Status: **Reviewed**

Entry #: 232

Date Submitted: 9/14/2020 1:29 PM

OVERVIEW OF PROGRAM REVIEW AND PLANNING FOR INSTRUCTIONAL PROGRAMS

Program Review is about documenting the plans you have for improving student success in your program and sharing that information with the community. Through the review of and reflection on key program elements, program review and planning identifies program strengths as well as strategies necessary to improve the academic discipline, program, or service to support student success. With our new Guided Pathways plan, this review becomes even more crucial for the success of our students and college.

We are using the Strengths, Opportunities, Aspirations, Results (SOAR) strategic planning technique to help us focus on our current strengths and opportunities, create a vision of future aspirations, and consider the results of this approach.

BASIC PROGRAM INFORMATION

Academic Year
2020-2021

Are you completing a comprehensive or annual PRP?
Annual

Department Name
Physics/Engineering

Discipline Name
Physics (PHYS)

Department Chair Name
Daniel Finkenthal

Division Name
Mathematics, Science and Engineering

Website address for your discipline
https://www2.palomar.edu/pages/physics/

Discipline Mission statement
The Department has not developed an agreed on mission statement for this discipline. This will be a goal for the coming year after we have hired several new faculty. A suitable stand-in is presented here:

Physics lies at the core of all scientific and technical disciplines. Our mission is to provide students with an outstanding learning experience in which they develop strong analytical, quantitative, and problem solving skills with a deep appreciation of the role physics plays in technical innovations and understanding the world we live in. We strive to provide an engaging teaching and learning environment for students of diverse origins, experiences, needs, abilities, and goals. We support and encourage students who intend to transfer as well as students pursuing career and technical training. We seek educational empowerment in all we do. We provide students with rigorous and comprehensive courses that allow them to perform at a high level while also
fostering curiosity and excitement about the physical world. We also provide an exciting learning opportunity for non-physics and non-science majors that provides basic understanding of physics and problem-solving skills.

(click here for information on how to create a mission statement)

Does your discipline have at least one degree or certificate associated with it?
No

Are any of your programs TOP coded as vocational (CTE/CE)?
No

Please list the names and positions of everyone who helped to complete this document.
Daniel Finkenthal

Use the link to provided to help answer the staffing questions below. This form requires a login and password to access. Please use your Palomar email and password to log in.

Link: Permanent Employees Staff Count

Full-time Faculty (total number of FT faculty in your discipline)
3

Full-time Faculty (FTEF)
3.73

Part-time faculty (FTEF)
3.33

Classified and other permanent staff positions that support this discipline
One 20% Academic Department Assistance and One 50% Lab Technician

Additional hourly staff that support this discipline and/or department

PROGRAM INFORMATION

In this section you are asked to consider your programs, their learning outcomes, the annual number of completions, goals for completions and enrollment and efficiency trends.

PROGRAM LEARNING OUTCOMES

Begin this section by reviewing the Program Review reports for programs and courses in Nuventive Improve (TracDat). All active course and program learning outcomes should be systematically assessed over a 3-year cycle. First, look at program learning outcomes.

- **Program** = Leads to a degree or certificate
- **Discipline** = A group of courses within a discipline

*Programs will be able to complete program completion and outcome questions.

How do they align with employer and transfer expectations?
Most of our students seed transfer to four-year programs. Our SLO's were updated last year and align very well with transfer expectations.

Describe your program's plan for assessing program learning outcomes.
In the last year we have conducted SLO assessments on all our courses since none had been done before. We are now on a three-year assessment cycle plan in which the evaluation, assessment, and review of our courses will be staggered. We communicate regularly with faculty and transfer staff at other colleges and universities. We maintain contact with many of our students after they transfer.

Program Information Summary

Consider your program outcome assessments, completions, and enrollment/efficiency trends, as well as other internal and external factors.

How have these factors contributed to the success of your program(s)?
Our curriculum is tied closely with SLOs

How have these factors presented challenges for your program(s)?
Successful student outcomes heavlily rely on student laboratory experiences. This is challenging given the sparse resources we have.

