

## THE TIME IS NOW

Systemic Changes to Increase African  
Americans with Bachelor's Degrees in  
Physics and Astronomy

### Appendix 8: Departmental Self-Assessment Rubric



TEAM+UP

## APPENDIX 8: DEPARTMENTAL SELF-ASSESSMENT RUBRIC

The findings and recommendations of this report suggest a way for physics and astronomy departments to evaluate their effectiveness in educating African American students. This Appendix provides a self-assessment rubric modeled after one created by the New England Resource Center for Higher Education<sup>9</sup> and a similar one created by the AAS Task Force on Diversity and Inclusion in Graduate Education (Appendix X of Agüeros et al. 2019).

This rubric is organized into five areas corresponding to the themes of this report: Belonging, Physics Identity, Academic Support, Personal Support, Leadership and Structures. The rows correspond to the topics listed in Table 1 of the Change Management chapter, with a few changes to tailor the rubric to departments. The entries are meant to be typical of practices at each of three stages of progress toward the recommendations of this report. A department's actual practices will vary.

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<sup>9</sup> Available at [http://rengaconsulting.com/wp-content/uploads/2018/04/nerche\\_pi\\_rubric\\_self-assessment\\_2017.pdf](http://rengaconsulting.com/wp-content/uploads/2018/04/nerche_pi_rubric_self-assessment_2017.pdf)

## Belonging

	Stage 1: Emerging	Stage 2: Developing	Stage 3: Transforming
Faculty role	Most of the department's faculty focus on their research, though they take pride in their teaching. They feel that they treat all students equally.	Many of the faculty have taken a workshop on inclusion and belonging and they discuss student engagement in departmental meetings. The department holds several annual social events attended by students and faculty.	The department recruits faculty who are committed to supporting the success of every student in their program. All faculty welcome learning about the experiences of marginalized students and they recognize their own potential biases. Students say that faculty show in countless ways, large and small, that they care, including by skillfully rejecting stereotypes and ending microaggressions.
Student role	Students self-segregate by race, with only White and Asian students using the undergraduate common room. Comments such as "you're only here because of your race" are not challenged.	The department has created a code of conduct or values statement that stresses everyone is welcomed and valued in classrooms, student clubs, and common spaces. Minoritized students regularly hold leadership positions in SPS.	The department hosts discussion forums for students and faculty about belonging, stereotype threat, imposter phenomenon, and microaggressions. Minoritized students have their own club dedicated to recruiting and supporting new students. They also participate fully in SPS and common spaces.
Counterspaces	Black students are isolated in the department and university. They receive support from family members back home.	Black students participate in a campus-wide STEM or non-STEM association for Black scholars and they have a dedicated study space created by the office of student affairs.	The department creates a dedicated study space for students of color staffed by an expert in racial identity development. The department pays for a group of students, staff, and faculty to attend the annual NSBP conference. Faculty recognize the importance for students to find places where they can just be themselves.
Climate	The department is described as a praise-free zone where only the toughest are meant to survive. Students who suffer are told by peers that they should change majors.	The department chair periodically communicates norms and values of respect and inclusion. The department hosted a CSWP/COM Climate Site Visit but has not fully acted on the resulting recommendations.	The department consistently addresses concerns arising from a triennial climate assessment that factors in race/ethnicity/gender and other social identities. The strong sense of belonging of minoritized students has attracted the attention of peer departments, who want to learn how to be as successful.
Harassment response	Faculty are unsure what to do when an advisee describes experiencing sexual (or any other type of identity-based) harassment. The department chair calls Human Resources for help.	Faculty are knowledgeable about their reporting obligations under Title IX. They are familiar with their campus's bias response protocol.	Identity-based harassment claims are promptly reported to university authorities. The department has designated faculty, staff, postdoc, and student advocates who support a harassment-free environment.

