

OMB Control No. # 0693-0033 – NIST Generic Clearance for Program Evaluation Data Collections

Title: The Next NIST Interlaboratory Comparison Exercise for Lipidomics and Metabolomics

Four Standard Survey Questions

- 1.) **Explain who will be surveyed and why the group is appropriate to survey.** The survey cohort will consist of lipidomics and metabolomic laboratories that were contacted during the previous lipidomics interlaboratory exercise (n = 100, started in 2014) and the follow-up lipidomic survey (OMB Control #0693-0033), in addition to laboratories who have indicated over the past three years that they wish to participate in upcoming interlaboratory lipidomic and metabolomic exercises (n ≈ 100, each for lipidomic and metabolomics laboratories). One aspect that was gleaned from the previous lipidomics survey was the need for tissue-based reference materials (63 % selected), which was the second highest biological material requested. Thus, we aim to develop tissue-based reference materials that are specifically designed and suitable for all omics methodologies (extending beyond just lipidomics) to fill this current research gap across the omics community.

The purpose of this survey is to ascertain the lipidomics and metabolomics community's interest in regards to NIST's next measurement effort (implementing tissue-based reference materials, among other exercises). In order to properly meet the needs of our lipidomic stakeholders, this survey has questions aimed to better assess the creation of these reference materials, as we want to make sure we provide materials that have value to the community and will be useful. To best meet the needs of the entire lipidomics and metabolomics community, our survey cohort represents a unique and diversified cross-section of laboratories, both experienced and newly-formed, domestic and international, global and targeted profiling, and which come from different arenas, including academia, industry, core facilities, and government.

- 2.) **Explain how the survey was developed including consultation with interested parties, pre-testing, and responses to suggestions for improvement.** The survey questions were developed to specifically define the community's interest in the proposed activities and to help explicitly define the reference materials we aim to make. Before we can develop the tissue-based reference material (candidate materials are brain and liver), we must first assimilate community information regarding the design of the material to make sure it is fit-for-purpose. Thus, for lipidomics and metabolomics specifically, we have constructed a short survey that covers the intricate details needed to make the material, such as tissues types offered, what species, healthy/diseased, and how much tissue we should provide per vial. We also asked laboratories for preference of the state in which the tissue is offered (lyophilized or fresh frozen) and if including pre-extracted

materials would be helpful. We want to make sure to provide materials that have value to the community and will be useful, thus we want the community to drive this component of the reference material creation.

- 3.) **Explain how the survey will be conducted, how customers will be sampled if fewer than all customers will be surveyed, expected response rate, and actions your agency plans to take to improve the response rate.** We intend to send the survey to 200 participants (100 lipidomics, 100 metabolomics), representing a unique community cross-section, using Survey Monkey. Based on our previous lipidomics survey rate of participation (35%), we anticipate that the rate of participation will likely be better (since it is a short survey), estimated at 50 % participation. The only action we will take to drive the response rate up will be to send a reminder if the participant has not responded.
- 4.) **Describe how the results of the survey will be analyzed and used to generalize the results to the entire customer population.** As described above, the results of the survey are intended to aid in the development of new reference materials and potential follow-up interlaboratory exercises and/or measurement activities. The survey results are not intended to be published; however, the results may be referenced in a publication if we feel it necessary to justify decisions regarding the creation of reference materials. All labs will be de-identified. In the end, this survey will be an excellent way for NIST to continue its establishment as an active omics community member and momentum as a leader in omics measurement efforts.