

Thursday, August 11, 2022

Dear committee members

I am writing to request lottery funds to supplement the remainder of the initial funds (\$758K) earmarked in 2016 for my purchase of metabolomic instrument(s) at UCR.

Given the fast technological advances in analytical instrumentation, I only spent 2/3 of the earmarked budget and refrained from any additional purchases. I reasoned that we would proceed with additional purchases when newer, more advanced instruments were on the market, and when we were positioned to hire faculty members, who have the pertinent research interest and teaching capabilities, in the area of biochemistry, with emphasis on organismal metabolomics/proteomics. I believe that now, given the intended expansion of the appropriate UCR faculty, fit for teaching and research in this area, and the arrival of Ascend, the most recent, and advanced multifunctional Mass-Spec at Thermo, capable of conducting single cell proteomics/metabolomics and imaging, justifies the expenditure of the remaining initial earmarked funds with support of the additional supplemental lottery funds.

We have conducted a survey to document the needs of existing faculty, who have previously in oral or in a written communication expressed their need for this instrument. The result is unanimous and enthusiastic support for such a purchase (see letters attached).

I truly believe that this instrument will uniquely position us to develop new teaching courses, in a cutting-edge field, and will help to expand our research capabilities and activities. In addition, the ability to perform single cell analyses with such a high resolution will also greatly enhance our success of obtaining federal funds and attracting high caliber new faculty hires, who will be instrumental in developing new graduate and undergraduate courses in biochemistry and metabolomics/proteomics. This instrument will be used for hands on training of the current graduate students (471 students as of Fall 2021) in various life science programs, plus additional students from other programs, such as chemistry. Specifically, we are planning to hold monthly workshops, and supervised hands-on training of 25 students/Q using the instrument. Most importantly the purchase of this new dual-purpose instrument will free the existing low-resolution Fission Orbitrap mass spec for use in developing new biochemistry courses, with accompanying hands-on training of undergraduates at UCR. To begin with, I will use my Bio5A class (~500-600 students) for introducing the power of this analytical platform, followed by the development of tailored analytical (proteomics/metabolomics) courses for the undergrad students. I am certain that the skills imparted in these training programs will open up ample job opportunities for the trained grad- and undergrad students.

I hope that the accompanying documents (list of supporting faculty, supporting letters, justification and brief description of instrument, detailed description of the instrument, Thermo quote and the budget) can provide the information required for your decision.

I am fully cognizant of the complexities associated with the requested amount, but I assure you that I have been and continue to be prudent in expenditure of large sums as reflected in my having left the earmarked \$758K untouched, and my delaying any other additional purchases, until the

optimal time arose. I would also like to emphasize that I am committed to training UCR students in analytical techniques. It has been my long-standing plan to develop new courses in biochemistry and to provide hands on training for these students. Our new hires together with this new instrument will realize this long-standing goal.

In addition, and importantly, I want to emphasize that we have been able to negotiate an unprecedented price reduction of \$853,403 with Thermo, thereby, reducing the instrument price from \$2,113,570.71 to \$1,348,020.45. As described in 'Justification', this reduction was based on our strong capacity to aid Thermo to optimize their current software program for application to specific runs (for example analyses of post-translational modifications).

I truly believe that the unique power of this new instrument will provide the recovery of the investments, in the form of enhanced competitive funding, within a very short period, and that it will expand our teaching capabilities, and by extension, the job prospects of UCR graduates.

I would be happy to provide any additional information you might need for approval of the lottery funds for the purchase of this instrument. The requested fund varies in amount depending on the final tax rate (\$707,972.24 with a tax rate at 8.75%; or \$654,961.34 with a tax rate at 4.8175%).

I greatly appreciate your time and efforts, and hope that you favorably consider this request.

Be powerful



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