

**Responses from AMS Members**  
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EMAIL NUMBER 001

I agree that it is a very bad idea.

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EMAIL NUMBER 002

I concur with the opinions expressed in the email message. Having two distinct names is a divisive tactic; in my experience, inclusive mathematical science departments have fared much better, both scientifically and personally, than those that are divided. Furthermore, given the economic exigencies of our times, the mood of our Congress, and the general tendency to consider anything other than mission-oriented research an extravagant indulgence, the split in the name of DMS would almost inevitably deflect most of the funding to the areas of Statistics that don't necessarily represent the Mathematical Sciences.

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EMAIL NUMBER 003

(Vacation message or similar non-response)

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EMAIL NUMBER 004

(Vacation message or similar non-response)

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EMAIL NUMBER 005

(Vacation message or similar non-response)

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EMAIL NUMBER 006

I write in response to the email letter from Eric Friedlander below. I am opposed to this name change. I may say that it is the most misguided proposal for a name change in a mathematics-related organization that I have encountered since I wrote my first research paper in 1969.

Statistics is, of course, an application of mathematics. While it is a very nuanced subject with respect to the way in which it is applied to

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real world problems, there is a large body of theory, namely 'mathematical statistics', which underpins all the high quality applications. Mathematical statistics is a branch of mathematics. The proposal therefore makes as much sense as renaming DMS to be the Division of Fluid Mechanics and Mathematical Sciences.

DMS exists to fund theoretical work; presumably there is no intent to divert its resources to the operations of statistics in the commercial world, the military, etc., at several removes from 'mathematical statistics'. If there is such an intent, we are in far more trouble than an argument about the name attached to DMS!

It might be thought that the name of the Division is not crucial. But in fact the proposed renaming would twist the whole view of mathematics by those who fund our efforts, whether a committee of Congress or, less directly, the patient taxpayer who, in general terms, believes in the wisdom of what government is doing with the money collected.

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EMAIL NUMBER 007

Dear AMS Colleagues,

I strongly oppose the suggestion that NSF's Division of Mathematical Sciences (DMS) be renamed the Division of Mathematical and Statistical Sciences. I agree with all the reasons given (in the AMS President's e-mail of October 11) against this proposal.

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EMAIL NUMBER 008

I strongly object to the proposed name change.

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EMAIL NUMBER 009

I agree wholeheartedly with Eric Friedlander's letter regarding the proposed name change.

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EMAIL NUMBER 010

## Responses from AMS Members

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I am a bit puzzled by the proposal to change the name of the NSF's Division of Mathematical Sciences to the Division of Mathematical and Statistical Sciences. There seem to be two possibilities:

1. The change is intended to be only in the name, and not in the subjects being funded. In that case, it seems odd to single out Statistics, since it is only a small part of what is done in DMS.
2. The change is intended to alter the kinds of proposals being considered. The letter from Director Pantula suggests that this is the case. This leads to two other possibilities:

2A. The funding level will remain the same, but new proposals in non-mathematical parts of Statistics will now be accepted. This will inevitably imply less funding for mathematics, which is already underfunded.

2B. New proposals in statistics will be considered, and new funding will be added to pay for them. In that case, this is not a simple name change; it's a substantial reorganization.

It's true that subjects Statistics that span multiple disciplines don't necessarily have a single home at NSF. But that's not an altogether bad thing. I work in an interdisciplinary area myself, and I have received NSF funding from different divisions, depending on the particular project. This flexibility has probably helped me more than it's harmed me.

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EMAIL NUMBER 011

This is a tempest in a teapot.

Please go read "Towards Excellence" again and pay attention to the chapter with the comments by Deans of their math departments.

You will once again establish a position contrary to everyone else and once again the world will ignore us and do what it was going to do anyway.

If you oppose this and then lose (as you will), then what? What will you have proven?

If you win and create will among all the science divisions of the NSF, then what? Math is tiny.

The object is to allow the NSF to do what it does but make sure that math has a potent, meaningful, and cooperative place at the table. If math ends up underfunded (which I doubt will happen). Then at that time, there will once again be a David Report and things will right themselves.

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Too often mathematicians lose big because they choose to fight and lose.  
Better to cooperate and influence the process.

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EMAIL NUMBER 012

(Vacation message or similar non-response)

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EMAIL NUMBER 013

(Vacation message or similar non-response)

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EMAIL NUMBER 014

(Vacation message or similar non-response)

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EMAIL NUMBER 015

Director Pantula is concurrently the president of the American  
Statistical Association, as one can learn from his webpage,

<http://www4.stat.ncsu.edu/~pantula/>

This fact is also stated in the announcement of his directorship at DMS  
on the SIAM website,

<http://www.siam.org/about/news-siam.php?id=1738>

I cannot see in Director Pantula's letter that this important  
circumstance has been mentioned.

