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| **Discipline: Microbiology** | **Date: 12/02/2015** |
| **Instructional Discipline Reviewed (Each discipline is required to complete a Program Review.)** |  |

**DEFINITION**

Program Review and Planning is the means by which faculty, staff, and/or administrators complete a self-evaluation of an academic discipline, program, or service.  The self-evaluation includes an analysis of both quantitative and qualitative data on how the academic discipline, program, or service is supporting the mission and strategic planning of Palomar College in meeting the educational and career interests of students.  Through the review of and reflection on key program elements, such as program data and student learning outcomes, Program Review and Planning defines the curriculum changes, staffing levels, activities, and/or strategies necessary to continue to improve the academic discipline, program, or service in support of student success.  The Program Review and Planning process also ensures short-term and long-term planning and identification of the resources necessary to implement identified goals and priorities.

**Purpose of Program Review and Planning:**

Program Review and Planning for Years 2 and 3 provides a “check-in” on the Year 1 Comprehensive PRP. The PRP documents the vision and planning for a program or discipline. It also provides information for the development of the College’s Strategic Plan goals and annual objectives, documents overarching themes/issues occurring across academic programs and instruction, identifies the needs for resource allocations, and identifies department needs for developing the annual Staffing Plan update.

[**Palomar College Mission**](http://www.palomar.edu/about/goals.aspx)

Our mission is to provide an engaging teaching and learning environment for students of diverse origins, experiences, needs, abilities, and goals. As a comprehensive community college, we support and encourage students who are pursuing transfer-readiness, general education, basic skills, career and technical training, aesthetic and cultural enrichment, and lifelong education. We are committed to helping our students achieve the learning outcomes necessary to contribute as individuals and global citizens living responsibly, effectively, and creatively in an interdependent and ever-changing world.

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| **List everyone who participated in completing this Program Review and Planning Document.****Dr. Krystal Rypien, Dr. Lesley Blankenship-Williams, Margarita Vega, Beth Pearson** |

**STEP I. Evaluation of Program & SLOAC Data.** In this section, examine and analyze updated program data, the results of SLOACs, and other factors that could influence your program/discipline’s plans for the current year. Consider trends and any changes in the data as they relate to this year’s analysis.

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| 1. **Analysis of Program Data. Review and comment on any significant changes or noted concerns since last year’s PRP.**

**(For enrollment, WSCH, & FTEF data, use Fall term data only).** * + [Enrollment, Enrollment Load, WSCH, and FTEF](https://sharepoint2.palomar.edu/sites/IRPA/SitePages/Productivity%20Metric%20Summary.aspx)
	+ [Course Success and Retention Rates](https://sharepoint2.palomar.edu/sites/IRPA/SitePages/Success%20and%20Retention.aspx)
	+ [Degrees and Certifications](https://sharepoint2.palomar.edu/sites/IRPA/SitePages/Degrees%20and%20Certifications.aspx)

There were no significant changes in enrollment for MICR200. The course remains impacted (106.33% at census date for 2014-15). The percentage of MICR200 sections that are taught by part-time faculty (60% in 2014-15) has not changed significantly in recent years.Overall success and retention rates did not change significantly in 2014-15 (74.2% success and 92.5% retention rates for 2014-15). Comparing success and retention rates among subgroups of students, we continue to see lower success rates for Hispanic students (67.7% vs. 74.2% overall) and students in daytime sections (70.8% success rate vs. 74.2% overall). We continue to work with part-time faculty and the counseling department to address these disparities. Several of the resources requested in this PRP will directly target students with weaker background preparation, which may further address the variable success and retention rates among different student populations.The Microbiology discipline does not offer any degrees or certificates.  |

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| 1. **SLOACs. Using the comprehensive SLOAC reports and faculty discussions as a guide, summarize your planned SLOAC activities for courses and programs for the current academic year. Link to SLOAC resources:** <http://www2.palomar.edu/pages/sloresources/programreview/>

Due to changes in the PRP deadlines, we have not completed another SLO assessment since the 2014-15 PRP. Full-time instructors (Rypien and Blankenship-Williams) are in the process of reorganizing MICR200 curriculum and developing new activites and assessments to help address the lack of prerequisite skills and knowledge that often limit student success in Microbiology. Dr. Blankenship-Williams recently published a textbook to address these shortcomings (*What you really need to know before anatomy, physiology, & microbiology*), and our curriculum change will incorporate her textbook to allow students to review foundational concepts at their own pace outside the classroom. This will allow instructors to focus on advanced concepts during class meetings, without having to address students with varying prerequisite knowledge. Our SLO assessment currently underway for FA15 (metabolism SLO) will be used as a baseline to evaluate the success of our planned curriculum change and textbook introduction in SP16.  |