## Physics Identity

	Stage 1: Emerging	Stage 2: Developing	Stage 3: Transforming
Faculty role	When asked to describe the ideal physics student, most faculty reply, “someone like me.” Most believe that success in physics requires only talent and hard work.	Most faculty understand the benefits of recognizing student success and giving encouragement. They send congratulatory notes to marginalized students for achievements and milestones.	The department tracks academic progress and analyzes differences by race, ethnicity, and gender. Faculty utilize evidence-based practices to strengthen students’ sense of physics identity, including encouragement and recognition. The department funds student travel for physics-related career opportunities.
Student Role	Black students do not view themselves as part of the department, and often isolate themselves (e.g., they come to the department only to attend classes).	Black students come to departmental seminars and seek opportunities to participate in undergraduate research.	When asked to describe the ideal physics student, marginalized students respond that it could be someone like them.
Curriculum and Co-curriculum	Faculty encourage undergraduates to join their research group and select the “strongest” students.	The department has a Learning Assistant program and supports undergraduate attendance to identity based conferences (such as CU2MiP and the NSBP Conference).	The department utilizes physics education research methods, disaggregating by social identities, to assess whether their current activities foster physics identity. Working with students, faculty seek continuous improvement in their co-curricular support for physics identity development.
Faculty diversity	Faculty recruitment seeks the “best” hires based on letters of recommendation and who presents most strongly in their interview.	Faculty search committees are aware of implicit bias and utilize recommended search practices. They invite a diverse set of candidates to interview, but have not been able to retain faculty of color.	The department raised funds for an endowed chair designated to support equity and inclusion. Cluster hiring is utilized to recruit additional faculty of color, who join White faculty to mentor a growing number of underrepresented students.
Prosocial behaviors	Faculty are unaware of students’ interests and activities related to outreach and community service. Academic success is what matters.	Faculty recognize and validate students’ interests in outreach because it helps with recruitment. They invite successful alumni of color to speak to students.	Faculty communicate the ways in which a physics degree empowers graduates to improve society with particular benefit to marginalized groups. They volunteer alongside students in events that serve minoritized communities.
Career options	Career advising is left to a central campus office; faculty discuss graduate school options with students whom they think will succeed.	The department highlights the AIP/SPS Careers Toolbox during the departmental open house for recruitment and during a students’ third year when advisers discuss career options with their advisees.	Every year the departmental colloquium series includes a physics alum working outside the profession. Faculty speak with equal pride about alumni working for non-profits, government, industry, and academia.

## Academic Support

	Stage 1: Emerging	Stage 2: Developing	Stage 3: Transforming
Faculty preparation	Faculty have the opportunity to attend workshops at the campus center for teaching and learning.	All new faculty are encouraged to attend the New Faculty Workshop hosted by the AAPT in conjunction with the AAS and APS.	Department meetings feature discussions about pedagogy and curriculum. Senior and junior faculty participate in workshops on teaching and mentoring.
Faculty commitment	Most faculty are not engaged as mentors of undergraduate students. Faculty of color are not recognized for their informal mentoring of students of color.	The department has several exemplary mentors who regularly meet with majors.	The department tracks faculty time in both formal and informal mentoring and reduces other service obligations to compensate for these contributions. The department also funds a student-nominated prize for mentor of the year.
Advising	Faculty advisers meet with students once per term only to approve their class registration.	Faculty advisers complement professional advisers who support students' non-academic needs. The campus utilizes intrusive advising.	Faculty regularly check in with their advisees and get to know them personally. When concerns arise about academic, financial, or other issues, they contact the staff professional adviser.
Curriculum	There is one track for majors that begins with calculus-based mechanics and ends with a senior thesis as preparation for graduate school.	The major has several options for students interested in different careers. Students are also recruited into the department through popular general education classes.	The department regularly and quantitatively assesses recruitment activities and curricular pathways, identifying points at which students leave before graduation. With this information, faculty develop evidence-based, actionable plans to increase the persistence of all students to the degree.
Resource guide for students	The department website lists contact information for departmental staff, but no information on whom to turn to for help.	The department website includes a guide to the major, with detailed information on the support each office gives. The accessibility office reviews the website.	The department regularly asks students to review the departmental guide to the major for clarity, accuracy, and completeness. Every academic adviser discusses it with advisees.

## Personal Support

	Stage 1: Emerging	Stage 2: Developing	Stage 3: Transforming
Financial	The department is generally unaware of students' financial needs. When questions arise they direct students to the financial aid office.	When departmental staff or faculty learn of a student's financial difficulties, they direct them to an emergency grant program.	Faculty are trained to recognize issues, circumstances and challenges affecting low-income students and to recognize opportunities to engage them with helpful information. Faculty know the relevant administrators in the financial aid and student services offices.
Paid work	Faculty grant proposals include requests for support of summer research students.	Faculty utilize campus resources to pay undergraduate research students during academic terms. They also advertise openings for student workers in the department.	The department has a paid Learning Assistants program and a portal advertising other paid positions for undergraduates. Faculty are aware of the limited time some students have on campus outside of classes due to work or other circumstances, and accommodate student needs accordingly.
Mental health	Mental health needs are not discussed in the department. All students are expected to be equally able, unless the student disabilities office informs the faculty otherwise.	Faculty show empathy to students who reveal they are under stress. They encourage students to seek help but are unsure where students can find it.	Faculty and staff normalize seeking help by discussing stress and self-care with students and referring them to campus resources. They provide extra time for assignments, emergency financial aid, and referral to counseling resources to students under financial, familial, or other forms of stress.
Intersectional identity	Faculty make an effort to treat all students the same. They appreciate diversity but do not understand why some students cannot leave their social identity outside the classroom and lab.	Faculty make an effort to learn individual students' backgrounds and interests outside the classroom. They recognize that students are different now than when the faculty member was a student.	Most faculty members understand and are comfortable discussing social identities, intersectionality, stereotypes, and marginalization. They recognize the unique promise of each student from a perspective of strengths rather than weaknesses. They join students in discussions of societal issues of concern to students.

