%	2.4%	2.4%	2.4%	2.0%	2.0%
White	80.2%	79.9%	79.4%	79.3%	76.5%	78.3%	78.0%	78.8%	77.4%	76.5%	73.4%
Multiracial	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
International	4.0%	4.0%	3.7%	3.1%	5.9%	3.4%	2.4%	2.0%	1.7%	3.0%	5.3%

Table 3. Fixed Term Faculty, Percentages by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
American Indian/Alaska Native	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asian	---	---	---	12.5%	15.6%	10.1%	10.4%	12.2%	10.8%	8.9%	10.6%
Asian/Pacific Islander	---	17.1%	11.4%	---	---	---	---	---	---	---	---
African American/Black	---	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%	1.2%
Hawaiian/Pacific Islander	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hispanic/Latinx	---	1.0%	1.1%	1.3%	3.9%	3.8%	2.6%	2.2%	2.2%	3.3%	2.4%
White	---	73.8%	61.4%	66.3%	66.2%	72.2%	75.3%	70.0%	69.9%	73.3%	72.9%
Multiracial	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
International	---	24.8%	26.1%	20.0%	14.3%	13.9%	11.7%	15.6%	17.2%	13.3%	12.9%

Table 4. Academic staff, Continuing, Percentages by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
American Indian/Alaska Native	---	---	---	---	---	---	---	0.0%	0.0%	0.0%	0.0%
Asian	---	---	---	10.0%	11.1%	11.4%	9.3%	12.5%	12.0%	11.5%	10.7%
Asian/Pacific Islander	8.3%	8.3%	10.5%	---	---	---	---	---	---	---	---
African American/Black	5.6%	8.3%	10.5%	10.0%	11.1%	11.4%	9.3%	8.3%	8.0%	7.7%	7.1%
Hawaiian/Pacific Islander	---	---	---	---	---	---	---	0.0%	0.0%	0.0%	0.0%
Hispanic/Latinx	---	2.8%	2.6%	---	---	---	---	2.1%	2.0%	1.9%	1.8%
White	83.3%	80.6%	76.3%	77.5%	75.0%	74.3%	81.4%	77.1%	78.0%	78.8%	78.6%
Multiracial	---	---	---	---	---	---	---	0.0%	0.0%	0.0%	0.0%
International	2.8%	---	---	2.5%	2.8%	2.9%	---	---	---	---	1.8%

Table 5. Academic Staff, Fixed, Percentages by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
American Indian/Alaska Native	---	---	---	0.0%	0.0%	0.5%	0.4%	0.5%	0.4%	0.4%	0.3%
Asian	---	---	---	8.5%	8.9%	7.3%	7.0%	5.9%	7.0%	5.5%	5.4%
Asian/Pacific Islander	3.6%	5.1%	6.3%	---	---	---	---	---	---	---	---
African American/Black	0.5%	0.5%	0.6%	0.0%	0.0%	0.5%	0.4%	1.4%	2.1%	1.6%	0.7%
Hawaiian/Pacific Islander	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hispanic/Latinx	0.5%	1.0%	0.6%	0.6%	0.5%	1.0%	0.9%	1.4%	0.4%	2.4%	2.4%
White	40.7%	38.5%	38.5%	35.2%	34.2%	35.6%	39.7%	35.2%	39.9%	38.4%	38.8%
Multiracial	---	---	---	0.6%	0.5%	0.0%	0.0%	0.0%	0.0%	0.4%	0.7%
International	54.6%	54.9%	54.0%	55.1%	55.9%	55.1%	51.5%	55.7%	50.2%	51.4%	51.7%

Table 6. Non-academic Staff, Percentages by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
American Indian/Alaska Native	0.5%	1.0%	1.0%	0.8%	1.0%	1.0%	1.0%	1.4%	0.9%	0.9%	0.4%
Asian	---	---	---	5.9%	6.1%	7.1%	6.7%	6.0%	4.9%	5.6%	4.8%
Asian/Pacific Islander	7.0%	7.0%	6.4%	---	---	---	---	---	---	---	---
African American/Black	3.5%	3.0%	2.9%	4.2%	4.0%	2.9%	2.9%	2.8%	3.1%	4.3%	3.5%
Hawaiian/Pacific Islander	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Hispanic/Latinx	2.5%	2.5%	2.9%	2.5%	2.5%	3.3%	2.9%	3.2%	4.0%	3.9%	3.9%
White	84.9%	86.0%	85.8%	83.5%	84.3%	84.8%	86.6%	86.6%	86.5%	83.7%	79.8%
Multiracial	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
International	1.5%	0.5%	1.0%	2.5%	1.5%	1.4%	---	0.5%	0.4%	1.7%	1.3%

Table 7. Faculty and Staff, Numbers by Gender

Employment Categories	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
Tenure System Men	241	239	237	235	231	235	232	230	219	224	225
Tenure System Women	57	59	59	60	58	55	64	67	69	74	76
Fixed Term Faculty Men	--	66	59	55	48	43	42	52	53	54	47
Fixed Term Faculty Women	--	39	29	25	29	36	35	38	40	36	38
Continuing Staff Men	21	21	21	22	20	19	21	22	23	24	25
Continuing Staff Women	15	15	17	18	16	16	22	26	27	28	31
Fixed Term Staff Men	113	115	106	102	105	113	131	128	155	162	179
Fixed Term Staff Women	81	80	68	74	97	92	98	91	88	93	115
Non-Academic Staff Men	65	67	69	84	68	70	78	81	80	81	78
Non-Academic Staff Women	133	133	135	151	130	140	131	136	143	152	149

Table 8. All NatSci Students, Percentages of undergraduates and graduates, by Gender and of Students of Color