The Chancellor's Office Vision for Success stresses the importance of reducing equity gaps through faster improvements of underrepresented groups.

ACCJC also requires that colleges establish institutional and program level standards in the area of success rates. These standards represent the lowest success rate deemed acceptable by the College. In other words, if you were to notice a drop below the rate, you would seek further information to examine why the drop occurred and strategies to address the rate.

Click on this link to review the course success rates (A, B, C, or Credit) for your discipline.

In this section we will identify a course success rate standards and a stretch goal (what you would like to move toward) for programs.

Course Success Rates by gender, age, ethnicity, special population, location, and modality (You can access the Student Equity Plan on the SSEC website https://www2.palomar.edu/pages/ssec/)

COURSE INFORMATION

COURSE SUCCESS AND RETENTION

What is your program's standard for Discipline COURSE Success Rate?
75.0%

Why did you choose this standard?
We chose this higher standard, especially in our majors courses, because students are expected to have completed several pre-requisites and are therefore better prepared to do difficult college-level work. Our courses are required of most students pursuing a career in STEM and therefore serve as important bridge that needs to be as accessible and welcoming as possible.

What is your stretch goal for course success rates?
80.0%

How did you decide upon the goal?
For the same reasons stated above, it is important that we provide a welcoming and accessible offering of courses for those seeking careers in STEM. We feel it is important to make careers in STEM available to the community we serve, especially to groups that have been under-represented in those fields.
We believe that the current enthusiasm for promoting STEM and the continued student support services being offered by the College (STEM center, MATH center, etc.) should allow us to meet this target.

Gender: Why do you think gender differences exist? What do you need to help close the gap?
We are working to close this gap. It has gone from 28% to 63%
One reason for gap is lack of women faculty and role models in our department. We are now actively recruiting women to our department.

Ethnicity: Why do you think ethnicity differences exist? What do you need to help close the gap?
We are working to close this gap. It has gone from 28% to 63%
One reason for gap is lack of women faculty and role models in our department. We are now actively recruiting women to our department.

COURSE LEARNING OUTCOMES

How have you improved course-level assessment methods since the last PRP?
Last year we completed SLO assessment for ALL our courses.

Summarize the major findings of your course outcomes assessments.
Students are able to successfully pass the course assessments with success rates above 75%. At this point the physics faculty need to be better at coordinating and communicating across the sections they teach. We have committed to meet to brainstorm best practices, share proven strategies for retention and engagement, and consider program-wide changes about
pedagogy as a result of this reflection. By sharing the ways in which various instructors teach each SLO
content area, we can ensure quality and consistency of instruction. When we have done this in the past, many of these successful teaching techniques have been adopted by other instructors. In this way, the SLO assessments
will assist in improving our courses and program.

This section is intentionally blank for annual PRPs. Please click "Next" to continue.

This section is intentionally blank for annual PRPs. Please click "Next" to continue.

CAREER AND LABOR MARKET DATA

The Chancellor's Office Vision for Success stresses the importance of increasing the percent of exiting students who report being employed in their field of study. It is important for us to consider how ***all*** of our programs connect to future careers.

Go to this website https://www.onetonline.org/ and enter your discipline in the bubble on the top right for ideas about potential occupations. Click on an example to see more detail.

What kinds of careers are available for people who complete your programs (and/or transfer)? (Refer to link above) Are there any new or emerging careers and if so how would the new or emerging careers impact your future planning?
Physics majors are widely employed throughout industry. In addition to having specific knowledge and skill-set, physicists bring a systems-thinking lens lens to projects and solving problems. Physicist work in all fields of science and technology.

What are the associated knowledge, skills, abilities (KSA's) needed for the occupations listed above? (click examples in the link above to get ideas)

KNOWLEDGE
-Physics
-Engineering
-Scientific Computing
-Technology
-Computer and Electronics
-Production and Processing
-Mathematics
-Design
-Fabrication

SKILLS
-Reading Comprehension
-Critical Thinking
-Troubleshooting
-Writing
-Complex Problem Solving
-Active Listening
-Active Learning
-Speaking
-Judgement and Decision Making
-Monitoring
-Coordination
-Repairing
-Equipment Maintenance

ABILITIES
-Inductive Reasoning
-Near Vision
-Oral Comprehension
-Deductive Reasoning
-Written Comprehension
-Information Ordering
-Problem Sensitivity

How does your program help students build these KSA's?

