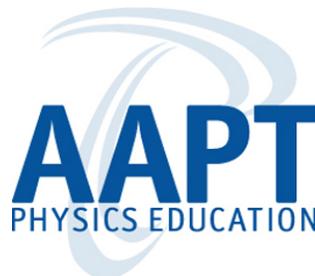
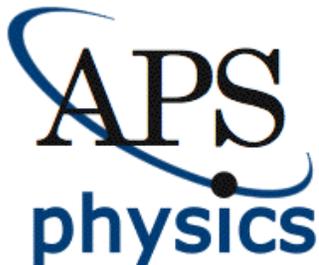


# A Guide to Department Improvement: Effective Practices for Physics Programs (EP3)

*Theodore Hodapp, American Physical Society*



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## Effective Practices for Physics Programs: The EP3 Guide

**APS, in collaboration with AAPT, is creating a guide to help physics departments improve, review and assess their programs ... and to help them meet challenges they may face**

The EP3 Project is bringing together research and information about practices for building successful and effective physics programs from experts across the American physics community.

**Co-Chair:** David Craig, Oregon State University

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## Who is it for?

- Physics department chairs
- Program leaders
- Programs undergoing a self-study and being reviewed
- Program reviewers
- Departments & faculty facing program challenges or interested in improving their programs
- Anyone in physics involved with student learning assessment
- Administrative leaders

## Help department chairs (& other program leaders)

- Bring together known literature on topics
- Collect practices recognized by the community as effective when there is insufficient evidence-based literature
- Collect information for departments to use in advocating for resources to improve their program
- Encourage discussions in departments on continuous improvement of physics programs using evidence
- External program assessment / departmental review
- Improve usefulness of assessment
- Engage PER community on departmental needs

## Chapters:

- **Introduction:** how to navigate and use the guide
- **How to be an Effective Chair**
- **How to create and sustain effective changes in your department or program**
- **Effective Practices** (~25 “sections”)
- **Assessment of Student Learning:** developing a useful and efficient culture of assessment
- **Program Review** and a Departmental Culture of Continuous Self-Improvement: Preparing for a self-study and program review as well as a Guide to reviewers
- **Ancillary material:** Creating foundational documents; examples of student learning goals and program learning goals; assessment instruments; additional resources

## Students

- *Recruiting (in 1<sup>st</sup> release)*
- *Retention*
- *Advising and Mentoring of Students*
- Internships (to be included in 2<sup>nd</sup> release)
- *Undergraduate research*
- *Career preparation*

## Curriculum

- *Implementing research-based instructional practices in your program (overarching)*
- *Introductory courses for physical science and engineering majors*
- Introductory courses for life sciences majors
- *Upper-level physics courses*
- Introductory courses for Non-STEM majors
- Communication skills
- *Laboratory / experimental skills*

- *Computational skills*
- Capstone experiences
- Online education

## Programs

- Individuated degree tracks: engineering / applied physics
- Institutional partnerships: dual-degree physics / engineering programs
- *High school physics teacher preparation*
- Undergraduate Instructional Assistants
- Community engagement / outreach

## Departmental

- Physical environment: encouraging collaboration and learning
- *Departmental climate*
- *Equity, diversity, and inclusion*
- Ethics

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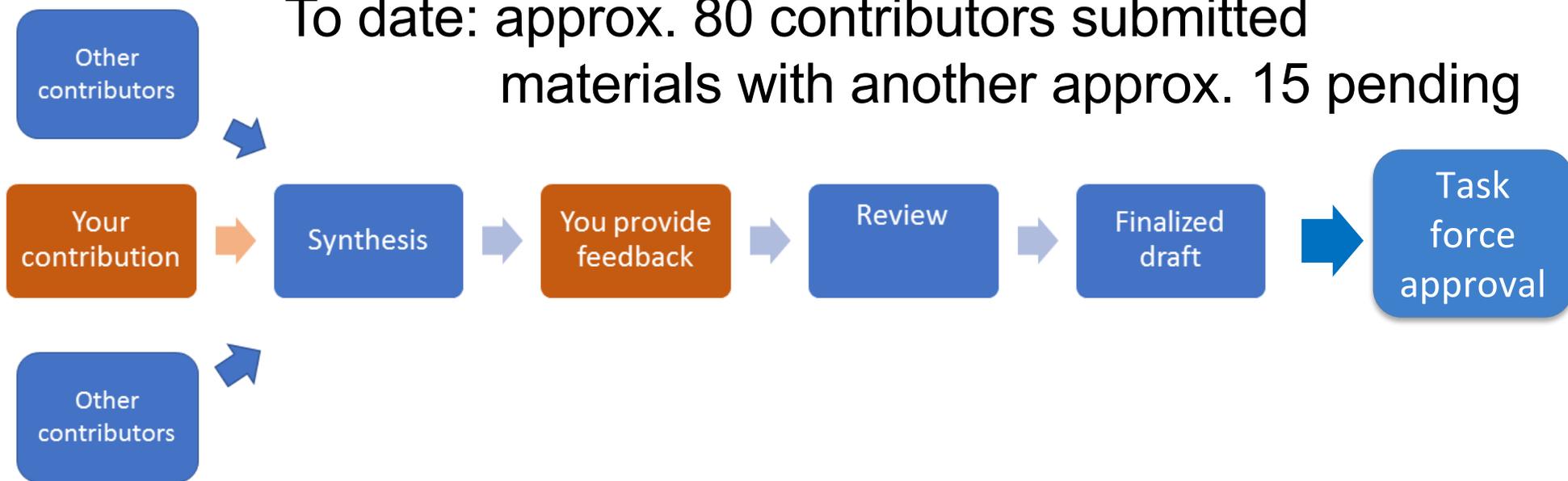
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To date: approx. 80 contributors submitted materials with another approx. 15 pending



For each section there will be several individuals (including yourself) contributing content

The task force and editorial director will then synthesize into one cohesive document.

We may have some additional questions for you. After internal vetting you will have a chance to see and comment on the synthesized section.

Each section will be sent for expert review to at least 4 individuals.

To see an example of a final section the Teacher Preparation can be found here: <http://apps3.aps.org/bpupp/>

## Is:

- Collection of community knowledge and evidence-based practices
- Authored, reviewed, approved by physics community (>200!)
- *Living* document (not static), with stewardship by an Editorial Board
- Primarily online
- Ethics and diversity included throughout
- Effort to encourage evidence-based pedagogy
- Transform mandatory assessment into useful exercise
- Suggestions on how to improve all aspects of a program
- Opportunity to extend reach of education research

# What the EP3 Guide Is & Isn't

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## Is:

- **Key:** flexible, not prescriptive; mindful of local contexts
- **Tool to help departments understand who they are and what they want to be, and then provide community-based knowledge and information to help them achieve this**

## Is NOT:

- Accreditation or program certification
- Mandate to conform
- A checklist of required actions
- Every possible idea for what to do (e.g., the 'kitchen sink')
- At the smallest level of detail to assist with implementation
- **Finished (yet)... Join our mailing list at [ep3guide.org](https://ep3guide.org)**

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