**Palomar College – Program Review and Planning**

**Instructional Programs**

**YEAR 1**

**Academic Year** **2010-11**

**Purpose of Program Review and Planning:** The institution assesses progress toward achieving stated goals and makes decisions regarding the improvement of institutional effectiveness in an on-going and systematic cycle of evaluation, integrated planning, resource allocation, implementation, and re-evaluation. Evaluation is based on analyses of both quantitative and qualitative data (ACCJC/WASC, Standard I, B.3.)

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| **Discipline: Biology** | **10/03/2011** |
| **Instructional Discipline Reviewed (Each discipline is required to complete a Program Review)** | **Please Add Date (00/00/2011)** |

**STEP I. ANALYSIS**

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|   |   |  |  |  | **<<Prelim>>** | ◄▬ Preliminary Fall 2010 data are as of 1/30/2011 |   |
|   |   | **Fall 2007** | **Fall 2008** | **Fall 2009** | **Fall 2010** | **Definitions** |
| **Enrollment at Census** | 1,978 | 1,878 | 1,926 | 1,774 | *Self Explanatory* |
| **Census Enrollment Load %** | 94.15% | 103.36% | 104.11% | 102.72% | Enrollment at Census Divided By Sum of Caps (aka "Seats") |
| **WSCH** | 6,496 | 6,244 | 6,377 | 5,858 | Weekly Student Contact Hours |
| **FTES** | 216.52 | 208.13 | 212.57 | 195.27 | One Full-Time Equivalent Student = 30 WSCH |
| **Total FTEF** | 12.00 | 11.00 | 11.67 | 10.73 | Total Full-Time Equivalent Faculty |
| **WSCH/FTEF** | 541 | 568 | 547 | 546 | WSCH Generated per Full-Time Equivalent Faculty Member |
| **Full-time FTEF** | 3.60 | 5.20 | 3.60 | 2.60 | FTEF from Contract Faculty |
| **Hourly FTEF** | 7.80 | 5.20 | 6.80 | 7.20 | FTEF from Hourly Faculty |
| **Overload FTEF** | 0.60 | 0.60 | 1.27 | 0.93 | FTEF from Contract Faculty Overload |
| **Part-Time FTEF** | 8.40 | 5.80 | 8.07 | 8.13 | Hourly FTEF + Overload FTEF |
| **Part-Time/(Total FTEF) %** | 70.00% | 52.73% | 69.14% | 75.78% | Percent of Total FTEF Taught By Part-Time Faculty |
| Student Achievement: **Non Distance Education Courses** |   |   | Those NOT taught via Distance Ed (see below) methods of instruction |
|  **● Retention Rate** | 94.35% | 94.59% | 95.08% | 97.06% | Non-W Eligible Grades (see next line) Divided by All Eligible Grades |
|  **● Success Rate** | 69.63% | 71.19% | 74.01% | 77.58% | A,B,C,CR/P Grades Divided By A,B,C,CR/P,D,F,FW,NC/NP,W Grades |
| Student Achievement: **Distance Education Courses** |   |   | Those taught via Internet, TV or non line-of-sight interactive methods |
|  **● Retention Rate** | 57.69% | 70.67% | 75.00% | 75.36% | Non-W Eligible Grades (see next line) Divided by All Eligible Grades |
|  **● Success Rate** | 38.46% | 49.33% | 45.00% | 49.28% | A,B,C,CR/P Grades Divided By A,B,C,CR/P,D,F,FW,NC/NP,W Grades |
| **Degrees Awarded** |  - | 2 | 1 | N/A\* | Degree Counts Are for the Full Academic Year (thus, \*N/A for 2010-11) |
| **Certificates Awarded:** | 1 | 1 |  - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2010-11) |
| **- Under 18 Units** |  - |  - |  - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2010-11) |
| **- 18 or More Units** | 1 | 1 |  - | N/A\* | Certificate Counts Are for the Full Academic Year (\*N/A for 2010-11) |

