Example Research Recharge Center Business Plan

Proteomics and Metabolomics Facility

Account: 2108200
Date: Updated December 2016

I. General Description

The mission of the Proteomics and Metabolomics Facility (PMF) is to serve as an enabling resource for research and development programs at Colorado State University. We strive to build mass spectrometry instrument capabilities that exceed the normal resources of individual research programs, and make those technologies available as a shared resource. PMF also aims to provide an environment rich in expertise and educational resources, and to foster collaboration across the CSU community and beyond.

The PMF is an established resource providing service to the CSU research community in the area of mass spectrometry based proteomics and metabolomics. The PMF is comprised primarily of 2,414 sq. ft. on the 1st floor of the Microbiology Building on the CSU main campus.

Specific instrumentation capabilities of the PMF include: A Thermo-FInnigan Orbitrap Velos with an Easy nanoLC system (controlled by a Dell PC and Xcalibur/Bioworks software); A Bruker Daltonics Micoflex LRF MALDI-TOF mass spectrometer (controlled by and HP PC and FlexAnalysis/Biotools software); A Waters Xevo G2 ESI-TOF mass spectrometer with a capillary Waters Aquity UPLC unit (controlled by a Dell PC and MassLynx software); A Waters Xevo G2 ESI-Q/TOF mass spectrometer with a capillary Waters Aquity UPLC unit (controlled by a Dell PC and MassLynx software); Perkin Elmer ELAN DRC ICP-MS; Two Waters Xevo TQ-S mass spectrometers with Waters nanoAcquity UPLC units (controlled by a Dell PC and MassLynx software); Three Thermo Scienfitic Trace ISQ GC-MS instruments (Xcalibur software), one of which is serviced by a headspace/SPME/ITEX capable autosampler and an olfactory port; 1 dimensional SDS-PAGE gel electrophoresis apparatus; seven chemical fume hoods; incubators; 2 Savant Speed Vac systems with refrigerated vapor trap; Lyophilization unit, 3 nitrogen evaporators, Probe Sonicator, nanodrop, UV/Vis spectrophotemeter, microplate reader; 5 -80C freezers; 3 -20C freezers and several refrigerators. Specific software capabilities of the PMF include: Mascot proteomics database searching software, Scaffold (post-search proteomic data analysis), and SimcaP (multi-variate statistics for metabolomics).

Operation leadership: Jessica Prenni, PMF Director

II. Market Analysis

The current client base is approximately 67% internal to CSU and 33% external users. Specifically, during FY15-FY16, the PMF served 212 CSU PIs (spanning 25 departments across 7 colleges), 24 external academic or non-profit institutions, and 14 external commercial clients. 53 accounts are served for internal clients.

Marketing is performed through the following activities:

1. PMF website (https://vpr.colostate.edu/pmf/) provides service descriptions, contact information, pricing, and educational resources.

2. Annual electronic newsletters are sent to the CSU research community to keep users up to date on current PMF personnel, capabilities, and services.
3. Social networking: PMF Facebook page
4. The PMF is listed on Science Exchange (www.scienceexchange.com), a community marketplace for scientific service providers.
5. PMF Director and lab personnel attend professional conferences and use that as an opportunity to promote our services and establish collaborative relationships.
6. Referrals from investigators whom have used our services in the past.

Since its inception as an oligo house in the early 1990's, the PMF has changed both its name and focus to reflect market demand. Initially, under the name "Macromolecular Resources," facility services were limited to the production of synthetic DNA and peptides. A shift in directorship and increasing external competition for synthesis operations initiated a transition of the facility to focus on biological mass spectrometry applications and DNA sequencing. This transition included a name change to "Proteomics and Metabolomics Facility" (2007). Presently, all synthesis and sequencing applications are outsourced and the service emphasis of the PMF is based on research services including: project collaboration, grant writing, experimental design, data acquisition, and expert data analysis related to biological mass spectrometry. The PMF also houses an enzyme freezer program providing in-stock access to commonly used laboratory supplies and reagents. Most major research institutions maintain similar facilities providing services in the area of biological mass spectrometry. The PMF is the only service facility at CSU to offer these specific services. Annual market analysis is performed to ensure that our service prices are within market value.

C. Revenue and Expense Analysis

The PMF operates as a Recharge Center utilizing a 21 account (2108200) for internal customers and an Educational Business Activities 22 account (2223900) for external customers. Billing for internal customers is done through the University's Financial System (Kuali). External customers can pay by either PO number or credit card. A credit card authorization form is provided on the PMF website. Authorization forms are shredded after payment is received. Supplies are purchased as needed and thus no inventory is maintained. Samples are submitted in person in designated submission sites within the PMF labs or are sent to us overnight via Federal Express. The on-site life science stockroom is operated as a consignment service. Prices for all in-stock items as well as all services are listed on the PMF website. An in-house system (QuickBooks) is used to maintain records of external billings and inventory. Revenues and expenses are generally evenly distributed over the fiscal year.

CSU users are charged full actual costing, non-profits/academic institutions are charged full actual costing minus CSU subsidy (unsubsidized base) plus the current NIH negotiated F&A rate, commercial entities are charged unsubsidized base price plus double the current NIH negotiated F&A rate. Full actual costing is calculated using the Rate Workbook and is based on operating expenses including: reagents, consumables, gas, solvents, service agreements, facility overhead and administration, capital lease payments (if applicable), and staff salary offset by any internal subsidy funding. Bi-annual costing analysis is performed to ensure that our user fees accurately reflect our actual costs and that they are within market levels based on comparison with posted fees of other tier one research universities.

D. Additional Considerations

Services provided by the PMF do involve the analysis of hazardous and biological materials. All employees of the PMF maintain up-to-date training for hazardous waste disposal as well as Blood-borne pathogen precaution. The PMF operates as a BSL2 laboratory.