It seems to me that his proposal of a name change for DMS can be rejected  
solely based on this seeming conflict of interest.

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EMAIL NUMBER 016

(Vacation message or similar non-response)

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EMAIL NUMBER 17

I am in complete agreement with the position described in Eric Friedlander's letter to oppose the propose name change. And with the reasoning of his letter.

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EMAIL NUMBER 18

Only bean counters could suggest something like this.

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EMAIL NUMBER 19

(Vacation message or similar non-response)

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EMAIL NUMBER 20

(Vacation message or similar non-response)

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EMAIL NUMBER 21

For what it is worth, I agree with Friedlander that it is a bad idea for all of the stated reasons.

The explicit naming of statistics as a part of the name change reveals a desire to use separate rules for selecting proposals (statistics vs mathematics) and will end up of redistribution of funds.

Politically it comes from the need to data mine ever increasing flood of information. The point that is missed is that many recent important innovations in statistics came from analysis and numerical analysis, i.e. wavelets, sparsity, etc. By setting different criteria (and that will be the end result of the name change) the overall efficiency of program will decrease.

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EMAIL NUMBER 22

I am strongly opposed to the proposed name change for DMS.

Good reasons for not implementing this proposed change have already been well articulated by others, and I agree with their arguments.

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EMAIL NUMBER 23

The suggestion to rename DMS as Div. of Math. and Stat. Sciences is worse than horrible.

First of all, statistics is already a mathematical science, and hence the new name would be redundant.

Second of all, it seems that Pantula has an agenda that must be stopped. Rather than embracing all the mathematical sciences under one umbrella, he is choosing his OWN area and adding it to the name. I believe that Pantula has come close to an ethical violation that could lead to his ouster.

What would happen if previous heads of DMS had done the same?

Would we be the division of mathematical and number theoretic sciences? Would we then change our name to the division of mathematical, number theoretical, and differential geometric sciences?

When would it stop?

Third of all, the name change is a blatant attempt to move math toward applied areas (at least in perception). But the history of our esteemed subject clearly demonstrates the power of pure mathematical thinking.

Please ensure that our profession does not make such an egregious error.

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EMAIL NUMBER 24

(Vacation message or similar non-response)

EMAIL NUMBER 25

I am an outsider -- a chemist who uses mathematics but is not a practicing mathematician. The deepest insights that I have gained in the physical sciences arise from the application of "pure math". The more applied aspects of mathematics, those disciplines that generally fall under the rubric of "applied math" or "statistics", have limited ranges of application and fail to address my need for insight into fundamental problems. I try to find appropriate mathematics to solve problems, rather than using a particular toolkit to apply to several different problems. Given this approach to problem solving, I need to be able to look at a range of mathematics. Keeping mathematics general and wide-ranging, rather than selecting out some one or another branch for special treatment, is crucial to sustaining the important developments that will find their way into the physical sciences.

It seems that this name change is intended to de-emphasize pure math to the detriment of the subject. I agree with you in opposing the name change.

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EMAIL NUMBER 26

The proposed name change is a truly terrible idea. It is difficult to believe that it would be advocated by anyone who understands the nature and significance of basic research in mathematics.

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EMAIL NUMBER 27

I agree with Eric Friedlander that the name should not be changed. His reasons are persuasive.

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EMAIL NUMBER 28

Stat is not math, and if the point of the proposal is to include something mathematical in the division of mathematics, than one could more easily include physics than statistics.

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EMAIL NUMBER 29

(Vacation message or similar non-response)

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EMAIL NUMBER 30

(Vacation message or similar non-response)

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EMAIL NUMBER 31

(Vacation message or similar non-response)

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EMAIL NUMBER 32

I strongly oppose the name change due to some of the reasons presented below. Statistics is just one discipline supported within the DMS and it should be given the same attention as the other 9 disciplines left within DMS.

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EMAIL NUMBER 33

First of all, I endorse that five points in the message from Eric Friedlander on October 11, that prompted this message.

Statistics undeniably has a growing scientific and technological importance, with a broad range of important applications. And so it deserves the broad base of support from industrial, health, and defense sources as well as from federal funding that it already receives. Moreover, there is significant basic research in statistics that fits naturally in the mathematical sciences.