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| 1. **Other Relevant Data and Information.**
2. **Review other data and/or information that you included in last year’s assessment of your program (see Step II.C). (Examples of other data and factors include, but are not limited to: external accreditation requirements, State and Federal legislation, four-year institution directions, technology, equipment, budget, professional development opportunities). Describe other data and/or information that you have considered as part of the assessment of your program. If there is additional information you are using to assess your program this year, also describe that information here.**

N/A1. **Given this updated information, how are your current and future students impacted by your program and planning activities? Note: Analysis of data is based on both quantitative (e.g., numbers, rates, estimates, results from classroom surveys) and qualitative (e.g., advisory group minutes, observations, changes in legislation, focus groups, expert opinion) information.**

N/A |

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| 1. **Labor Market Data. For Career/Technical disciplines only, review and comment on any significant changes or concerns since last year’s PRP. (See Step II.D). This data is be found on the CA Employment Development website at** [**http://www.labormarketinfo.edd.ca.gov/**](http://www.labormarketinfo.edd.ca.gov/)**. Go here and search on Labor Market Information for Educators and Trainers (http://www.labormarketinfo.edd.ca.gov/Content.asp?pageid=112). Click on summary data profile on right side of page to search by occupation. (Check other reliable industry or government sources on Labor Market Data websites that support findings and are relevant to Region Ten – San Diego/Imperial Counties. Include job projections and trends that may influence major curriculum revisions.)**

Registered nurses and physician assistants continue to be in high demand in California, with projections of 9230 openings per year for registered nurses (2012-2022), and 430 openings per year for physician assistants (2012-2022).  |

**STEP II. Progress on Previous Year’s Goals and Plans** (See ”Step III - Updated Goals and Plans” in your completed 2014-15 PRP at <http://www.palomar.edu/irp/PRPCollection.htm>).

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| **Discuss/Summarize progress on last year’s goals. Include** 1. **the impact on resources allocated and utilized;**
2. **any new developments or concerns that are affecting the program;**
3. **any new goals for the program; and**
4. **other information you would like to share.**

We continue to monitor and assess the impact of prerequisite changes to MICR200 to ensure that student success, retention, and SLO achievement remain high. Our most recent SLO assessment results (Fall 2014) prompted full-time instructors (Blankenship-Williams and Rypien) to undertake a major curriculum revamp in an effort to address poor student prerequisite knowledge (see SLOAC data in Step I). To further to address the issue of underprepared students, especially in a highly impacted class such as MICR200, we are requesting funds for organic chemistry models and magentic water model kits. Our hope is that these tools will increase student success, especially among Hispanic students. Resources from FY2014-15 (both through PRP and STEM funds) helped to address equipment shortcomings in Microbiology. However, the high enrollment and intense laboratory demands of this course continue to create new equipment needs, and maintenance of microscopes remains a critical issue (which is requested annually from PRP funds due to cuts from our normal operating budget).Our discipline goals are as follows:1. **Improve retention and success rates in Microbiology 200, particularly for our underprepared and/or minority students.** Microbiology 200 is a very costly class as the laboratory materials and support required to for lab are extensive. Consequently, it is cost-beneficial for the college to have high retention and success rate in this high demand class to increase efficiency (i.e. reduce the number of students repeating the course multiple times). Currently, the Microbiology discipline struggles with two related issues. First, the content in MICR200 (the only offered course of this discipline) requires a solid understanding of 100-level chemistry and biology topics. To accommodate our Nursing program’s NLN accreditation, the Life Sciences department reluctantly agreed to eliminate the mandatory 100-level biology or chemistry prerequisites for MICR200. The loss of these prerequisites has left many students extremely underprepared and very likely to fail or drop without additional remediation. Instructors and counselors can verbally recommend 100-level biology or chemistry courses prior to enrolling in MICR200, but several groups (veterans on GI bill and some financial aid students) are unable to receive funding for a course that is not specifically required. Second, a high percentage of our students do not start their education at Palomar College as “college ready”; these students are often remedial in reading comprehension, writing, and/or math. Lower success rates are standard fare for these constituents.
2. **Increase laboratory support and funds to allow Microbiology to continue offering high quality lab experiences.** We currently have three full time laboratory technicians and enough student hourly money to cover approximately 1,175 student hours per academic year (including Summer) for all laboratory courses in the Life Sciences discipline. Assuming that all FT employees work 2000 hours per year, this equates to 7,175 hours of laboratory support per year.