Student Categories	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
Undergraduate Students	83.0%	83.0%	82.9%	83.6%	83.9%	83.7%	83.9%	83.8%	84.9%	85.1%	85.5%
Graduate Students	17.0%	17.0%	17.1%	16.4%	16.1%	16.3%	16.1%	16.2%	15.1%	14.9%	14.5%
Men Students	47.7%	47.9%	49.5%	49.9%	50.6%	52.0%	50.5%	50.5%	49.4%	48.6%	46.3%
Women Students	52.3%	52.1%	50.5%	50.1%	49.4%	48.0%	49.5%	49.5%	50.6%	51.4%	53.7%
Students of Color	17.1%	16.5%	16.0%	16.0%	16.7%	17.1%	17.7%	19.2%	20.2%	21.4%	22.2%
Total Students	5,599	5,787	5,848	5,889	5,871	5,878	5,846	5,898	5,976	6,192	6,362

Table 9. NatSci Undergraduate Students, Percentages by Gender and of Students of Color

	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
Men Students	45.9%	46.2%	48.0%	48.5%	49.4%	50.6%	49.1%	48.9%	47.8%	46.9%	43.8%
Women Students	54.1%	53.8%	52.0%	51.5%	50.6%	49.4%	50.9%	51.1%	52.2%	53.1%	56.2%
Students of Color	19.4%	18.7%	18.2%	18.0%	18.8%	19.3%	20.0%	21.4%	22.4%	23.7%	24.3%
Total Students	4,649	4,806	4,848	4,926	4,928	4,917	4,903	4,943	5,071	5,268	5,439

Table 10. NatSci Undergraduate Students, Percentages by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	76.0%	75.3%	74.8%	74.7%	73.8%	73.0%	71.3%	68.4%	66.8%	65.5%	65.1%
Students of Color	19.4%	18.7%	18.2%	18.0%	18.8%	19.3%	20.0%	21.4%	22.4%	23.7%	24.3%
African American/Black	8.3%	7.7%	7.0%	6.0%	5.8%	5.9%	6.4%	6.6%	6.9%	7.2%	7.7%
American Indian/Alaska Native	0.7%	0.8%	0.7%	0.5%	0.4%	0.2%	0.2%	0.2%	0.3%	0.3%	0.2%
Asian	---	---	---	6.8%	6.8%	6.9%	6.5%	6.9%	7.2%	7.4%	6.9%
Asian/Pacific Islander	7.9%	7.7%	7.9%	---	---	---	---	---	---	---	---
Hispanic/Latinx	2.4%	2.6%	2.6%	2.8%	3.6%	3.8%	3.9%	4.5%	4.5%	4.8%	5.1%
Hawaiian/Pacific Islander	---	---	---	0.1%	0.0%	0.1%	0.1%	0.1%	0.2%	0.2%	0.2%
Multiracial	---	---	---	1.8%	2.2%	2.4%	3.0%	3.3%	3.3%	3.8%	4.2%
Other/Blank	1.4%	1.7%	2.2%	1.8%	1.5%	1.4%	1.3%	1.1%	0.9%	0.9%	0.7%
International	3.3%	4.3%	4.8%	5.5%	5.9%	6.2%	7.4%	9.0%	9.9%	9.9%	9.8%

Table 11. NatSci Undergraduate Men, Percentages of total Undergraduate Population by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	35.8%	35.7%	36.6%	36.7%	37.0%	37.6%	34.9%	34.1%	32.5%	30.7%	28.0%
Students of Color	7.9%	7.6%	7.6%	7.8%	8.2%	8.5%	8.9%	9.0%	9.3%	10.0%	9.7%
African American/Black	2.5%	2.3%	2.2%	2.1%	2.0%	2.1%	1.9%	1.8%	1.9%	2.3%	2.3%
American Indian/Alaska Native	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
Asian	---	---	---	3.6%	3.5%	3.5%	3.5%	3.6%	3.9%	4.0%	3.3%
Asian/Pacific Islander	3.9%	3.7%	4.0%	---	---	---	---	---	---	---	---
Hispanic/Latinx	1.2%	1.3%	1.2%	1.4%	1.8%	2.0%	2.1%	2.0%	1.9%	1.9%	2.1%
Hawaiian/Pacific Islander	---	---	---	0.1%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
Multiracial	---	---	---	0.5%	0.8%	0.9%	1.2%	1.4%	1.3%	1.6%	1.9%
Other/Blank	0.6%	0.9%	1.3%	1.1%	1.0%	0.8%	0.8%	0.7%	0.5%	0.6%	0.4%
International	1.6%	2.0%	2.5%	2.9%	3.2%	3.7%	4.5%	5.1%	5.5%	5.6%	5.7%

Table 12. NatSci Undergraduate Women, Percentages of total Undergraduate Population by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	40.2%	39.6%	38.2%	38.0%	36.8%	35.5%	36.3%	34.3%	34.3%	34.9%	37.2%
Students of Color	11.5%	11.1%	10.5%	10.2%	10.6%	10.8%	11.1%	12.5%	13.0%	13.8%	14.6%
African American/Black	5.9%	5.3%	4.8%	4.0%	3.8%	3.9%	4.4%	4.8%	5.0%	4.9%	5.4%
American Indian/Alaska Native	0.5%	0.5%	0.5%	0.3%	0.3%	0.2%	0.1%	0.1%	0.2%	0.2%	0.1%
Asian	---	---	---	3.2%	3.3%	3.4%	3.0%	3.3%	3.2%	3.4%	3.6%
Asian/Pacific Islander	4.0%	4.0%	3.9%	---	---	---	---	---	---	---	---
Hispanic/Latinx	1.2%	1.3%	1.4%	1.4%	1.8%	1.8%	1.7%	2.5%	2.6%	2.9%	3.0%
Hawaiian/Pacific Islander	---	---	---	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.1%
Multiracial	---	---	---	1.3%	1.4%	1.5%	1.8%	1.8%	1.9%	2.2%	2.3%
Other/Blank	0.8%	0.8%	0.9%	0.7%	0.5%	0.7%	0.5%	0.5%	0.4%	0.3%	0.3%
International	1.7%	2.3%	2.4%	2.6%	2.7%	2.5%	2.9%	3.9%	4.5%	4.2%	4.1%