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But the predominant methodologies and culture of statistics, while having a substantial intersection with the mathematical sciences, are fundamentally different from the the general culture of the mathematical sciences. The proposed name change suggests a level of symbiosis and commonality that distorts reality, and risks diluting, for the mathematical sciences, the heritage of nurturing fundamental research for which the NSF is the primary federal steward.

Synergy between statistics and the mathematical sciences is essential, and all for the good. But co-opting the name of the DMS to encourage or recognize this is both unnecessary, and potentially damaging.

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EMAIL NUMBER 34

Strongly opposed, for many reasons, mostly mentioned in yours...

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EMAIL NUMBER 35

(Vacation message or similar non-response)

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EMAIL NUMBER 36

I would like to record my opposition to changing the name, Division of Mathematical Sciences to Division of Mathematical and Statistical Sciences. The objectives of Mathematics research and Statistics research are fundamentally different. Why does one want to hook Statistics to Mathematics? It would make as much sense to say Division of Mathematical and Programming Sciences. These two disciplines, laudatory as they both might be, are also fundamentally different in their objectives. I do not know from whence the suggested name came, but I would guess that it came from a statistician out of feeling of inferiority of his or her own discipline and so wanting to latch it to something he or she felt more respectable. In other words, the proposed name change seems, in essence, is insulting to statisticians, if it came from a statistician.

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EMAIL NUMBER 37

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I am myself interested in statistics and its applications. It has many aspects. It must be encouraged and funded.

It is not a new field. If one believes that it is no more a part of Mathematical Sciences, in view of the data deluge evolution, then one should create a new division, like Computer Science has been created not so long time ago.

If the objective is to increase the funding with no reduction for mathematics, that is what should be done.

Mixing Mathematical Sciences with something else will not increase the funding, as history can tell very clearly. Both Mathematics and Statistics will lose, and internal conflicts will inevitably come out.

Mathematical Sciences is a well established division. It must remain as such. New divisions can be created, as it has been the case in the past. It is a normal and good thing. NSF could claim an additional budget for this new division.

Why is this option not considered?

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EMAIL NUMBER 38

I am writing to express my extreme displeasure with the proposed name change for NSF DMS. I completely agree with the arguments against a name change outlined in the letter from the AMS president. I feel that this change would adversely impact the unity of the mathematical community, and would also have an overall negative impact on funding for the entire mathematical community.

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EMAIL NUMBER 39

(Vacation message or similar non-response)

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EMAIL NUMBER 40

With all due respect to my colleagues' opinions, I do not see the move as a negative one. In fact, it could cause many descriptive statisticians to think more mathematically and make their research more reliable. I

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believe, it is up to those who are to implement the change, if ever approved, under type of policies they want to fund proposals. Currently, there are many grants awarded for curriculum changes, etc. under the mathematical science umbrella that are nothing but wasting taxpayers' money and damaging the name of researchers. I also think, this move may bring mathematicians and statisticians much closer to each other for more practical basic research collaboration than some isolated fancy researches that no human being will ever use them.

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EMAIL NUMBER 41

I think the Mathematical Sciences are important enough to continue to have their own (separate) division.

What are the reasons given for changing the name?

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EMAIL NUMBER 42

As a teacher of statistics at the high school, college, and graduate level; as a teacher of mathematics at the high school level; but with my PhD in Physics (metrology using an inordinate amount of statistics to measure the cesium D1 line to 13 significant digits), I am opposed to a change in name which brings statistics above any of the other branches of mathematics. I know there are many departments of statistics or mathematics and statistics; even math departments without any statisticians (Notre Dame when I interviewed a few years back), however, mathematical sciences is an inclusive name which includes statistics, among others.

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EMAIL NUMBER 43

Having been a director of two DMS mathematical institutes (IMA, 1987-1997 and MBI, 2002-2008) I am totally opposed to change of name of DMS; the suggestion of name change looks like an attempt at policy change, which is wrong in my opinion. Mathematical statistics is just one of many disciplinary fields of mathematics, like scientific computations, mathematical biology, number theory, algebra, topology, etc.

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EMAIL NUMBER 44

(Vacation message or similar non-response)

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EMAIL NUMBER 45

While I completely agree with the comments made here, defending the current name and purpose of DMS, the attack on research at NSF goes deeper and the more general attack should be addressed, This is both right and will prevent the AMS views from seeming parochial and self-serving. I refer you to the recent proposed changes to the NSF review process. As you may be aware, NSF proposals require a cover page detailing the "Intellectual Merit" and "Broader Impacts" of the proposed work.

In an effort purportedly to 'clarify' what is meant by broader impacts, new and more explicit language has been added. This language injects goals that range from creating more U.S. jobs to improving the relative position of the U.S. in education and research. The language could have been written in the 50's and smacks clearly of an America first approach to scientific research.