| **I. A. Reflect upon and provide an analysis of the four years of data above (for a sample analysis see** <http://www.palomar.edu/irp/11PRYear1/sampleforIA.pdf>) |
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| **The biology discipline serves over 1700 students and currently has only 3 full time instructors. The Part-time/(Total FTEF) has increased from 53% in 2008 to 76% in 2010. Full-time FTEF has decreased from 5.20 in 2008 to 2.60 in 2010. These data are significanly worse now that Dan Sourbeer has recently left this discipline to serve as Dean. It is difficult to maintain the quality of many of the courses in this discipline and to assess student learning outcomes when the great majority of courses within this discipline are taught by adjunct instructors. While there is not a need to increase the number of sections within this discipline there is a pressing need to hire one or more full time faculty. The courses offered in the discipline (in order of enrollment) are Biology 100, 102, 200, 201, 130/131, 135, 120, 114 and 110.****Demand for Biology 102 continues to be very high due to the fact that Biology 102 serves as a prerequisite for students who need to take Zoology 200, Zoology 203 and Microbiology 200. Retention rate in this course is very high (over 97%) due to the commitment level of students planning to enter allied health fields after completing these courses. There is currently one full-time faculty member teaching Biology 102 and two part-time faculty members. An additional lecture and lab section were added in the Spring 2011 semester for a total of 180 students per semester. We also offer a Summer section of Biology 102. The Part-time (Total FTEF) for Fall 2011 will be 37.5%.** **This Fall 2011 Kim Marshall, the full time instructor in Bio 102 has become the STEM/SI Coordinator which has removed her 80% from classroom instruction. We again have shifted more and more instruction to adjunct faculy. We will also add one more section to Bio 102 for the Spring 2012 term which will again add to our adjunct faculty within the department and discipline.** **With the exception of Biology 100 - Introduction to Biology, all of the courses within the discipline show similar and very high retention and succuss rates as reflected in the numerical analysis. Biology 100 enrollment trends suffer the same lower retention and success rates of most other non-major, general education introductory courses.**  |

| **I. B. Please summarize the findings of a Course or Program SLO assessment conducted by your discipline. (For examples, see** <http://www.palomar.edu/irp/11PRYear1/PRPsloExamples.pdf>) |
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| **Each course within the discipline has a similar primary SLO that focuses on the Scientific Method. All courses have assesment plans at various stages of completion.** **As a specific example the SLO currently being assessed for Biology 102 is “Understand and apply the Scientific Method in both lecture and lab, and apply these principles to analysis of experimental results”. The assessment method for this SLO includes completion of a three-part experiment on acids, bases and buffers, and writing a formal lab report based on the results. In the Fall 2010 semester 78% of students scored above a 75% on the formal lab report (average for all sections combined).** **For Biology 100 the current SLO is that students will be able to 'apply the scientific method to a research question. They will be able to synthesize a basic experiment indentifying the independent, dependent and outside variables of the experiment as well as describe the experimental group and control group. Students will be able to apply this knowledge and be able to evaluate information obtained scientifically'. We have been assessing this SLO for 3 semesters now with a standardized set of multiple choice questions. Over the 3 semesters the average success has been consistent around 70% (range: 69-71%). This varied considerably across the questions in the survey but allows us to evaluate where we need to improve.** **Preliminary results in the other courses show simlar success scores but their first complete assesment cycles are due at the end of Spring 2011.****Students in our biology courses continue to improve in their understanding of the scientific method and learning to interpret and understand the results of experiments performed in lab. In addition, they are gaining valuable lab skills which will help them in future lab courses and careers.** |

| **I. C. Reflect upon the SLO assessment findings in Box B above. Discuss overall observations and any areas of concern or noteworthy trends.**  **(For examples of such analysis, see** <http://www.palomar.edu/irp/11PRYear1/PRPsloExamples.pdf>) |
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| **Our Biology 100 success rate of 70% is below our goal of 75%. When we looked at the individual questions in our survey, we found that students understood the steps of the scientific method, but were confused with the elements of a controlled study and the application of the scientific concepts to specific scenarios. We would like to improve this success by increasing the number of opportunities that students use the scientific method in lab and increasing the number of examples of the scientific method used in lecture throughout the semester.** **The Biology 102 success rate of 78% during Fall 2010 will need to be compared with the next few semesters but appears to be within expectations when compared to the grade distribution.** |

| **I. D. For Career Technical disciplines only, please provide a brief summary of the labor market outlook. This data can be found at** [**http://www.labormarketinfo.edd.ca.gov/**](http://www.labormarketinfo.edd.ca.gov/) **Please include job projections and trends that may influence major curriculum revisions.** |
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| **STEP II. PLANNING****Reflecting on the 4-year trend data, the SLO assessment results, and the college’s** [**Strategic Plan 2013**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**, describe/discuss the discipline planning related to the following: (For sample reflections, see** <http://www.palomar.edu/irp/11PRYear1/samplesforII.pdf>) |