**In 2008-2009**, we offered 8 sections of Microbiology, 8 sections of Human Physiology, 8 sections of Anatomy, and 10 sections of 200-level Biology, and 53 laboratory sections of 100-level biology courses. We also had a total of 5500 full time employee hours (2 FT employees and one 75% employee) and enough funds for approximately 2100 student hours. This equates to a total of 7600 labortory support hours per year to serve 87 laboratory sections. Mathematically, this means that 7600 laboratory support hours were spread over 87 yearly lab sections **(= 91.7 laboratory support hours/lab section**). Betweeb 2007 and 2015, our Life Sciences offerings have almost doubled, yet our lab support and lab funds remain unchanged. In 2015-2016, we will offer 142 sections of Life Science courses, including 16 Anatomy, 13 Physiology, and 10 Microbiology sections, 13 sections of 200-level biology, and 90 sections of 100-level biology labs. Mathematically, this means a total of 7175 hours of laboratory support for 143 laboratory sections **(= 53.09 laboratory support hours/lab section**). In addition, our laboratory funds remain at the same reduced levels since the 2009-2010 school year despite an almost doubling in the number of laboratory sections offered per year.Of all Life Sciences disciplines, Microbiology requires – by far – the most laboratory support. Therefore, adding in two additional Microbiology sections per year since the 2013-2014 school year has (1) placed an increased workload onto our understaffed laboratory support group, and (2) caused the Microbiology supply fund to run a $2000 deficit every year.  |
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**STEP III. Resources Requested for FY 2015-16:** Now that you have completed Steps I and II, Step III requires you to identify all additional resources you will need to achieve goals, plans and strategies for Step II. First, identify all resource needs in each budget category. You may have up to five (5) requests per budget category. Provide a meaningful rationale for each request and how it links to your Goals, Plans, and Strategies. Resource requests to simply replace budget cuts from previous years will not be considered. Negotiated items should not be included in any resources requested. PLEASE NOTE THAT ALL FUNDING ALLOCATED BY IPC IS ONE-TIME AND MUST BE SPENT WITHIN THE DEFINED TIMELINE. Requests that support more than one discipline should be included on the “Academic Department Resource Requests” PRP form only. Click here for examples of [*Budget Category*](http://www.palomar.edu/irp/Document%20Library/PRP%20Budget%20Category.pdf)*.*

Prioritize within each category and then prioritize across categories in Step IV.

\*Refer to Strategic Plan 2016 Objectives at http://www.palomar.edu/strategicplanning/StrategicPlan2016-Year2.pdf

**Budget category a. Equipment (acct 600010 and per unit cost is >$500). Enter requests on lines below. Click here for examples of equipment:** [**Budget Category**](http://www.palomar.edu/irp/Document%20Library/PRP%20Budget%20Category.pdf)

| **Priority Number for Resource Requests**  | **Resource Item Requested**  | **Fund Category** | **Discipline goal addressed by this resource**  | [**Strategic Plan 2016 Objective Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf)**\*** | **Provide ~~a~~ detailed rationale for each item. Refer to your goals, plans, analysis of data, SLOACs, and the Strategic Plan. (If item is already funded, name the source and describe why it is not sufficient for future funding.)** | **Amount of Funding Requested (include tax, shipping, etc.)** |
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| **a1.**  | **Organic chemistry kits catalog AP545** | **600010** | **1** | **1, 2** | 20 organic chemistry kits (10 for each Microbiology laboratory room) will provide materials for groups of three students to manipulate and build organic biomolecules for a kinetic learning modality. | **$1100** |
| **a2.**  | **3D Water Molecule Kits** | **600010** | **1** | **1, 2** | Twelve magnetic water kits (six per Microbiology laboratory room) allow students an opportunity to model polarity and hydrophobic/hydrophilic interactions. | **$600** |
| **a3.**  | **Student scales** | **600010** | **1** | **1, 2** | Four weighing scales with lids are requested for the Research Projects (2 per room). The previous ones were stolen. | **$1250** |
| **a4.**  |  | **600010** |  |  |  |  |
| **a5.** |  | **600010** |  |  |  |  |