Table 13. NatSci Graduate Students, Percentages by Gender and of Students of Color

	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
Graduate Students	950	981	1,000	963	943	961	943	955	905	924	923
Men Students	56.2%	56.5%	57.0%	56.8%	57.1%	58.8%	57.6%	58.7%	58.0%	58.7%	61.2%
Women Students	43.8%	43.5%	43.0%	43.2%	42.9%	41.2%	42.4%	41.3%	42.0%	41.3%	38.8%
Students of Color	5.8%	5.5%	5.8%	5.6%	5.7%	5.8%	5.9%	7.5%	8.2%	8.3%	10.0%

Table 14. NatSci Graduate Students, Percentages by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	46.4%	43.0%	41.1%	44.9%	46.7%	47.2%	48.3%	49.3%	52.0%	51.9%	51.5%
Students of Color	5.8%	5.5%	5.8%	5.6%	5.7%	5.8%	5.9%	7.5%	8.2%	8.3%	10.0%
African American/Black	1.4%	1.3%	1.0%	0.9%	0.5%	0.4%	0.5%	0.9%	0.9%	1.1%	1.3%
American Indian/Alaska Native	0.3%	0.2%	0.4%	0.1%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Asian	---	---	---	2.0%	2.3%	2.3%	2.2%	2.5%	2.7%	2.6%	3.3%
Asian/Pacific Islander	2.3%	2.4%	2.7%	---	---	---	---	---	---	---	---
Hispanic/Latino	1.8%	1.5%	1.7%	1.9%	1.9%	2.1%	1.9%	2.7%	3.3%	3.7%	3.9%
Multiracial	---	---	---	0.7%	0.7%	0.9%	1.2%	1.3%	1.3%	1.0%	1.5%
Other/Blank	3.6%	5.2%	5.7%	4.3%	3.0%	4.4%	3.5%	3.6%	3.5%	3.1%	2.8%
International	44.2%	46.3%	47.4%	45.3%	44.6%	42.6%	42.3%	39.6%	36.2%	36.6%	35.8%

Table 15. NatSci Graduate Men, Percentages of total Graduate Student Population by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	25.7%	24.2%	24.0%	25.0%	26.5%	27.8%	28.6%	29.7%	30.6%	30.4%	30.7%
Students of Color	3.2%	3.1%	3.3%	2.9%	2.9%	3.1%	2.9%	3.9%	4.3%	4.7%	5.9%
African American/Black	0.8%	0.6%	0.6%	0.6%	0.2%	0.2%	0.3%	0.5%	0.6%	0.5%	0.7%
American Indian/Alaska Native	0.2%	0.2%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Asian	---	---	---	0.8%	1.0%	1.2%	0.8%	1.2%	1.4%	1.7%	1.8%
Asian/Pacific Islander	0.9%	1.1%	1.3%	---	---	---	---	---	---	---	---
Hispanic/Latinx	1.2%	1.1%	1.1%	0.9%	1.0%	0.9%	0.8%	1.4%	1.7%	2.1%	2.6%
Multiracial	---	---	---	0.4%	0.6%	0.7%	0.8%	0.8%	0.7%	0.3%	0.8%
Other/Blank	2.0%	3.0%	3.3%	2.7%	1.7%	2.7%	2.3%	2.5%	2.2%	1.6%	1.4%
International	25.4%	26.3%	26.4%	26.2%	26.0%	25.2%	23.8%	22.6%	20.9%	22.0%	23.3%

Table 16. NatSci Graduate Women, Percentages of total Graduate Student Population by Race/Ethnicity

Race/Ethnicity	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	20.7%	18.9%	17.1%	19.8%	20.1%	19.5%	19.6%	19.6%	21.4%	21.5%	20.8%
Students of Color	2.6%	2.4%	2.5%	2.7%	2.9%	2.7%	3.1%	3.7%	3.9%	3.7%	4.1%
African American/Black	0.5%	0.7%	0.4%	0.3%	0.3%	0.2%	0.2%	0.4%	0.3%	0.5%	0.7%
American Indian/Alaska Native	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%
Asian	---	---	---	1.1%	1.4%	1.0%	1.4%	1.4%	1.2%	0.9%	1.4%
Asian/Pacific Islander	1.4%	1.3%	1.4%	---	---	---	---	---	---	---	---
Hispanic/Latinx	0.6%	0.4%	0.6%	0.9%	1.0%	1.1%	1.1%	1.4%	1.7%	1.6%	1.3%
Multiracial	---	---	---	0.3%	0.1%	0.2%	0.3%	0.4%	0.7%	0.6%	0.8%
Other/Blank	1.6%	2.2%	2.4%	1.6%	1.3%	1.7%	1.2%	1.0%	1.3%	1.5%	1.4%
International	18.8%	20.0%	21.0%	19.1%	18.7%	17.4%	18.6%	17.0%	15.4%	14.6%	12.5%

Table 17. NatSci Undergraduates Persistence, All

	Entering Cohort (%)										
	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
1 st Year	90.1	91.4	90.6	91.3	91.2	90.4	89.9	87.8	88.6	89.1	91.5
2 nd Year	84.5	86.7	86	86.7	85.9	84.8	83.1	82.7	84.1	83.6	84.4
3 rd Year	82.8	82.8	83.5	84.8	83.5	82.5	80.5	78.1	81.6	81.7	82.9
4 th Year	79.5	80.4	81.3	81.7	81.8	80.2	77	77	79.3	78.9	81.1

