

October 6, 2011

Dr. Fred Roberts
Convener, MPS AC Math/Stat Subgroup

Dear Fred,

I am writing to inform you regarding a proposal to change the name of our Division. My decision to seek a name change is the result of discussions on how best to position the Division for the future, in light of the very clearly established trends toward scientific discovery increasingly dependent on the collection and interpretation of (massive) data and quantitative information. Query a layperson (or a policymaker) as to the academic disciplines most relevant to the Age of Information and the likely responses are Computer Science, Mathematics, and Statistics. DMS is an important source of funding for two of these three disciplines yet the current name manifests only one. The proposed new name of the Division,

Division of Mathematical and Statistical Sciences (MSS)

recognizes explicitly the two major disciplines served by the Division. Including both disciplines in the name would allow the Division to effectively leverage the combined resources and support of two very large communities, thus putting the Division in a better position to vie for future resources and be inclusive of the growing statistics community.

The Division hopes to get feedback from your group on the proposed name change, as well as any feedback that your group gathers from the mathematical and statistical communities. Following is some background information that you and the community may find useful. Please do not hesitate to contact me if more is desired.

Big Data:

Big data provide big opportunities for mathematical and statistical sciences. It is an exciting time for our Division. In his FY12 budget roll-out speech NSF Director Dr. Subra Suresh referred to the "era of data and observation." The NSF 2011-2016 Strategic Plan notes that "The revolution in information and communication technologies is another major factor influencing the conduct of 21st century research. New cyber tools for collecting, analyzing, communicating, and storing information are transforming the conduct of research and learning. One aspect of the information technology revolution is the 'DATA DELUGE,' shorthand for the emergence of massive amounts of data and the changing capacity of scientists and engineers to maintain and analyze it." Extracting useful knowledge from the deluge of data is critical to the scientific successes of the future. Data-intensive research will drive many of the major scientific breakthroughs in the coming decades. There is a long-term need for research and workforce development in computational and data-enabled sciences. Statistics is broadly recognized as

a data-centric discipline, thus having it in the Division's name as proposed would be advantageous whenever "Big Data" and data-sciences investments are discussed internally and externally.

I want to emphasize that the primary objective of the name change is to build a broader base from which to attract new funds. We expect the new resources to benefit all core programs, and do not envision reducing funding for core areas of mathematics and statistics. The latter are essential and the investment in fundamental research in core disciplines continues to be a priority. Computational and Data-Enabled Science and Engineering research and other initiatives provide more opportunities for mathematicians and statisticians to collaborate as co-investigators in tackling new challenges.

A Bigger Community:

The spectrum of statistical sciences is highly varied, especially in light of its connections to areas such as biostatistics, various informatics, analytics, data mining, industrial statistics, federal statistics, survey methodology, applied statistics, and research methodology more generally, that are supported by NSF within and outside of our Division. The progression and the culture of statistics do not justify its being viewed as one of the mathematical sciences; there is common ground between the communities but it is their differences that make their union so compelling and formidable when positioning for funding in a data-centric environment. Statistical sciences are inherently multidisciplinary and proposed explicit inclusion of "statistical sciences" in the name of our Division will also facilitate collaborations among other divisions at NSF.

In summary, the proposed new name would put our Division in a much better position to vie for new resources in this era of big data. It emphasizes the union of two large but different communities. The proposed new name would help increase resources for ALL core programs, keep the communities united, and thus is a win-win for both communities. I want to emphasize again that, as the Division Director, my goal is to enhance the resources to our Division and ensure that any new resources benefit all of our programs.

Finally, the proposed name change would make the Division better able to attract new resources in areas such as sustainability, energy, massive and complex data, economic development, health, environment and security, and provide new opportunities for collaborations among mathematicians and statisticians, and with other domain sciences and engineering. Such collaborations and unity of the two communities would be important for the future discoveries and for future resources for innovation.

I look forward to feedback on the proposal from your group, including any other input you might gather.

Sincerely,



Sastry G. Pantula, Division Director, DMS/NSF