

Label	Value
Core Facility Name	Eukaryotic Tissue Culture Facility
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Amount of Funding Requested Briefly describe the core services you offer:	<p>25,000</p> <p>The high-quality production of proteins is essential to many biomedical disciplines, including in vitro biochemistry, structural biology, high-throughput screening, and antibody production. Many proteins of interest, particularly those from mammals such as humans, can only be viably produced in eukaryotic cell systems. The Eukaryotic Tissue Culture Facility (ETCF) supports JHMI researchers with the culturing of insect and mammalian cells for high-yield protein expression in suspension. The facility operates with two service models: (1) an ‘assisted’ model, where facility staff carry out cell culture and expression for users, and (2) an ‘independent’ model, in which JHMI researchers use facility instrumentation to carry out the expression.</p> <p>The facility is designed to provide JHMI researchers with space and equipment for protein expression in eukaryotic cells and for training laboratory personnel, thereby avoiding a need for individual labs to set up their expensive facilities. The ETCF provides instrumentation for the culturing and expression in suspension of eukaryotic proteins in a BSL-2 rated tissue culture laboratory. It offers laboratory equipment required for insect cell and mammalian cell culture, including tissue culture hoods, refrigerators, chilled centrifuges, incubators, liquid nitrogen storage, a light microscope, a cell counter, and a Centramate tangential flow system for concentration of secreted proteins in large volumes.</p>
What specific services do you plan to offer as part of this RFA?	<p>At present, the ETCF can only offer insect cell and eukaryotic cell expression services for users who have defined expression constructs already in hand. The level of funds requested will allow us to allocate an average of 10 awards to different users of about \$2500 each. This level of support can provide flexible support for diverse user needs, such as the expression of five different clones in 1L of culture each using HEK293 cells, scale-up HEK 293 transfection of a single virus in 5L of culture, a small trial of expression conditions for several different bacmids using insect cells, or large-scale bacmid expression in ~10-12L insect cell culture. We can also offer a \$2500 credit toward the use of the facility for custom user needs that require extensive support from our facility manager. The current cost to express protein at the facility are listed as follows:</p> <p>Producing recombinant baculovirus (P1- from bacmid) \$ 148.00 Baculovirus amplification P1 to P2 \$ 87.00 Baculovirus amplification P2 to P3 \$ 135.00 Insect cell expression recombinant protein -1L \$ 301.00 Insect cell expression recombinant protein - 4L \$ 756.00 Small protein expression (from bacmid-50mlprotein) \$ 370.00 Transfection of Mammalian cell + in well adherent \$ 530.00 Transfection of Mammalian cell + 100 ml \$ 321.00 Transfection of Mammalian cell + 1L \$ 581.00 Transfection of Mammalian cell + 4L \$1,689.00 Single Clone adapting and scale up to 1L \$ 520.00 Single Clone adapting and scale up to 4L \$1,720.00</p>

<p>How do these services address the goals of the pilot program?</p>	<p>The current program aims to provide access to core facilities to move their science further. Receipt of Core Coin funds award would allow the ETCF to help users gain access to what can be an expensive service. The specialization in expertise and equipment required to express proteins in eukaryotic cells in suspension, coupled with the high cost of serum-based growth medias, prevents many labs from obtaining protein reagents necessary to the research of SOM faculty members. The ability of the ETCF to provide Core Coins through our planned competition will expand investigator access to our facility, opening up the prospect of increasing the size of our repeat user base.</p>
<p>How would you select recipients to receive core services? Please describe the process and criteria you might use.</p>	<p>Should the pilot program see fit to provide the ETCF with funds, we will email the Hopkins research community announcing that we are seeking applications for Core Coins that would used for protein expression projects requiring eukaryotic or insect cells. Investigators would submit a one-page application describing how would use the ETCF to produce a key reagent needed for the investigator's studies. New users of the ETCF, junior faculty, and faculty who do not have currently sufficient funds to carry out these experiments would be encouraged to apply and potentially given preference depending on the number of applications received and the proposed science. At least three awards would be reserved for current users regardless of their funding situation.</p> <p>Applications will be due two months after issuing the announcement. A committee consisting of both co-directors, Dr. Berger and Dr. Gabelli, together with two other JHU PI that use the ETCF but who did not submit an application, will rank the proposals based on feasibility, impact, and potential for funding.</p>
<p>How do you plan to allocate the amounts available to individual investigators?</p>	<p>We will allocate the entirety of the requested \$25,000 to ~10 researchers, and more if possible, to attempt to maximize the impact of the funds. We will request that awardees notify the ETCF of any publications and acknowledge our service in their papers. We will survey the awardees to determine the impact of the coins in the different populations.</p>