Table 18. NatSci Undergraduate Persistence, by Gender

Entering Cohort	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
% 1 st Year, M	90.4	92.6	92.2	92.4	91.7	89	90.6	86.7	87.7	88.6	90.8
% 1 st Year, F	89.9	90.6	89.6	90.4	90.8	91.4	89.3	88.9	89.4	89.6	92.1
% 2 nd Year, M	85.1	88.4	88.9	89.1	85.9	84.4	84.2	82.5	84.2	84.4	83.7
% 2 nd Year, F	84.1	85.5	84	84.9	85.9	85	82	82.9	84	82.9	85
% 3 rd Year, M	83.1	84.2	85.8	86.1	84	82.8	80.3	76.7	81.5	81.4	81.5
% 3 rd Year, F	82.6	81.8	82	83.7	83.2	82.2	80.6	79.5	81.7	81.9	83.9
% 4 th Year, M	79.9	81.7	82.8	83.1	81.8	80.4	76.6	74.4	77.9	79.1	80.2
% 4 th Year, F	79.2	79.5	80.3	80.7	81.9	80.1	77.4	79.5	80.4	78.7	81.9

Table 19. NatSci Undergraduates Persistence, Race/Ethnicity

Entering Cohort	Year 1 Retention (%)				Year 2 Retention (%)				Year 3 Retention (%)				Year 4 Retention (%)			
	Black	Hisp	Int'l	White	Black	Hisp	Int'l	White	Black	Hisp	Int'l	White	Black	Hisp	Int'l	White
2003	83.2	82.4	72.7	91.5	73.3	76.5	72.7	86.5	70.3	70.6	72.7	85.2	63.4	61.8	63.6	82
2004	92.8	78.8	84.6	91.8	85.6	69.7	84.6	87.5	77	66.7	76.9	84.3	72.7	63.6	76.9	82.5
2005	83.8	95.7	80.8	91.6	73.5	87	69.2	87.6	70.6	78.3	61.5	85.6	69.1	78.3	61.5	83.2
2006	87.3	89.5	90.5	91.9	75.5	73.7	81	88.7	71.8	76.3	76.2	87	66.4	76.3	57.1	84.3
2007	88.7	86.7	85.7	91	79.7	75.6	73.8	87	74.4	75.6	66.7	84.8	69.2	75.6	71.4	83.3
2008	85.7	87.2	89.1	90.4	76.2	76.9	78.3	86.1	66.7	74.4	76.1	84.6	66.7	76.9	71.7	81.8
2009	90.1	88.9	91.1	89.6	74.1	74.1	75.6	84.1	71.6	70.4	64.4	82	69.1	44.4	64.4	79.1
2010	89.6	86.8	79.6	88.8	71.4	81.6	79.6	84.8	59.7	76.3	67.3	81.9	58.4	71.1	67.3	80.6
2011	85.4	80	91.4	89.6	74.4	78.2	88.6	85.1	70.7	76.4	84.3	83.1	67.1	76.4	81.4	81
2012	85	90.9	89.7	88.6	78	70.5	78.2	84.9	78	72.7	75.9	82.2	70	68.2	74.7	80.4
2013	87.8	80.6	94.6	92.3	74.4	77.8	83.9	86.8	73.3	75	81.3	85.4	70	69.4	81.3	83.7
Average	87.2	86.1	86.3	90.6	76.0	76.5	78.7	86.3	71.3	73.9	73.0	84.2	67.5	69.3	70.1	82.0

Table 20. NatSci Undergraduate Graduation Percentages, All

	Entering Cohort (%)										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
4 th Year	49.1	47	47.7	51.6	50	47.4	42.3	47.5	45.6	47.1	51.3
5 th Year	72.1	71.3	73.4	75.1	74.4	72.6	68.1	69.5	72.1	72.4	
6 th Year	77	77	78.2	80.1	78.1	76.2	73.6	74.2	76.9		

Table 21. NatSci Undergraduate Graduation Percentages, Gender

	Entering Cohort (%)										
	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
4 th Year, M	47.2	46	45.1	50.4	45.6	40	40.3	45.4	39.8	43.8	44.7
4 th Year, F	50.4	47.8	49.5	52.5	53.2	52.5	44.2	49.5	50.6	49.9	56.5
5 th Year, M	70.5	71.2	74.3	75.3	72.7	70.1	66.3	65.7	67.7	69.8	
5 th Year, F	73.1	71.5	72.8	75	75.6	74.4	69.7	73.4	75.9	74.7	
6 th Year, M	76.1	77.7	79.9	80.4	77	74.4	72.6	70.4	74.6		
6 th Year, F	77.6	76.6	77	79.9	78.9	77.4	74.5	78	78.8		

Table 22. NatSci Undergraduate Graduation Percentages, Race/Ethnicity

Entering Cohort	4-Yr Graduation (%)				5-Yr Graduation (%)				6-Yr Graduation (%)			
	Blac k	Hisp	Int'l	Whit e	Blac k	Hisp	Int'l	Whit e	Blac k	Hisp	Int'l	Whit e
2003	17.8	17.6	36.4	54.1	44.6	50	54.5	76.5	57.4	61.8	54.5	80.4
2004	12.9	27.3	30.8	51.9	50.4	48.5	61.5	75.1	62.6	60.6	76.9	79.6
2005	16.9	30.4	34.6	51.7	49.3	56.5	57.7	77.6	58.1	65.2	61.5	81.6
2006	23.6	39.5	38.1	54.6	51.8	60.5	52.4	78.6	60	68.4	57.1	83.3
2007	15.8	40	35.7	53.8	52.6	64.4	54.8	77.3	58.6	71.1	59.5	80.4
2008	21.4	17.9	34.8	51.8	41.7	56.4	56.5	76.9	47.6	69.2	60.9	79.6
2009	22.2	14.8	33.3	45.1	49.4	29.6	53.3	72.3	61.7	37	57.8	76.3
2010	13	26.3	42.9	54.2	44.2	57.9	51	75.8	54.5	71.1	61.2	78.6
2011	14.6	27.3	38.6	52.2	50	54.5	72.9	76.2	58.5	65.5	78.6	80
2012	21	29.5	39.1	51.7	60	50	65.5	75.4	---	---	---	---
2013	16.7	36.1	50.9	57.8	---	---	---	---	---	---	---	---
Average	17.8	27.9	37.7	52.6	49.4	52.8	58.0	76.2	57.7	63.3	63.1	80.0