| **II. A. Curriculum, programs, certificates and degrees (consider changes due to Title 5 or other regulations, CSU/UC transfer language updates, articulation updates, student retention or success rates, workforce and labor market projections, certificate or degree completions, etc.)** |
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| **The discipline is currently working to integrate more scientific method, math and computational skills into its curriculum. This is in response to data showing that undergraduate science majors lack these skills needed to succeed in higher level coursework and in most science professions. The discipline is working with the new STEM grant to develop stronger scientific method, math and computational skills in Palomar College students taking courses within this discipline. In addition, the majors biology courses (Biology 200 and 201) are working to integrate more bioinformatic skills into the curriculum to better prepare biology majors for these relativley new changes taking place in the biological sciences.**  |

| **II. B. Class scheduling (consider enrollment trends, growth, course rotation, sequencing, Center/Site offerings, comprehensiveness, etc.)** |
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| **The number of courses being offered in this discipline does not meet student demand. While the great majortiy of sections within this discipline are at capacity ( Fall 08 103%, Fall 09 104% and Fall 10 102% census) the number of sections or courses can not be increased at this time due to funding restrictions imposed by the adminstration. If and when the college allows for growth in sections we will begin by offering sections in courses that we removed from our schedule. Those removed were typically the lower enrollment courses that provided a depth or richness to the departmental offerrings and are also used by the transfer life sciecnes students towards meeting their breadth requirements. Our field oriented courses should be the first to be added back into our offerings as they provide critical hands on experience for student biologists.** |

| **II. C. Faculty (Briefly discuss the faculty hiring needs for this discipline. This discussion does not replace the requirement to submit a Rationale Form for Faculty Hiring to IPC.)** |
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| **This discipline needs to hire at least two full time instructors. This discipline serves over 1700 students and currently has 3 full time instructors with Beth Pearson being split with the Botany discipline. The Biology discipline did have four full time instructors until Dan Sourbeer recently left to serve as Dean. When Dan was teaching (i.e. when we had 4 full time faculty) the Part-time/(Total FTEF) was 76% (in Fall 2010) and the Full-time FTEF was 2.60 (in Fall 2010). With Dan's absence this high dependance on adjunct instructors is even higher. With so few full time instructors in this discipline it is difficult to maintain the quality of the many courses in this discipline and to properly assess student learning outcomes.** |

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| **STEP III. RESOURCE REQUESTS FOR DISCIPLINE:**  |
| **III. A. Describe the resources necessary to successfully implement the planning described above. Provide a detailed rationale for each request by referring to the analyses of data and SLO assessment results in Step I and/or to any other evidence not apparent in the data or SLO Assessment** results. NOTE: Do **NOT** include Resource Requests that duplicate requests from other disciplines In your department. Place requests common to two or more disciplines on the form: ACADEMIC DEPARTMENT RESOURCE REQUESTS. |

| **a. Equipment (per unit cost is >$500) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **a1.**  | **Four complete gel electorphoresis sets (electrophoresis chambers and power supplies)****(BioRad Corporation)** | **4** | **2, 5, 6** | **Because of limited electrophoresis chambers we currently have 4-6 students sharing each chamber, ideally there should be 2 to 3 students per group. Purchasing 4 new electrophoresis sets would allow all students to be directly involved as opposed to the current situation where half the students have to observe members in their group.** | **$700 x 4 sets** **= $2,800** | **on-going****(5-year cycle)** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years. .** |
| **a2.**  | **Set of marine mammal and other anthropology skulls and forelimbs for comparative anatomy purposes.** | **1** | **2, 5, 6** | **Zoology 135 (Biology of Marine Mammals) - one of four major projects completed in class is the identification of major whale vertebrae (demonstrating an integrative understanding of comparative** **anatomy). A few sets of human vertebrae that are used solely for the lower division marine biology courses would be of great use to provide human comparisons.****In Biology 200 there are no skeletal structures students have avalabile to study anatomical differencers in closely related species during the laboratory sessions on evolution. This primate skull set would allow students to study anatomical changes in closely related species. This is directly related to the SLO assessment for this course.** | **$340 +****$550 +****$375** **= $1,265** | **one-time** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.**  |
| **a3.**  | **Teaching Microscope with Camera (Microscope: Olympus cx41)****(Camera: Micofire (from Optronics))** | **4** | **2, 5, 6** | **The current setup for displaying microscopic images to the class duing microscopy exercises and during lectures is time consuming and it produces images of such poor quality it is essentially useless. A good teaching microscope (as used in our Anatomy and Microbiology laboratories) with a built-in camera for displaying images on the classroom projection system is needed to properly display microscopic organisms, cells and cellular structures for students in this cell biology course.** | **$3,000 for scope +****$5,500 for camera****= $8,500** | **on-going****(10-year for scope and 5-year for camera)** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.**  |
| **a4.**  | **Comparative Proteomics (BioRad):****4 Mini-Protean Tetra Cells; Power supply; Micropipettors; Protein Profiler Module kit (for 96 students); precast gels (12). This purchase would cover the hardware and kit supplies for 96 students.** | **2** | **2, 5, 6** | **This will be a new laboratory experiment for Biology 200. This would give Biology 200 students direct experience isolating proteins (which is a skill biology majors should have). Because the data from this experiment will be analyzed to show the evolutionary relatedness of different fish species this is directly related to the SLO assessment for this course.** | **$3,800** | **on-going** **(5 year cycle)** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.**  |
| **a5.**  | **Comparative Proteomics (BioRad):****Protein Profiler Module kit (for 96 students); precast gels (12). This purchase would cover the kit supplies for 96 students.** | **3** | **2,5,6** | **This will be the ongoing expenses for the new laboratory experiment for Biology 200. This would give Biology 200 students direct experience isolating proteins (which is a skill biology majors should have). Because the data from this experiment will be analyzed to show the evolutionary relatedness of different fish species this is directly related to the SLO assessment for this course.** | **$1300** | **on going (each year)** | **Once thee initial equipment is purchased the supply cost for each semester (for 96 students) would be $650 for a yearly total of $1300** |