I do not know if this language has been inserted to forestall efforts in Congress to reduce budgets or if the leadership of NSF believes in this nonsense (treating research and education as zero sum games or as a horse race). But in either case, the attack on DMS is a piece of a larger attack on basic scientific research at NSF, and likely other agencies beyond. AMS needs to stand against this in the strongest possible way.

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EMAIL NUMBER 46

President,

I will study that change and I will send my opinion.

In a first look, it is a complicated matter, I'll try to think about it.

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EMAIL NUMBER 47

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I strongly oppose the name change. I fully endorse the drafted response, as well as Eric Friedlander's comments.

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EMAIL NUMBER 48

I am totally against the change.  
I do not see any good reason for changing the name.

"Statistics is only one of 10 programs supported by DMS. In 2010, of the 2978 proposals submitted to DMS core programs, 242 were submitted to the Statistics program. It is natural to ask why Statistics appears to be uniquely selected by DMS for special emphasis"

Statistics should be included rather with the inexact "sciences".

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EMAIL NUMBER 49

(Vacation message or similar non-response)

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EMAIL NUMBER 50

(Vacation message or similar non-response)

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EMAIL NUMBER 51

I am strongly opposed to the proposed name change of "Division of Mathematical Sciences."

Absolutely, positively, no way!

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EMAIL NUMBER 52

I agree that the name change is a bad thing, for the same reason with one small quibble. I don't see impact as a term that ought to be used by a mathematician. I do not see any "impact," a term best left to car accidents, particle physics and billiards. The proper expression is negatively affecting, not negatively impacting. Impact was added to the language as a replacement for affect and effect by economics with hopes of sounding scientific. They seem to have fooled a lot of people and blunted the language as well. Impact gives the impression of direct effect, which is seldom the case with any economics. Impact is NOT a synonym of affect the verb and effect the noun. A mathematician ought to know that.

I do see this as part of the move of a misinformed public to look for "applications." People confuse science and engineering, for example, and mathematics and science. They are separate activities with different goals. Sometimes mathematics and physics intertwine and sometimes physics and/or mathematics contribute to engineering, but the goal of mathematics is not physical science and the goal of science is not technology. The goal of engineering is technology. Engineering does not require physical science or mathematics, to be honest. Basic research is the term used to distinguish this to the lay public, but it is two-edged in its effect, since research is often taken negatively. Basic research is often useful in developing technology, but not intentionally.

I personally studied pure mathematics up through the PhD level and then went to work in industry, making a career fixing the mistakes of engineers who did not understand the mathematics to which they were subjected. I made most of that career in GPS and later in inertial navigation and was quite successful. I understand the difference between mathematics, physical science, and engineering. And I have an advanced degree in administration with a specialty in technology and technology assessment and know something of the history of technology. Unfortunately, trying to explain these activities to the general public, especially the US public which is terribly miseducated, is impossible. Good luck in fighting this, though I doubt you will have much luck.

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EMAIL NUMBER 53

(Vacation message or similar non-response)

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EMAIL NUMBER 54

I am strongly opposed to the name change.

EMAIL NUMBER 55

It doesn't make too much sense to me. There are many disciplines that use mathematics and they could equally well be included in the division. Why not the division of Mathematics and Physics or ...

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EMAIL NUMBER 56

I strongly oppose this proposal.

If statistics is a mathematical science (opinions differ), there is no need for a name change.

If statistics is not a mathematical science, then it would be unwise to group it with DMS, which then clearly has a different focus.

My own view is that there are certainly elements of statistics that classify as a mathematical science, and they are already well served by DMS. But a large part of what classifies as statistics is very definitely neither mathematical nor a science, and hence has no place within DMS.

I see no scientific gain coming from the proposed change, and a considerable amount of harm.

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EMAIL NUMBER 57

(Vacation message or similar non-response)

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EMAIL NUMBER 58

(Vacation message or similar non-response)

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EMAIL NUMBER 59

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I'm with you and Philippe Tondeur (I don't know the other two).

The field of Mathematics is constantly under attack by means of efforts to dilute it. I pretty much agree with your assessment as expressed in your email.

Statistics has, I believe, its own professional organization and its own journals. The statisticians can promote their profession in the NSF themselves, just as mathematicians have done.

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EMAIL NUMBER 60

(Vacation message or similar non-response)

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EMAIL NUMBER 61

(Vacation message or similar non-response)

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EMAIL NUMBER 62

(Vacation message or similar non-response)

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EMAIL NUMBER 63

(Vacation message or similar non-response)

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EMAIL NUMBER 64



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(Vacation message or similar non-response)

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EMAIL NUMBER 65

I agree with President Eric Friedlander's position regarding the proposed name change. The name should not be changed.