Table 23. NatSci Number of Degree Conferrals, Gender

Degree Categories	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
Degrees - Men	434	494	602	552	558	554	579	560	564	632	586
Degrees - Women	574	576	608	576	647	565	510	537	566	592	663
Baccalaureate - Men	319	381	466	431	432	445	445	429	474	503	480
Baccalaureate - Women	460	460	496	476	537	483	435	444	474	519	574
Masters - Men	57	60	69	68	64	46	59	57	26	49	39
Masters - Women	67	66	63	61	55	41	30	41	35	29	32
PhD - Men	58	53	67	53	62	63	75	74	64	80	67
PhD - Women	47	50	49	39	55	41	45	52	57	44	57

Table 24. NatSci Baccalaureate Conferrals, by Race/Ethnicity

	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	80.6%	79.8%	78.5%	79.8%	76.8%	75.3%	81.3%	74.7%	72.5%	70.4%	67.4%
Students of Color	17.7%	17.6%	18.3%	15.1%	19.0%	16.8%	13.6%	19.8%	18.7%	18.3%	20.7%
African American/Black	5.6%	5.2%	5.3%	3.6%	4.0%	2.8%	2.6%	3.8%	3.7%	4.0%	3.7%
Asian	---	---	---	6.9%	7.5%	7.5%	5.5%	8.5%	8.6%	6.8%	7.5%
American Indian/Alaska Native	0.3%	1.1%	0.6%	0.6%	0.4%	0.5%	0.2%	0.1%	0.2%	0.1%	0.1%
Asian/Pacific Islander	8.6%	8.2%	9.5%	---	---	---	---	---	---	---	---
Hispanic/Latinx	2.4%	1.4%	1.7%	1.3%	2.7%	3.0%	1.9%	3.4%	3.0%	3.3%	4.6%
Hawaiian/Pacific Islander	---	---	---	0.0%	0.3%	0.0%	0.0%	0.0%	0.3%	0.2%	0.3%
Other & Blank	0.8%	1.7%	1.2%	1.3%	2.2%	1.7%	1.7%	1.7%	1.1%	0.9%	0.4%
Multiracial	---	---	---	1.3%	1.9%	1.2%	1.7%	2.3%	1.8%	3.0%	4.1%
International	1.7%	2.6%	3.2%	5.1%	4.2%	7.9%	5.1%	5.5%	8.9%	11.4%	12.0%

Table 25. NatSci Masters Conferrals, by Race/Ethnicity

	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	49%	53%	39%	46%	46%	48%	47%	53%	56%	59%	49%
Students of Color	7%	4%	9%	5%	9%	10%	10%	13%	13%	8%	6%
African American/Black	0%	0%	2%	0%	0%	0%	1%	1%	3%	1%	0%
Asian	---	---	---	1%	3%	1%	3%	4%	2%	0%	3%
Asian/Pacific Islander	2%	1%	2%	---	---	---	---	---	---	---	---
American Indian/Alaska Native	1%	0%	0%	0%	1%	0%	0%	1%	0%	0%	0%
Hispanic/Latinx	2%	2%	2%	2%	2%	5%	1%	1%	2%	3%	3%
Other & Blank	2%	1%	3%	2%	4%	5%	3%	5%	3%	1%	0%
Multiracial	---	---	---	0%	0%	0%	1%	1%	3%	3%	0%
International	44%	43%	52%	50%	45%	41%	43%	34%	31%	33%	45%

Table 26. NatSci Doctoral Conferrals, by Race/Ethnicity

	07-08	08-09	09-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18
White	39%	43%	40%	37%	44%	47%	45%	40%	45%	45%	52%
Students of Color	6%	7%	9%	10%	12%	6%	13%	11%	9%	8%	14%
African American/Black	0%	1%	0%	0%	2%	0%	1%	0%	0%	0%	1%
Asian	---	---	---	1%	3%	2%	1%	4%	2%	2%	3%
Asian/Pacific Islander	2%	2%	2%	---	---	---	---	---	---	---	---
American Indian/Alaska Native	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%	0%
Hispanic/Latinx	1%	1%	2%	1%	1%	1%	3%	2%	3%	1%	6%
Other & Blank	3%	3%	4%	7%	4%	2%	8%	4%	4%	4%	3%
Multiracial	---	---	---	1%	2%	1%	1%	2%	0%	1%	0%
International	55%	50%	52%	53%	44%	47%	42%	49%	46%	47%	35%

Appendix D: Department DEI Initiatives

1. College of Natural Science

- a. New diversity webpage under development: <https://diversity.natsci.msu.edu>
 - i. Diversity, Equity and Inclusion (DEI) Advisory Committee - in development
- b. Web page:
 - i. "Diversity" tab on main page with links to:
 1. Council on Diversity and Community Charles Drew Science Scholars Program
 2. CDC Mission Statement
 3. Current Events/Listserv
 4. Diversity and Equity Training Hosted by the NatSci CDC
 5. NatSci Statement on Federal Executive Orders

2. Actuarial Science Program

3. Biochemistry and Molecular Biology

- a. Web page:
 - i. "Diversity" tab on main page with links to:
 1. Programs offered to increase diversity in research at MSU:
 - a. Charles Drew Science Scholars Program
 - b. Plant Genomics @ Michigan State University
 - c. Summer Research Opportunities Program (SROP)
 - d. With a picture of "2014 IDEAS students visiting Harvard"

4. Biomedical Laboratory Diagnostics Program

- a. Website:
 - i. DEI statement under About/BLD Community Norms tabs

5. Biological Sciences Program

- a. They are currently developing DEI initiatives

6. Cell and Molecular Biology Program

7. Center for Advanced Microscopy

- a. They are working on a statement regarding DEI that will ultimately be posted on their web page.