## Leadership and Structures

	Stage 1: Emerging	Stage 2: Developing	Stage 3: Transforming
Department chairs	Department chairs rotate every three years and serve to keep basic processes running, like assigning teaching and responding to problems. There is little scope for action.	The department chair strives to hear from students, staff, and faculty, and to leave the department in better shape than when they began. With learning from the APS New Department Chairs workshop and mentoring from the Dean, the chair is working to increase faculty diversity and set norms and values of inclusion and belonging. The department chair invites speakers from underrepresented groups.	The department has adopted a values statement and a code of conduct and has prepared a strategic plan for diversity and inclusion. The department chair convenes a monthly equity and inclusion luncheon open to everyone in the department and periodically hosts colloquia on the same topics. Given the department's success, the chair also advises other departments on how to enhance the success of African American students.
McNair and similar programs	The department does not engage with programs offered by student affairs or the multicultural center.	The department newsletter highlights the induction of McNair Scholars and showcases their academic success as part of its strategy to recruit additional African American majors.	The department partners with and financially supports campus programs for African American students, recognizing the importance of such programs for student belonging, professional identity development, and academic and personal support.
Campus resources	Physics faculty are aware of some campus resources to help students but do not know which ones are most helpful for specific needs.	Departmental administrators are well informed about campus resources including student affairs offices, dual-degree programs, research funding programs, multicultural centers, and tutoring centers. When students approach them with problems, they point students to help.	Faculty teaching large classes, undergraduate advisers, the SPS adviser and others regularly communicate with the administrators overseeing key support offices across campus. They are all part of a web of support for students.
Incentives and rewards	A lone champion on the faculty advocates consistently for, and provides personal support to, minoritized students. Ultimately, when this champion burns out, fails to get tenure, retires, or leaves the university, a void in support is felt by minoritized students.	Consistently with the stated departmental value of empowering students, the department chair provides funding and teaching releases to several faculty who mentor and support minoritized students.	The department norms and values hold every faculty member accountable for the success of all students. Faculty annual performance review, merit raises, and award nominations consider recruitment and mentoring of underrepresented students and other efforts advancing equity and inclusion.

6ab: Departmental Learning and Change	<p>The department has little capacity to review national reports. Guidance for change comes internally from the Dean.</p>	<p>The department aspires to learn from reports of the physics and astronomy professional societies. Speakers are occasionally invited to present on these efforts but faculty generally see no reason to change.</p>	<p>Faculty are strongly committed to improving educational outcomes for underrepresented students. A Departmental Action Team includes faculty, staff, and students dedicated to assessing the culture and preparing a theory of change. The team has the support of the department chair and all members have attended a national workshop on leading change in physics departments.</p>
6c: Faculty preparation and training	<p>Some new faculty members attend the national physics and astronomy New Faculty Workshop. Their enthusiasm for innovation in education wanes when they learn that achieving tenure requires a single-minded focus on research.</p>	<p>The department encourages faculty of all ranks to propose new directions in education and diversity efforts, and supports faculty travel for professional development.</p>	<p>To support its newly formed equity and inclusion committee, the department has joined a national network organized by the professional societies. Coaches and facilitators work with committee members to help them create a culture of caring that can spread in the department.</p>
6e: Ongoing data collection, assessment, and accountability	<p>The departmental HR representative collects basic demographic data required by the institution for every enrolled student, postdoc, and employee: binary gender, race/ethnicity, and citizenship/visa status.</p>	<p>The department invites members to provide additional optional data on multiple social identities including gender identity, first generation college status, and anything else the member feels is important to their identity. The academic progress of majors through the curriculum is tracked and is used only by advisers for mentoring purposes.</p>	<p>The department performs annual self-audits on equity, inclusion, and accessibility as well as education, recruitment, and other processes, using self-assessment rubrics similar to this one. Policies and procedures are periodically reviewed for efficacy and equity across social identities and updated as needed. Every year the department prepares a summary of quantitative, qualitative, and descriptive data on diversity, equity, and inclusion for sharing with the Dean and visiting committees.</p>