Improving equity, diversity, and inclusion in a physics department: Recommendations from the EP3 Guide

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American Physical Society

June 8, 2022 – RHIC & AGS Annual Users' Meeting

What is the EP3 Guide?

A living collection of knowledge & practices to support physics programs with collections of knowledge, experience, and proven good practice for responding to challenges and engaging in systematic improvement

- Led by APS, in collaboration with AAPT
- Supported by NSF and APS
- Based on research & experience of US physics community

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EP3 Guide Content

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EP3
Effective
Practices
for Physics
Programs

33 sections on how to run every aspect of your physics program

Students

- *Recruiting of Undergraduate Physics Majors*
- *Retention of Undergraduate Physics Majors*
- *Advising and Mentoring of Students*
- *Internships*
- *Undergraduate Research*
- *Career Preparation*
- Preparing Students for Graduate School

Department

- *How to Be an Effective Chair*
- How to Create Effective Change
- *How to Create & Use a Strategic Plan*
- How to Create & Use Foundational Docs
- *The Physical Environment*
- *Departmental Culture and Climate*
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- *Ethics*
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Programs

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- *High School Physics Teacher Prep.*
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Curriculum and Pedagogy

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- Communication Skills
- *Instructional Labs & Experimental Skills*
- *Computational skills*
- *Capstone Experiences*
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- How to Assess Student Learning

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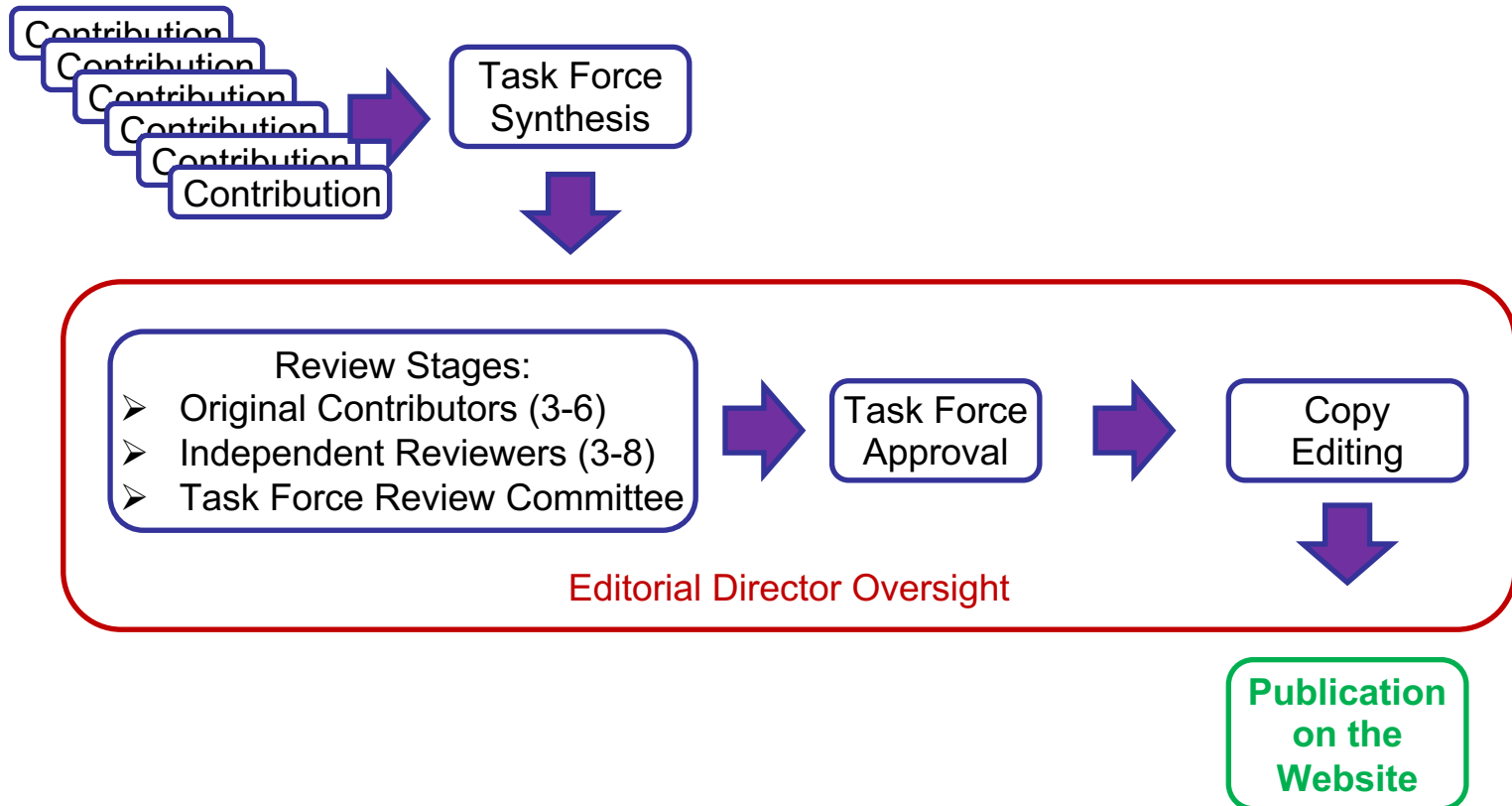
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Contribution
Contribution
Contribution
Contribution
Contribution
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EP3 Effective Practices for Physics Programs