8. Department of Chemistry

- a. Website:
 - i. Under "About" tab on the main page there is a:
 1. Fostering Diversity tab
 - a. Links & Statement: We are committed to promoting an inclusive environment for all individuals regardless of gender, race or sexual orientation. Our ongoing diversity efforts are designed to positively impact the academic, professional and personal growth of our underrepresented minority faculty and students.
 - ii. Also, the 2017 Summer REU Interns: Cross-Disciplinary Training in Sustainable Chemistry and Chemical Processes has a blurb under overview of the program:
 1. The Department of Chemistry is a highly diverse community of faculty, staff and students who come from regions across the

nation and the entire world. **Our inclusive environment welcomes individuals of all genders, races, sizes, or sexual orientations. Our continued and ongoing diversity efforts have positively impacted the academic, professional and personal growth of our faculty and students from under-represented demographic groups.**

9. Computational Mathematics Science and Engineering

a. Website:

- i. Under the “Events” tab on the main page there is an event called iCER & CMSE - Research Computing Cowork: MSU's Institute for Cyber-Enabled Research is coordinating with CMSE to host an event of people from diverse backgrounds to work to share space and ideas.

10. Department of Earth and Environmental Sciences

11. Ecology, Evolutionary Biology, and Behavior (EEBB)

- a. In conjunction with KBS, they have developed an “Inclusive Science Series” of visits from minority scientists.

12. Environmental Science & Policy Program

- a. Website: they have funding opportunity for “members of underrepresented minority groups, and persons with disabilities to apply”.

13. Genetics Program

14. Human Biology Program

a. Website:

- i. They have the NatSci’s Diversity tab as it is under the NatSci umbrella.

15. Integrative Biology

- a. They are developing a DEI policy that includes identifying a DEI officer, establishing a DEI committee and creating website material.

16. Integrative Studies in General Science

17. W.K. Kellogg Biological Station (KBS)

- a. In conjunction with EEBB, they have developed an “Inclusive Science Series” of visits from minority scientists

18. Department of Mathematics

- a. They are developing a DEI policy that includes identifying and placing a DEI officer on each major committee within their department. The policy will be posted on the department web page, along with the names of the DEI officers.

19. Department of Microbiology & Molecular Genetics

20. Molecular Plant Sciences

21. Neuroscience Program

22. Department of Physics and Astronomy

23. Department of Physiology

- a. They have started discussion in their FAC as to a committee, statement, representative, and/or combination of these things

24. Department of Plant Biology

- a. They have a DEI policy statement on Diversity, Equity and Inclusion

- i. *“The Department of Plant Biology values diversity, reject judgments based on differences, and instead embrace those differences as assets. We are a community of people from a variety of backgrounds and experiences. As reflected in our motto, “from molecules to ecosystems”, our strength lies in*

encouraging diverse perspectives and approaches to science. Our department is committed to being a leader on the path towards diversity and equality. We strive for positive institutional and cultural change, with the goal of ensuring that the Department reflects and upholds our shared ideals as scientists, educators, scholars, students, and community members. We are committed to identifying ways to build a culturally diverse environment by listening to our community members and implementing practices to foster inclusivity. We pledge to improve campus climate pertaining to ableism, ageism, ethnocentrism, homophobia, racism, religious oppression, sexism, sexual misconduct, transphobia, and other forms of marginalization. Our success depends on our diversity and together we will shape the future.”

- b. They have a set “Cultural Standards for Evaluation, Reappointment, Tenure and Promotion” policy.
- c. Website:
 - i. Under the “Graduate programs” tab on the main page, “Graduate Student Organization” tab that leads to “Officers and Committees”
 - 1. Where they mention that Jason Olsen is a member of the Council on Diversity & Community (CDC).

25. MSU-DOE Plant Research Laboratory (PRL)

26. Program in Mathematics Education

- a. Website:
 - i. Under each of the “Research projects” tab on the main page there is a:
 - 1. “Reciprocal Noticing: Latino/a Students and Teachers Constructing Common Resources in Mathematics” project link funded by National Science Foundation, REESE program

27. Quantitative Biology & Modeling Initiative

28. Statistics and Probability

Note: Almost every department/program has a “Giving” tab for donations and very few departments/programs posted their Bylaws on their website.

Appendix E: Sample SIRS form (questions vary by department)

- (1) The instructor's enthusiasm when presenting course material.
 - (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (2) The instructor's interest in teaching.
 - (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (3) The instructor's use of examples or personal experiences to help get points across in class.
 - (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (4) The instructor's concern with whether the students learned the material.
 - (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (5) Your interest in learning the course materials.
 - (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (6) Your general attentiveness in class.
 - (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (7) The course as an intellectual challenge.
 - (1) Superior
 - (2) Above Average
 - (3) Average

- (4) Below Average
 - (5) Inferior
- (8) Improvement in your competence in this area due to this course.
- (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (9) The instructor's encouragement to students to express opinions.
- (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (10) The instructor's receptiveness to new ideas and others' viewpoints.
- (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (11) The student's opportunity to ask questions.
- (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (12) The instructor's stimulation of class discussion.
- (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (13) The appropriateness of the amount of material the instructor attempted to cover.
- (1) Superior
 - (2) Above Average
 - (3) Average
 - (4) Below Average
 - (5) Inferior
- (14) The appropriateness of the pace at which the instructor attempted to cover the material.
- (1) Superior
 - (2) Above Average
 - (3) Average

(4) Below Average

(5) Inferior

(15) The contribution of homework assignments to your understanding of the course materials relative to the amount of time required.

(1) Superior

(2) Above Average

(3) Average

(4) Below Average

(5) Inferior

(16) The appropriateness of the difficulty of assigned reading topics.