**Budget category b. Technology (acct 600010, examples: computers, data projectors, document readers). Enter requests on lines below. Click here for examples of technology:** [**Budget Category**](http://www.palomar.edu/irp/Document%20Library/PRP%20Budget%20Category.pdf)

| **Priority Number for Resource Requests**  | **Resource Item Requested**  | **Fund Category** | **Discipline goal addressed by this resource**  | [**Strategic Plan 2016 Objective Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf)**\*** | **Provide ~~a~~ detailed rationale for each item. Refer to your goals, plans, analysis of data, SLOACs, and the Strategic Plan. (If item is already funded, name the source and describe why it is not sufficient for future funding.)** | **Amount of Funding Requested (include tax, shipping, etc.)** |
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| **b1.**  |  | **600010** |  |  |  |  |
| **b2.**  |  | **600010** |  |  |  |  |
| **b3.**  |  | **600010** |  |  |  |  |
| **b4.**  |  | **600010** |  |  |  |  |
| **b5.** |  | **600010** |  |  |  |  |

**Budget category c. Supplies (acct 400010 and per unit cost is <$500). Enter requests on lines below. Click here for examples of supplies:** [**Budget Category**](http://www.palomar.edu/irp/Document%20Library/PRP%20Budget%20Category.pdf)

| **Priority Number for Resource Requests**  | **Resource Item Requested**  | **Fund Category** | **Discipline goal addressed by this resource**  | [**Strategic Plan 2016 Objective Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf)**\*** | **Provide ~~a~~ detailed rationale for each item. Refer to your goals, plans, analysis of data, SLOACs, and the Strategic Plan. (If item is already funded, name the source and describe why it is not sufficient for future funding.)** | **Amount of Funding Requested (include tax, shipping, etc.)** |
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| **c1.**  |  | **400010** |  |  |  |  |
| **c2.**  |  | **400010** |  |  |  |  |
| **c3.**  |  | **400010** |  |  |  |  |
| **c4.**  |  | **400010** |  |  |  |  |
| **c5.** |  | **400010** |  |  |  |  |

**Budget category d. Operating Expenses (acct 500010; examples: printing, maintenance agreements, software license) Enter requests on lines below. Click here for examples of operating expense:** [**Budget Category**](http://www.palomar.edu/irp/Document%20Library/PRP%20Budget%20Category.pdf)

| **Priority Number for Resource Requests**  | **Resource Item Requested**  | **Fund Category** | **Discipline goal addressed by this resource**  | [**Strategic Plan 2016 Objective Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf)**\*** | **Provide ~~a~~ detailed rationale for each item. Refer to your goals, plans, analysis of data, SLOACs, and the Strategic Plan. (If item is already partially funded, name the source and describe why it is not sufficient for future funding.)** | **Amount of Funding Requested (include tax, shipping, etc.)** |
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| **d1.**  |

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| **Microscope repair and maintenance** | **500010** | **1** | **1** | **Microscopes are heavily utilized in the Microbiology discipline, and thus are subject to extreme wear and tear, especially by MICRO200 students who continuously use oil on the lenses for resolution of bacteria. Each microscope needs to be cleaned and lubricated on a yearly basis to ensure functionality. As an example of this need, many microscopes are unusable after just one semester of usage due to oil accumulation on the inside of the lenses. Annual maintenance and repair of microscopes is critical to ensure continued functioning of microscopes, and allowing students to achieve learning outcomes.**  | **$3100.00** |

 | **500010** | **1, 2**  | **1** | Microscopes are heavily utilized in the Microbiology discipline, and thus are subject to extreme wear and tear, especially by MICRO200 students who continuously use oil on the lenses for resolution of bacteria. Each microscope needs to be cleaned and lubricated on a yearly basis to ensure functionality. As an example of this need, many microscopes are unusable after just one semester of usage due to oil accumulation on the inside of the lenses. Annual maintenance and repair of microscopes is critical to ensure continued functioning of microscopes, and allowing students to achieve learning outcomes.  | **$3100.00** |
| **d2.**  |  | **500010** |  |  |  |  |
| **d3.**  |  | **500010** |  |  |  |  |
| **d4.**  |  | **500010** |  |  |  |  |
| **d5.** |  | **500010** |  |  |  |  |