Description   Benefits   Effective Practices   Programmatic Assessments   Resources   Evidence   Glossary

1. Educate yourself and your department members (faculty, students, staff, and postdocs) about equity, diversity, and inclusion

- A. **Learn about equity, diversity, and inclusion in physics**

    1. Understand the differences between equity, diversity, and inclusion. Ensure that your initiatives address all of them, prioritizing equity above inclusion and inclusion above diversity, as discussed above.

    2. Learn about stereotype threat, impostor phenomenon, implicit bias, myth of meritocracy, color blindness, microaggressions, privilege, and marginalization. Hover over any underlined term in this section to see its definition, and see Evidence below for details. Recognize your personal role, and the role of your departmental policies, in perpetuating or mitigating the effects of each of these phenomena on members of your department.

    3. Learn about how underrepresentation, bias, and negative experiences of people from marginalized groups manifest themselves within physics. See Resources and Evidence below.

    4. Recognize that physics culture's emphasis on excellence and intelligence usually hides an implicit bias against groups or people who appear to lack the "natural ability" to do physics because they are underprepared due to historical inequities and marginalization and/or because their skills are not recognized due to cultural differences. Recognize the ways in which physics culture rewards those who have

In This Section

📰 **Effective Practices**   ⌄

1. Educate yourself and your department members (faculty, students, staff, and postdocs) about equity, diversity, and inclusion

2. Analyze the current state of affairs for marginalized groups in your department

3. Create, publicize, implement, and assess an action plan for equity, diversity, and inclusion

4. Pay separate attention to the particular needs and concerns of different groups and individuals

5. Use known strategies to improve equity, diversity, and inclusion

✏️ **Programmatic Assessments**   ⟩

Equity, Diversity, and Inclusion

- Effective practices for making your department more equitable and inclusive for members of marginalized groups

Departmental Culture and Climate

- Effective practices for improving your departmental climate for everyone

Sources for EDI recommendations

Synthesis of contributions and reviews from experts in the physics community on equity, climate, and issues facing people of color, women, LGBTQ+ people, and disabled people

along with recommendations from key reports and publications:

- The Time is Now: Systemic Changes for Increasing African Americans in Physics & Astronomy (TEAM-UP report) (2020)
- Report on the Conference for Enhancing Undergraduate Physics Programs at Hispanic-Serving Institutions (2019)
- LGBT Climate in Physics: Building an Inclusive Community (2016).]
- LGBT+ Inclusivity in Physics and Astronomy: A Best Practices Guide (2018)
- APS CSWP Effective Practices for Recruiting and Retaining Women in Physics
- ADVANCE program resources

Equity, Diversity, and Inclusion

- **Diversity**: recruiting people from marginalized groups into your department and retaining them, so that all levels of physics are representative of the range of people who could be physicists.

- **Inclusion**: creating an environment that supports everyone in feeling welcome in your department.

- **Equity**: ensuring that everyone has what they need to thrive in your department, which requires taking into account the ways that some groups of people have been and continue to be marginalized in society and in physics, and recognizing and challenging the structural and cultural barriers to full participation in physics and in your department that people from marginalized groups face.

Effective Practices for Physics Programs

Key recommendations for improving EDI in your department

1. Educate yourself and your department members about EDI

2. Analyze the current state of affairs for marginalized groups in your department

3. Create, publicize, implement, and assess an action plan for EDI

4. Pay separate attention to the particular needs and concerns of different groups and different individuals

5. Use known strategies to improve EDI

EP3 — Effective Practices for Physics Programs

Key recommendations for improving EDI in your department

1. **Educate yourself and your department members about EDI**

Examples:

Learn about <u>stereotype threat</u>, <u>impostor phenomenon</u>, <u>implicit bias</u>, <u>myth of meritocracy</u>, <u>color blindness</u>, <u>microaggressions</u>, privilege, and marginalization. Hov[...] see its definition, and see E[...] rsonal role, and the role of y[...] mitigating the effects of each o[...] artment.