(1) Superior

(2) Above Average

(3) Average

(4) Below Average

(5) Inferior

(17) The instructor's ability to relate the course concepts in a systematic manner.

(1) Superior

(2) Above Average

(3) Average

(4) Below Average

(5) Inferior

(18) The course organization.

(1) Superior

(2) Above Average

(3) Average

(4) Below Average

(5) Inferior

(19) The ease of taking notes on the instructor's presentation.

(1) Superior

(2) Above Average

(3) Average

(4) Below Average

(5) Inferior

(20) The adequacy of the outlined direction of the course.

(1) Superior

(2) Above Average

(3) Average

(4) Below Average

(5) Inferior

(21) Your general enjoyment of the course.

(1) Superior

(2) Above Average

(3) Average

(4) Below Average

(5) Inferior

(22) Was this course required in your degree program?

(1) Yes

(2) No

(23) What is your sex?

(1) Male

(2) Female

(24) What is your overall GPA?

(1) 1.9 or less

(2) 2.0 - 2.2

(3) 2.3 - 2.7

(4) 2.8 - 3.3

(5) 3.4 - 4.0

(25) What is your class level?

(1) Freshman

(2) Sophomore

(3) Junior

(4) Senior

(5) Graduate or other

(26) Do you have any comments or suggestions for organizing the course?

(27) What things about the course helped you learn?

(28) If a friend asks you about this course, what would you tell them?

Appendix F: Proposed Updates to SIRS form

Student Course Feedback approved by FAC

Purpose: Student feedback is essential in course improvement. This survey is solely intended to be an instructor resource.

Timing: This survey can be administered during or at the conclusion of a semester.

This tool should be adaptable to completion by a smart phone app.

Yes/No

1. Course expectations are/were clearly stated.

Comment

2. The course is/was organized.

Comment

3. I am/was able to find the required course materials.

Comment

4. Homework, lectures and other coursework prepare(d) me for assessments (exams, projects, portfolio).

Comment

5. Assignments are/were graded and feedback provided in a timeframe that helped me improve my performance.

Comments

6. Assessments are/were based on course learning objectives.

Comment

7. The instructor is/was prepared for class.

Comment

8. The instructor is/was clear.

Comment

9. The instructor is/was respectful to students.

Comment

10. The instructor was available to help students.

Comment

Open Ended Questions

What about this course most helps/helped you learn?

What about this course was a barrier to learning?

Appendix G: College-Level Bylaws for Diversity, Equity, and Inclusion Advisory Committee

We are proposing that the Diversity, Equity, and Inclusion (DEI) Advisory Committee be considered as a Standing Committee of the NatSci. This proposed college-level Diversity, Equity, and Inclusion Committee would replace the current Council on Diversity and Community (CDC).

The focus of the Diversity, Equity and Inclusion Committee shall be to address persistent, systemic, and emergent issues within the following six focus areas identified by the MSU Office for Inclusion and Intercultural Initiatives to guide diversity, equity, and inclusion initiatives for all MSU units: 1) Leadership, 2) Access, Retention, Advancement (applicable to faculty, staff, and undergraduate and graduate students, 3)Research, 4)Curriculum (formal and informal), 5) Campus Climate and 6)External Engagement.

Initiatives within these areas, implemented with an accountable and transparent decision-making process, will focus on creating a supportive and welcoming environment where all NatSci students, faculty, and staff can pursue academic and professional success.

Below is the text approved by the FAC on November 8, 2018 to be put forward for faculty vote to be included in the bylaws.

College of Natural Science Bylaws (It should be under 3.4. The Standing Committees of NatSci)

3.4.9 Diversity, Equity, and Inclusion Advisory Committee

- 3.4.9.1. Composition and Election
 - 3.4.9.1.1. Each academic unit within NatSci, regardless of its size, shall have one elected representative [1] on the NatSci Diversity, Equity, and Inclusion Committee. An "academic unit" designates a NatSci budgetary unit and/or a degree-granting unit of NatSci.
 - 3.4.9.1.2. All NatSci members shall be eligible for election as representatives on the NatSci Diversity, Equity, and Inclusion Committee, with the following exceptions: (1) The chairpersons of departments or heads of academic units; (2) The dean and other NatSci college-level administrators.
 - 3.4.9.1.3. The academic unit representatives from academic units shall each be elected or appointed by the faculty or chairperson of each academic unit from among their own memberships in a manner to be decided upon by each unit. Vacancies on the council shall be filled by the unit so affected to complete the unexpired term.
 - 3.4.9.1.4. The members of the NatSci Diversity, Equity, and Inclusion Committee shall be elected during spring semester and shall take office beginning August 16.
 - 3.4.9.1.5. NatSci Diversity, Equity, and Inclusion Committee members shall be elected for a two-year term and no member may be elected for more than three consecutive terms.
 - 3.4.9.1.6. The NatSci Diversity, Equity, and Inclusion Committee shall select one representative to the NatSci Faculty Advisory Council to serve as liaison between the two councils. If the liaison is not an elected member of the NatSci Diversity, Equity, and Inclusion Committee, he/she/they will serve as an ex officio member, without vote (see Bylaws for Academic Governance Section 2.2.5.1).
 - 3.4.9.1.7. NatSci Diversity, Equity, and Inclusion Committee shall select two representatives to serve as ex-officio members (without vote) on the NatSci Student Advisory Council. Diversity, Equity, and Inclusion Committee members will

be selected at the beginning of the academic year and serve one year on Student Advisory Council.