Through a combination of lecture, lab exercises, reading assignments, projects, and internships. We believe that our courses and programs encourage students to acquire and/or enhance the KSA's listed above. For example, our lab courses students to work as a team on labs and semester projects. These projects reinforce the students' knowledge in physics, engineering, mathematics,computing, technology, design, and fabrication.

They also enhance students' skills in reading comprehension, critical thinking, troubleshooting, speaking, coordination, as well as judgement and decision making. Lastly, students develop abilities in inductive and deductive reasoning as they learn to analyze and interpret data.

Work Based Learning

Applied and work-based learning (WBL) allows students to apply classroom content in professional settings while gaining real-word experience. WBL exists on a continuum that reflects the progress of experiences from awareness-building to training. Students often cycle back through the continuum many times throughout college and throughout their career. Faculty play a critical role in ensuring these experiences are embedded into curriculum and support learning.

Have you incorporated work based learning (work experience, internships, and/or service learning) into your program?

No

Do you want more information about or need assistance integrating work-based learning into your program?

Yes

Please list any questions and describe what you need to integrate work-based learning.
Not sure.

How do you engage with the community to keep them apprised of opportunities in your program?
We are weak on this. We do participate in public service events and showcase our student projects. We give physics demonstrations at local middle schools and reach out to high-school teachers to recruit for the Promise program.

Program Goals

In the previous sections, you identified opportunities for improvement. Using these opportunities, develop 3-year SMART goals for your department. Goals should be Specific, Measurable, Attainable, Relevant, Time-Specific. Ensure your goals align with the mission of your department and/or the College's strategic plan.

Please list all discipline goals for this three-year planning cycle. Click here for previous PRPs and goal information.

Goals

Goal 1

Brief Description
Recruit and hire highly qualified faculty

Is this a new or existing goal?
Existing

Goal Status
Completed

How will you complete this goal?
Last year we hired two new faculty. Part-time positions are open. We are looking at ways we might create opportunities for graduate students at UCSD and other local universities.

Outcome(s) expected (qualitative/quantitative)
Increase faculty contact, presence, stability, and resource for students.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Provide students with an outstanding learning experience including an engaging teaching and learning environment for students of diverse origins, experiences, needs, abilities, and goals. Help support and encourage students who intend to transfer as well as students pursuing career and technical training. Update courses, modernize curriculum, create guided pathways.

Expected Goal Completion Date
5/1/2020

Goal 2

Brief Description
Update and modernize curriculum

Is this a new or existing goal?
Existing

Goal Status
Ongoing

How will you complete this goal?
Allocate time and resources.

Outcome(s) expected (qualitative/quantitative)
Better articulation with other colleges and universities. Better preparedness for our students.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
This is essential in order to provide students with reliable transfer opportunities.

Expected Goal Completion Date
5/1/2020

Goal 3

Goal Status

Brief Description
Develop Guided Pathways and ADT

Is this a new or existing goal?
Existing

How will you complete this goal?
Allocate time.

Outcome(s) expected (qualitative/quantitative)
Issue degrees. Create guided pathways and program mapping.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Issuing transfer degrees will better account for what we do as well as help college numbers. Guided pathways is perfectly suited to meeting the needs of most of our students.

Expected Goal Completion Date
12/17/2021

Goal 4

Brief Description
Develop Demonstration Resources

Is this a new or existing goal?
Existing

Goal Status
Ongoing

How will you complete this goal?
Assign faculty member to take charge of this task. Work with ISA
Secure funding for equipment.

Outcome(s) expected (qualitative/quantitative)
Enhances understanding of the physical world. Generates interest and promotes enthusiasm for the subject. Attracts students to the program.

