Introduction: Brief description of the program and program mission.

The Biotechnician Certificate of Achievement is designed to: 1.) Prepare students for employment in the biotechnology industry and in research labs doing work in biotechnology. 2.) Meet the workforce needs of the emerging biotech industry in Hawai‘i. 3.) Offer a biotech curriculum option for students enrolled in STEM majors and planning to transfer to 4 year institutions. 4.) Offer a biotech curriculum option for students enrolled in the 2-year AS Medical Laboratory Technician Program, preparing them for emerging technical innovations in the medical laboratory industry.

Part I.
Quantitative Indicators (Reported on 2009 Summary Report Program Data excel sheet --includes health calls based on system scoring rubric).

See “Annual Report of Program Data for Biotechnician (BIOT)”, attached

Part II.
Analysis of the Program (strengths and weaknesses in terms of demand, efficiency, and effectiveness based on an analysis of the data).

Note: 1) Career Technical Education (CTE) programs must include in analysis any Perkins IV Core indicator for which the program did not meet the goal.
2) If using alternative “program capacity” method to determine program efficiency, include in analysis.

The Biotechnician Certificate of Achievement is a small program that has no BOR-appointed faculty and no dedicated facilities. The Program is organized around courses, and their supporting infrastructure, that exist as requirements and electives for other majors; thus the Program lists no courses with the BIOT alpha. The certificate is intended as an option either for students enrolled in other Science Technology Engineering and Math (STEM) majors or for students in the
Medical Laboratory Technician (MLT) Program, to enhance their skill set and prepare them for cutting edge work in biotechnology -- a field that is emerging as an important part of these majors. It is noteworthy that since many of the Biotechnician certificate students are primarily enrolled as majors in MLT or other STEM disciplines they often neglect to list Biotechnician as a major until graduation. Because of these contingencies, (no BOR faculty, no BIOT alpha courses, and underreporting of majors) the Demand, Efficiency, and Effectiveness Indicators in the Annual Report of Program Data for Biotechnician are unreliable, and in several instances the data on the Annual Report chart simply do not match our STAR records or our Program records.

Thus, in academic year 2008-2009:

- our STAR records report six majors in the program and four awarded certificates; whereas the Annual Report Program Data sheet indicates only two majors and one certificate awarded.

- Our Program records also indicate that two of this year’s certificate awardees were concurrently enrolled in Manoa programs, and that one of these students graduated with a BS degree in Bioengineering from UH-Manoa in Spring 2009. The Annual Report Program Data sheet indicates zero transfers.

- Our Program records indicate that two of Biotechnician certificate awardees from previous years entered the UH-Hilo Pharmacy program this year. There is no indication of any of these ‘successes’ in the Annual Report of Program Data.

Similarly, with regard to the Perkins IV Core Indicators there are numerous discrepancies between our records and those listed on the Annual Report of Program Data.

- All of the second year Biotechnician CA students graduated this past year, thus the Completion category should be 100.00.

- All of the first year students who listed Biotechnician as a major last year remain enrolled in the Program, thus the Student Retention category is correct at 100.00 as listed.

- Two of our graduates from last year are now employed full-time as laboratory technicians. A third graduate is employed part-time as a laboratory technician while pursuing a BS at UH-Manoa. The fourth person in last year’s graduating cohort also graduated with a BS in Bioengineering and has secured a technical position in San Diego. Thus the Student Placement category should be 100.00.
• Three of the Biotechnician CA graduates are Asian women, thus the Nontraditional Completion category should be 75.00

The Biotechnician CA Program has produced 20 graduates since 2004 and most of the CA awardees have been concurrent graduates of the MLT Program. This is an expected and desired consequence since the Biotechnician CA was, in part, created to offer the MLT students a pathway into biotechnology. We believe these are healthy outcomes for a CA program that has no assigned faculty and no dedicated budget.

The Program has been successful in attracting extramural funds particularly from NIH-INBRE and NSF-EPSCoR. This money has been used to fund stipends for students doing research projects and purchase equipment and supplies that are also used for other biology and microbiology classes. Last year we were awarded $24,000 in direct and $9,000 in indirect costs from INBRE. The program has also established a Monoclonal Antibody Service Facility and Training Center (MASFTC) in which biotech students help make antibodies for research investigators throughout the University community. The MASFTC pays student helpers and supports itself by charging investigators a fee for the service.

All of this reflects a small but vibrant Program that costs little to operate yet produces successful graduates and significant benefits to the University.

**Significant Program Actions (new certificates, stop-out; gain/loss of positions, results of prior year’s action plan).**

We have established a memorandum of understanding (MOU) with the Biology Program at UH-Manoa. The MOU stipulates the Biology Program will accept our Molecular Biology course (MICR 230, 3 credits lecture/lab) as equivalent to the Cell and Molecular Biology Laboratory course (BIOL 275L) offered at UH-Manoa.

**Part III. Action Plan**

Faculty will continue to recruit student planning to major in biology. The Program Coordinator will continue to develop relationships with the local biotech community.

**Part IV. Resource Implications (physical, human, financial).**

The Program has little budgetary impact since the courses needed for certification already exist as requirements or electives for other majors. It also uses the same supplies and equipment as MICR 140, BIOL 171L and BIOL 275L classes.

**Annual Report Program Data and analysis located on college website at:**