**Budget category e. Travel Expenses for Faculty (acct 500010: faculty travel only)**

| **Priority Number for Resource Requests**  | **Resource Item Requested**  | **Fund Category** | **Discipline goal addressed by this resource**  | [**Strategic Plan 2016 Objective Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf)**\*** | **Provide ~~a~~ detailed rationale for each item. Refer to your goals, plans, analysis of data, SLOACs, and the Strategic Plan. (If item is already funded, name the source and describe why it is not sufficient for future funding.)** | **Amount of Funding Requested (include benefits if applicable)** |
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| **e1.**  |  | **500010** |  |  |  |  |
| **e2.**  |  | **500010** |  |  |  |  |
| **e3.**  |  | **500010** |  |  |  |  |
| **e4.**  |  | **500010** |  |  |  |  |
| **e5.** |  | **500010** |  |  |  |  |

**Budget category f. Short-term hourly (temporary and student worker). Enter requests on lines below.**

| **Priority Number for Resource Requests**  | **Resource Item Requested**  | **Fund Category** | **Discipline goal addressed by this resource**  | [**Strategic Plan 2016 Objective Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf)**\*** | **Provide ~~a~~ detailed rationale for each item. Refer to your goals, plans, analysis of data, SLOACs, and the Strategic Plan. (If item is already funded, name the source and describe why it is not sufficient for future funding.)** | **Amount of Funding Requested (include benefits if applicable)** |
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| **f1.**  | **Additional student hourly funds** | **230010** | **2** | **1** | As described previously, the Microbiology laboratories are running a deficit in laboratory support time and supply funds. Of particular importance is additional funds to support short term and student hourly workers. Such students do the bulk of the grunt work (pouring 600 agar plates, dish washing, and other mass production of lab supplies). In MICR200 and ZOO203, the instructors shoulder some of the additional burden of laboratory preparation because there are not enough support personnel to serve all of the sections.  | $7000 per year |
| **f2.**  |  | **230010** |  |  |  |  |
| **f3.**  |  | **230010** |  |  |  |  |
| **f4.**  |  | **230010** |  |  |  |  |
| **f5.** |  | **230010** |  |  |  |  |

 **STEP IV. Prioritize Resource Requests.** Now that you have completed Step III, prioritize all of your resource requests as one group; not prioritized within each budget category. This means you could have your #1 priority in technology, your #2 priority in short-term hourly, and your #3 priority in equipment, etc. If you actually have five (5) requests in each of the six (6) budget categories, you would end up with 30 prioritized requests**. IPC will not consider requests that are not prioritized.** Note that all funding allocated by IPC is one-time and must be spent within the defined timeline.

| **Priority Number for all Resource Requests in Step III** | **Resource Item Requested**  | **Fund Category** | **Discipline goal addressed by this resource**  | [**Strategic Plan 2016 Objective Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf)**\*** | **Provide ~~a~~ detailed rationale for each item. Refer to your goals, plans, analysis of data, SLOACs, and the Strategic Plan. (If item is already funded, name the source and describe why it is not sufficient for future funding.)** | **Amount of Funding Requested (include tax, shipping, benefits, etc.)** |
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**STEP V. Contract Position Requests.** Prioritize all contract positions you feel are needed to achieve goals, plans and strategies identified in Step II. Include all requests for Classified, CAST, and Administrator positions that either replace a vacancy due to retirements, resignations, lateral transfers, etc., or any new positions. You may request up to ten (10) positions and they must be prioritized to be considered by IPC. Please note that only these position requests will be prioritized by IPC when developing the annual Staffing Plan for Instruction.   (Do not include faculty positions.)

| **Priority Number for Contract Position Requests**  | **Position Title/Category****Requested**  | **Fund Category** | **Discipline goal addressed by this resource**  | [**Strategic Plan 2016 Objective Addressed by this Resource**](http://www.palomar.edu/strategicplanning/PALOMAR_STRATEGICPLAN2016.pdf)**\*** | **Provide a detailed rationale for the each position. The rationale should refer to your discipline’s goals, plans, analysis of data, SLOACs, and the Strategic Plan. (If position is already funded, name the source and describe why it is not sufficient for future funding.)** | **Amount of Funding Requested (include benefits)** |
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 **Department Chair/Designee Signature Date**

 **Division Dean Signature Date**