How does this goal align with your department mission statement, the college strategic plan, and /or Guided Pathways?
Physics demonstrations are an important and standard component in physics pedagogy. Our department lacks these resources which causes barriers to student understanding and diminishes the student experience. This is a common complaint from our adjunct faculty who have these resources available at their other teaching positions.

Expected Goal Completion Date
12/17/2021

RESOURCES

Congratulations! You are nearing completion. In this section, you will consider the resources you need to implement your three-year program review plan and/or address any findings from your assessment of your discipline.

The section is organized into the following four parts:

PART 1: Staffing Needs (Faculty and Additional Staff)

PART 2: Budget Review

PART 3: Technology and Facilities Needs

PART 4: One Time Request for Other Needs (NonTechnology Equipment, Supplies, Operating Expenses, Travel)

PART 1: STAFFING NEEDS

Requests for faculty will follow the prioritization process currently in place in IPC, and the IPC SubCommittee. Requests for new staff positions will be prioritized at the division level and reviewed at Exec.

Are you requesting additional full-time faculty?
No

NOTE: If you are requesting full-time faculty, you must go back to the Labor Market section of the form to complete that section. It is required when requesting additional faculty positions.

Are you requesting new Classified, CAST or AA positions?
No

PART 2: BUDGET REVIEW

Review your Budget/Expenditure reports for 2018, 2019, 2020. Consider your three-year PRP plan.

Click on the link below to access directions to the *Available Budget Report* to complete this section.

How to Request the Available Budget Report

Reflecting on your three-year PRP plan, are there any budget considerations you would like your dean/supervisor to be aware of for the upcoming year?
No

NOTE: PARTS 3 and 4 – TECHNOLOGY, FACILITIES AND OTHER NEEDS

This year the College is implementing two new processes related to resource needs coming from the PRP process.

1. One-Time Fund Requests. The college is implementing a process for prioritizing and allocating funds for one-time needs/requests tied to Program Review and Planning. Prioritization will take place through participatory governance in planning councils and the Budget Committee. Then, a recommendation will be made to Exec for funding of request utilizing various funding sources.

   For more information about funding sources available, see IELM BLOCK GRANT, LOTTERY, PERKINS AND STRONG WORKFORCE GUIDELINES.

   Consider submitting one-time requests only if you have verified that you cannot fund the request using your general discretionary funds or other funds.

2. Technology and Facilities Review. From now on, ALL requests for technology will go through an institutional review process. If you request technology here, you will see a description of the process below.

PART 3: TECHNOLOGY AND FACILITIES NEEDS

Will you be requesting any technology (hardware/software) this upcoming year?
No

Do you have resource needs that require physical space or modification to physical space?
No

PART 4: OTHER ONE-TIME NEEDS

For more information about funding sources available, see IELM BLOCK GRANT, LOTTERY, PERKINS AND STRONG WORKFORCE GUIDELINES. Please check with your department chair on the availability for this cycle.

Do you have one-time requests for other items (e.g., Non-Technology Equipment, Supplies, Operating Expenses, Travel) that your budget or other funding sources will NOT cover?
No

I confirm that the Program Review is complete and ready to be submitted.
Yes

Enter your email address to receive a copy of the PRP to keep for your records.
dfinkenthal@palomar.edu

Review

Chair Review

Chair Comments
We are now a department of four, as last year we hired two new faculty into our program and they are bringing energy and enthusiasm to the department. A third member earned tenure which as added a level of stability. Our department's focus on equity, diversity, and inclusion has resulted in great growth especially with women and students of color. I am very pleased with our results.

Chair Name
Daniel Finkenthal

Chair Sign Date
11/5/2020

Dean Review

Strengths and successes of the discipline as evidenced by the data and analysis:

Areas of Concern, if any:

Recommendations for improvement:

Dean Name

Dean Sign Date

IPC Review

Strengths and successes of the discipline as evidenced by the data and analysis:

Areas of Concern, if any:

Recommendations for improvement:

IPC Reviewer(s)

IPC Review Date

Vice President Review

Strengths and successes of the discipline as evidenced by the data and analysis:

Areas of Concern, if any:

Recommendations for improvement:

Vice President Name

Vice President Sign Date