| **b. Technology (computers, data projectors, document readers, etc.) *Enter requests on lines below.*** |
| --- |
| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **b1.**  | **32 laptop computers for Biology 200****(Dell Latitude E6510).** **Lockable cabinet to securly store the 32 laptop computers**  | **1** | **2, 5, 6** | **Biology 200 is a majors-level course focused largely on cell biology, genetics and evolution. Currently these fields of study are largely focused on the study and manipulation of genomic and proteomic data, freely available from online scientific databases. Because students need computers to access and manipulate these types of genetic data Biology 200 has not had laboratory exercises devoted to these important aspects of modern biology. We have just written 4 laboratory exercises devoted to these topics and we will be relying on the 5 year old Life Sciences Department laptops for each of these four laboratory sessions (in all three sections of the course). The Life Science laptops have scheduling conflicts (i.e. two or more requests at the same time) and they are getting old and in different stages of repair and replacment. These new laptops would be directly related to the SLO Assessment for this course.** | **32 X $1850****= $ 59200****2 x $1,400 each) locking storage for 16 laptops each. Rolling carts and battery charge station****= $2,800** | **on-going****(5- year cycle)****One time purchase.** | **No, item is more expensive than our budget category can fund along with other on going expenses.** **This is a one time request that will not need replacement for many years.**  |
| **b2.**  | **Four personal computers to be permanently stationed in NS-235****(Dell Optiplex 980 i7 with flat panel 22"** | **2** | **2, 5, 6** | **If there were permanent computers in NS-235 many laboratory exercises would be rewritten to include exercises requiring students to access biological data and information from the internet during laboratory sessions.**  | **4 x $1550** **= $6200** | **on-going****(5- year cycle)** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.**  |
| **b3.**  | **Please see departmental computer request as well.** |  |  |  |  |  |  |
| **b4.**  |  |  |  |  |  |  |  |
| **b5.**  |  |  |  |  |  |  |  |

| **c. Budget for 4000s (per unit cost is <$500 supplies) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **c1.**  | **Biology 102: 8 Replacement electronic pH meters** | **1** | **2, 5, 6** | **The pH meters are used in the chemistry portion of Biology 102 to teach concepts of water chemistry, acid-base cehmistry, and the role of buffers. It is also used to teach students the scientific method, SLO #1 for the course, and to teach them how to write a formal lab report.**  | **8 x $245**  **= $1,960** | **on-going****(5 year cycle)** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.**  |
| **c2.**  | **Biology 102: Replacement Histology Slides: 12 tissue types, 30 slides of each = 360 slides** | **2** | **2, 5, 6** | **Current slides for the histology lab exercise are old, missing, or broken. We have few remaining slides of adequate quality. This lab is important to student's improved microscope skills and success in Zoology 200.**  | **360 x $6**  **= $2,160** | **on-going****(5 year cycle)** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.**  |
| **c3.**  | **Models (resin) (Plant, Bacterium, Paramecium) - (Wards Scientific Supply)** | **5** | **2, 5, 6** |  **Currently Biology 200 only has an animal cell model and is in need of high quality models of plant, bacterium and protist (Paramecium). These models would be used during lecture and during laboratory exercises.**  | **3 x $300** **= $ 900** | **one-time** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.**  |
| **c4** | **Micropipets****BioRad digiital micropipets (two 2-20 ul; two 20-200 ul and two 100-1000 ul)** | **3** | **2, 5, 6** | **Micropipettes are used in four different biotechnology lab exercises in Biology 200. Micropipettes need to be replaced about every 5 years, and we currently have about 4 that are at the the end of their useful life cycle.**  | **6 x $150** **=$900** | **on-going** **(5 year cycle)** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.**  |
| **c5.**  | **Microscope slides (7 sets of 30 slides)** **(Wards Scientific Supply)** | **4** | **2, 5, 6** | **Biology 200 has historically relied on a relatively small diversity of microscopic slides. We are in the process of expanding the diversity of slides for cellular structures and different groups of organisms.** | **6 x $350** **= $ 2,100** | **on-going** **(5 year cycle)** | **No, item is more expensive than our budget category can fund along with other on going expenses. This is a one time request that will not need replacement for many years.** |

