

## PROGRAM REVIEW 2008-2011

**Division:** Physical Science, Math, and Engineering

**Department or Program:** Astronomy

**Name and Title of Preparer(s):** Sherwood Harrington

### I. Description and Mission of the Program

The Astronomy Program at DeAnza currently provides two introductory, general-education courses: Stellar Astronomy (Astronomy 10) and Solar System Astronomy (Astronomy 4). We serve the general student population who require science credits.

The courses are currently offered in the Planetarium, making maximum use of the newly-refurbished and upgraded facility. We teach large-enrollment, high-productivity sections, typically offering 25 sections per year with a WSCH of between 10,000 and 11,000. Our productivity is consistently over 1,000 – almost double the College average and among the highest on campus.

This is accomplished by three instructors (one full-time in the department, one shared with meteorology, and a long-time part-time instructor) in large part because of the venue in which we teach, which is very attractive to students, and the magnificent support we receive from Community Education, which operates the Planetarium, and our Planetarium Technical Director, Karl von Ahnen.

The technical director provides support for the six million dollar equipment installation, which is used in the dome by the astronomy department instructors eight hours per day, Monday to Thursday. The director provides hands-on training to the Astronomy Department's faculty, training which is ongoing as we learn to use more of the very broad potential of the new, powerful instructional technologies in the Fujitsu Planetarium. The director also maintains and upgrades the digital and optical-mechanical systems in ways that would simply be impossible without that expertise (which no member of the faculty has.) It is our opinion that the Planetarium technical director is as important a member of our staff as are the instructors.

### II. Retention and Growth

The astronomy program serves about as many students as it can under the current room-use pattern, teaching only in the Planetarium which is shared with Community Education, so our enrollment has remained steady at its near-maximum of 10,000 to 11,000 WSCH per fiscal year.

Student retention is almost identical to the college-wide 90%, and our success rate is also in step with the college-wide 79%.

With regard to the institutional goal of increased access, growth and retention of specifically identified target populations, since we are serving the maximum number of students we can at

present, it is not surprising that the percentage of our students who are of the targeted populations has remained essentially constant for the past three years at around 20%. Changing the number of students in our classes from any group would require changing access issues over which we have no control. However, we are encouraged that the percentage of the students of targeted groups who withdraw from our courses has plummeted in the last three years from one in five to one in ten.

While we are clearly retaining more students from targeted populations than we did before, their success rate has not improved and remains about constant at a little above 60% (as compared to 55% for the PSM&E Division and 75% college-wide.) Clearly, more needs to be done, and we believe that our success rate for *all* students, including targeted populations, would increase if our courses were infused with more hands-on experiences for the students.

To that end, Geology Instructor Marek Cichanski, in consultation with our department, is now in the process of finishing work on a Master's degree in Astronomy, and will soon be developing (again, in consultation with our department) and teaching a laboratory course in Astronomy. As part of that work, productive and worthwhile activities will be developed for implementation in our lecture classes as well. We are all very excited about this development, and we should be seeing tangible results before the next program review cycle.

### III. Student Equity

The "percent success gap" between targeted and non-targeted students for astronomy classes has seen some improvement, but not significant improvement (the success gap shrinking from 7% in 2005-06 to 5% in 2007-08.) While this is in line with college-wide numbers, we take no particular satisfaction in that.

As noted in section II above, our plan is to increase all student success by increasing hands-on components in our lecture courses and a stand-alone laboratory course. It is our belief that increasing all students' success rates will narrow the gap, since our performance for targeted groups has more room for improvement than for others..

### IV. Budget Limitations (Please be specific in your responses.)

The Astronomy program is in a peculiar position as concerns materials budgeting, since its primary expenses for classroom materials are largely borne by Community Education as part of the multi-million dollar Planetarium upgrade process. Our division's major non-instructor expense is its contribution to the Planetarium technical director's salary, and we consider that position to be indispensable (see section I above) without very, very serious harm to one of the most productive academic programs on campus.

### V. Additional Comments

The Astronomy program at DeAnza College is privileged to work in what is arguably one of the finest, most advanced planetarium facilities in the nation. This allows us to provide DeAnza students with learning opportunities in astronomy that have little parallel elsewhere, and we are excited to be able to do so, and are grateful to the people of our district who made this facility possible by their generosity. We are also grateful to Community Education, under the capable direction of Dean Caron Blinick, for working so closely and productively with us in our shared venue for the past two decades.