Impostor Phenomenon

A phenomenon in which a person doubts their own skills and accomplishments, attributes their success to luck rather than hard work or skill, and fears that they are an impostor who does not deserve the things they have earned. We use the original term, impostor phenomenon, rather than the more commonly used term, impostor syndrome, to emphasize that this is not a medical condition to be attributed to individuals, but a phenomenon shaped by interpersonal and social contexts that may lead people, particularly those from marginalized groups, to question their skills and accomplishments. Review article

Identify and partner v[...] are working to support st[...] rove equity, diversity, and[...] cations between your depart[...]

EP3 Effective Practices for Physics Programs

Key recommendations for improving EDI in your department

2. **Analyze the current state of affairs for marginalized groups in your department**

Examples:

Ensure that departmental leaders, especially those from <u>dominant groups</u>, work to build trust and relationships with people from <u>marginalized groups</u> and include them as partners and leaders in the work of understanding the current state of affairs and developing and enacting plans for change.

Consider hiring consultants to evaluate and support improvement of equity and inclusion in your department. Identify consultants who have both scholarly expertise in equity, diversity, and inclusion and lived experiences as members of <u>marginalized groups</u>.

Effective Practices for Physics Programs

Key recommendations for improving EDI in your department

3. **Create, publicize, implement, and assess an action plan for EDI**

Examples:

Get broad participation and departmental and institutional support in equity efforts rather than relying on isolated champions who volunteer with little support from others.

Address problems with equity and inclusion before attempting to increase the diversity of your department. Otherwise, diversity initiatives are likely to be unsuccessful and may cause harm to people from <u>marginalized groups</u> who are recruited into a hostile environment.

Key recommendations for improving EDI in your department

4. Pay separate attention to the particular needs and concerns of different groups and different individuals

Examples:

Learn about the ways in which the intersection of identities can shape the forms of discrimination and bias that people experience within physics. For example, misogyny may manifest itself in different ways against Black women and white women, and racism may manifest itself in different ways against Asian women and Asian men.

Pay particular attention to the needs of <u>LGBTQ+</u> people who are also members of other marginalized groups, who are likely to face greater levels of discrimination and additional issues. For example, many LGBTQ+ people of color report not feeling fully at home in majority-white LGBTQ+ groups or in majority cis/straight groups for people of color.

Key recommendations for improving EDI in your department

5. **Use known strategies to improve EDI**

Examples:

Focus on creating a supportive environment in which people from <u>marginalized groups</u> can thrive and on addressing systemic and cultural problems in your department that prevent them from doing so, rather than on fixing people so they can better survive in a hostile environment.

Encourage departmental leaders to be advocates for members of <u>marginalized groups</u> to proactively mitigate challenges they might face.

Incentivize and reward multiple faculty members, including those who do not identify as members of <u>marginalized groups</u>, to actively support students from marginalized groups.

Key recommendations for improving your culture and climate

1. Engage the whole department in a review of department climate

2. Establish and communicate a collective vision for a healthy climate

3. Create and nurture a culture where everyone is welcome, included, and supported

4. Value and support healthy relationships among all members and groups with the department

5. Create and nurture programs, processes, and policies that support continuous improvement and broad voice

Encourage instructors to view struggling students as needing support to reach their full potential, rather than as inherently lacking the intelligence or math preparation needed to pursue physics.
(*Recruiting of Undergraduate Physics Majors*)

Recognize that color-blind strategies (i.e., treating everyone the same regardless of race or ethnicity) do not explicitly address the needs of students from marginalized groups and are insufficient to support and retain these students.
(*Retention of Undergraduate Physics Majors*)

Create an inclusive mentoring program, emphasizing cultural responsiveness and awareness of the ways that culture and identity impact mentoring relationships.
(*Advising and Mentoring of Students*)

Effective Practices for Physics Programs

Systematically track which students are participating in undergraduate research, and look for and address sources of inequity.
(*Undergraduate Research*)

Discuss historical contributions to computation by women and people of color, e.g., Katherine Johnson, Dorothy Vaughan, Grace Hopper, and Ada Lovelace.
(*Computational Skills*)

Recognize that faculty and mentors may have <u>implicit bias</u> with regard to which kinds of careers they recommend to which students. Actively work to overcome such bias.
(*Career Preparation*)

Effective
Practices
for Physics
Programs

- **The EP3 Guide is not a 'To Do' list.**
- **Engage in cyclic self-reflection**
- **Commit to shared action and ownership**
- **Use data to realize a shared mission**
- **Choose a few critical topics to focus on**
- **Create and enable clear steps**
- **Reflect on actions to guide next steps**

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and/or wanting to make a significant change

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