|  **d. Budget for 5000s (printing, maintenance agreements, software license etc.) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **d1.**  | **Camatasia studio by MicroTech** | **1** | **2, 5, 6** | **This software is the same software AT uses to record instructional videos for Blackboard. This is needed in Biology 200 to produce instructional videos for students to access and manipulate online genomic and proteomic databases.** | **$180** | **One time** | **Possible, but unlikely from deparment funds, need to wait until the end of budget year to see.** |
| **d2.**  |  |  |  |  |  |  |  |
| **d3.**  |  |  |  |  |  |  |  |
| **d4.**  |  |  |  |  |  |  |  |
| **d5.**  |  |  |  |  |  |  |  |

|  **e. Classified staff position (permanent/contract position requests unique to this discipline) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **e1.**  | **See Departmental PRP** | **1** |  |  |  |  |  |
| **e2.**  |  |  |  |  |  |  |  |
| **e3.**  |  |  |  |  |  |  |  |
| **e4.**  |  |  |  |  |  |  |  |
| **e5.**  |  |  |  |  |  |  |  |

| **f. Classified staff position (temporary and student workers position requests unique to this discipline) *Enter requests on lines below.*** |
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| **Resource**  | **Describe Resource Requested** | **Prioritize these requests****1,2,3, etc.** | **Strategic Plan 2013 Goal/****Objective Addressed by This Resource****(**[**Link**](http://www.palomar.edu/strategicplanning/STRATEGICPLAN2013.pdf)**)**  | **Provide a detailed rationale for the requested resource. The rationale should refer to your discipline’s plan, analysis of data, SLO assessments, and/or the College’s Strategic Plan** | **Estimated Amount of Funding Requested** | **Will this be one-time or on-going funding?** | **Is resource already funded (in part or in full)? If so, name source. Why is that source not sufficient for future funding?** |
| **f1.**  |  |  |  |  |  |  |  |
| **f2.**  |  |  |  |  |  |  |  |
| **f3.**  |  |  |  |  |  |  |  |
| **f4.**  |  |  |  |  |  |  |  |
| **f5.**  |  |  |  |  |  |  |  |

| **III. B. Are there other resources (including data) that you need to complete your discipline review and planning?** |
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| **STEP IV. SHARE YOUR ACCOMPLISHMENTS (AKA Brag, Toot your horn) Please include at least one discipline accomplishment that you’d like to share with the college community.** |
| **Biology 200 students now have several laboratory and project experiences in the emerging fields of bioinformatics, genomics and proteomics.** |

| **STEP V. ACCREDITATION For programs with an external accreditation, indicate the date of the last accreditation visit and discuss recommendations and progress made on the recommendations.** |
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| **STEP VI. COMMENTS Other comments, recommendations: (Please use this space for additional comments or recommendations that don’t fit in any category above.)** |
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| **Please identify faculty and staff who participated in the development of the plan for this department:** |
| **Jim Gilardi*Name*** | **Beth Pearson*Name*** | **Kim Marshall*Name*** |

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| **Lesley Williams*Name*** | **Steve King*Name*** | **Ralph E. Ferges, Department Chair*Name*** |

**Department Chair/Designee Signature Date**

**Division Dean Signature Date**

* **Provide a hard copy to the Division Dean no later than March 11**
* **Provide a hard copy with the Dean’s sign-off to Instructional Services by March 18**
* **Email an electronic copy to** **jdecker@palomar.edu** **by March 18**