- 3.4.9.1.8. Two undergraduate and at least one graduate student selected annually by the NatSci Student Advisory Council shall serve on the NatSci Diversity, Equity, and Inclusion Committee. They shall have both voice and vote except in those areas reserved to the faculty in Section 1.2.3 of the Bylaws for Academic Governance.
- 3.4.9.1.9. One postdoctoral scholar with an appointment in NatSci selected annually by the MSU Postdoctoral Association or successor organization shall serve on the NatSci Diversity, Equity, and Inclusion Committee. They shall have both voice and vote except in those areas reserved to the faculty in Section 1.2.3 of the Bylaws for Academic Governance.
- 3.4.9.1.10. Additional voting members may be added at the committee's discretion.
- 3.4.9.2. Functions
 - 3.4.9.2.1. The NatSci Diversity, Equity, and Inclusion Committee shall advise the dean on any matter which the dean or a member of the NatSci Diversity, Equity, and Inclusion Committee or at least ten members of NatSci bring before it.
 - 3.4.9.2.2. The NatSci Diversity, Equity, and Inclusion Committee shall have delegated authority to nominate NatSci representatives to the Academic Council, to standing committees thereof, and to other elected All-University Committees and to supervise elections to these bodies.
 - 3.4.9.2.3. The NatSci Diversity, Equity, and Inclusion Committee shall recommend, review, and evaluate policies and programs that affect the diversity of the faculty, staff, and students of NatSci, as well as the inclusivity efforts of the college. It shall advise and consult with the Dean and units and offices in the six focus areas identified by the MSU Office for Inclusion and Intercultural Initiatives to guide diversity, equity, and inclusion initiatives for all MSU units: 1) Leadership; 2) Access, Retention, Advancement (applicable to faculty, staff, and undergraduate, and graduate students); 3) Research; 4) Curriculum (formal and informal); 5) Campus Climate; and 6) External Engagement.
 - 3.4.9.2.3.1. The NatSci Diversity, Equity, and Inclusion Committee shall have shared responsibility in making recommendations for improving persistent, systemic, and emergent conditions in the six core areas identified above. This includes, but is not limited to shared responsibility for assessment of equity and diversity issues at the college level.
 - 3.4.9.2.4. The NatSci Diversity, Equity, and Inclusion shall coordinate its activities with other standing committees on affairs relevant to their focus areas. The committee will present to NatSci members such matters that it deems appropriate for discussion and/or action.
 - 3.4.9.2.5. The NatSci Diversity, Equity, and Inclusion Committee shall facilitate connections to other resources or bodies concerned with issues of inclusion, equity, or diversity in the Departments, College, or University.
- 3.4.9.3. Procedures
 - 3.4.9.3.1. The NatSci Diversity, Equity, and Inclusion Committee shall elect its own chairperson, vice-chairperson, and secretary at the start of every academic year and they shall serve a one-year term of office.
 - 3.4.9.3.2. The NatSci Diversity, Equity, and Inclusion Committee shall meet at least once each month during the academic year. Additional meetings may be called by the dean or by the chairperson, and must be convened on written request of three committee members.
 - 3.4.9.3.3. The chairperson of the NatSci Diversity, Equity, and Inclusion Committee, in consultation with the dean, shall prepare an agenda for each

- meeting of the NatSci Diversity, Equity, and Inclusion Committee. Copies of the agenda for each regular meeting of the NatSci Diversity, Equity, and Inclusion Committee shall be sent to each academic unit no less than forty-eight hours preceding said meeting.
- 3.4.9.3.4. In addition to the dean and/or the dean's designees or assistants, any interested person may attend any given meeting of NatSci Diversity, Equity, and Inclusion Committee.
 - 3.4.9.3.4.1. They may be heard at said meeting upon obtaining either the consent of the chair, two voting members of the NatSci Diversity, Equity, and Inclusion Committee or the written request of five members of the regular voting faculty of NatSci.
 - 3.4.9.3.5. Each member of the NatSci Diversity, Equity, and Inclusion Committee will report to the academic unit they represent at least once a semester.
 - 3.3.2.3.6. Action may be taken by a majority of a quorum. A quorum shall consist of those NatSci Diversity, Equity, and Inclusion Committee members in actual attendance.

[1] faculty member, academic specialist, graduate student, postdoc or support staff member

Appendix H: Diversity, Equity, and Inclusion Training Timeline (CIEG proposal)

Phase 1: January 2019

- Development of a full-day cultural competency training by Dionardo Pizaña from Michigan State University Extension (MSUE) and Karen Pace from Pace 4 Change to include topics of group identity, power and privilege, and four levels of oppression.
- Two, one-day trainings (same training repeated twice) on January 15 and 23, 2019 led by Dionardo Pizaña and Karen Pace. A mixed group of NatSci senior leaders, chairs/directors, faculty, staff, and graduate students will be invited by the dean to participate.
- 2 hr. debriefing meeting with training planning team, led by Dionardo Pizaña and Karen Pace, in January
- Development of assessment and evaluation tools

Phase 2: February - April 2019

- Train-the-Trainer sessions (6-day full-day trainings on Feb. 11, March 5-7, 19th, and April 1st) led by Karen Pace and Dionardo Pizaña. Potential facilitators will be selected through an application process reviewed by the NatSci Council on Diversity & Community to ensure that they have already done their own work on equity and inclusion
- Phase 2 trainings will be two, one-day trainings (same curriculum as Phase 1 training) on April 10th and 11th led by Karen Pace and Dionardo Pizaña with assistance from the NatSci facilitation team. A mixed group of NatSci senior leaders, chairs/directors, faculty, staff, and graduate students will be invited by the dean to participate.
- Two, 2-hour debriefing meeting with NatSci facilitation team members to be held in the evening following the Phase 2 trainings on April 10th and 11th led by Karen Pace and Dionardo Pizaña.
- Assessment of training

Phase 3: May - August 2019

- NatSci trainers co-facilitate training sessions (curriculum developed in Phase 1) for mixed group of NatSci senior leaders, chairs/directors, faculty, staff, and graduate students
- One, 2-hour meeting with NatSci facilitation team to debrief phase 3 training when they are completed, led by Dionardo Pizaña and Karen Pace
- Assessment of trainings