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EMAIL NUMBER 66

(Vacation message or similar non-response)

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EMAIL NUMBER 67

(Vacation message or similar non-response)

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EMAIL NUMBER 68

(Vacation message or similar non-response)

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EMAIL NUMBER 69

(Vacation message or similar non-response)

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EMAIL NUMBER 70

(Vacation message or similar non-response)

EMAIL NUMBER 71

(Vacation message or similar non-response)

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EMAIL NUMBER 72

Yes, thank you very much. I definitely oppose this name change. For one thing, "Mathematical and Statistical Sciences" is bad English and very confusing. Imagine suggesting a name change like: "Association of Mathematical and Metamathematical Sciences", or "Algebraic, Geometric, Analytic, Foundation and Statistical Sciences". You see what I mean!

Mathematics has many branches, but it is one science. Turning singulars into plurals is sometimes used to increase(?) emphasis, but the rhetorical device usually fails. The techniques of Statistics are mathematical techniques: counting, dividing, integrating, differentiating, etc.

Bureaucracies are like insomniacs; they are always changing their posture, lying first on this side, then that. Name-changing is the most commonly used way of "making changes" without changing anything.

What's wrong with "American Mathematical Society". Keep it as it is.

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EMAIL NUMBER 73

Subject: as an Electrical Engineer I oppose

Hi,

If I survey the use of mathematics in modern technology, I think it would be a crime to not have the DMS focused on a broad palette of basic research. (On the other hand I have not been able to get a research award from the DMS, only conference grants, but I attribute that to limited resources in this "post-cold war" period).

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EMAIL NUMBER 74

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Subject: Keep It the Way It is!

As an independent student (age 20) long ago I learned from A.N. Whitehead the importance of names and symbolic representations.

Statistics, which I first got into in engineering reliability, has several redundant name choices for failure rate, mathematically meaning the same thing in different contexts, introducing confusion by slaving terms to applications. Then there is the issue of probability itself which is the theoretical backbone of mathematical statistics.

Statisticians basically are applied mathematicians of a special kind still with several unresolved issues. Besides, we have our own problems to resolve, possibly complicated by mixing pure math with statistics (not to mention computer science). Clearly G.H. Hardy would have separated them.

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EMAIL NUMBER 75

I am against the name change to include statistics.

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EMAIL NUMBER 76

This name change is the best news on Mathematics I've heard in a while.

Personally the Mathematics community has done nothing for me, and has given me no help in either academics or NSF funding since I got my PhD. As a result I have done everything from software development to installing kitchens and baths, which I am doing currently.

No food implies no research. With Statistics or any application a body has a fighting chance to survive outside the gated community of Mathworld.

Y'all should have thought about cohesion in the Mathematics community long ago. At least in the good old USA. If there's one thing my children are not going to do it is pure Mathematics. And I discourage anyone who talks about pure Mathematics or Mathematical research.

Mathematics should be for anyone who is willing, not some cliché deciding who lives or dies.

A name change would be welcome, and may awaken some from chasing a rainbow.

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EMAIL NUMBER 77

(Vacation message or similar non-response)

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EMAIL NUMBER 78

(Vacation message or similar non-response)

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EMAIL NUMBER 79

(Vacation message or similar non-response)

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EMAIL NUMBER 80

(Vacation message or similar non-response)

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EMAIL NUMBER 81

I strongly oppose the proposal to change the name of the Division of Mathematical Sciences to the Division of Mathematical Sciences and Statistics. This seems like a transparent grab for money and power by a clique of statisticians intent on siphoning limited government funding away from pure mathematical research. They deserve the wrath and scorn of the entire mathematical community.

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EMAIL NUMBER 82

(Vacation message or similar non-response)

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EMAIL NUMBER 83

(Vacation message or similar non-response)

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EMAIL NUMBER 84

I also oppose the proposed name change, agreeing in particular to reason #1 and #4 mentioned.

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EMAIL NUMBER 85

(Vacation message or similar non-response)

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EMAIL NUMBER 86

As a mathematician and a former Program Officer for Analysis at the DMS (1999-2001, 2004-2006) I find the proposal outrageous and categorically oppose the proposed name change. The name DMS already adequately embraces the broadest spectrum of mathematical sciences.

The proposed change will over emphasize statistics vs. fundamental mathematics and will only result in shift of funds from basic research to more goal driven research. I see no benefits and no increase in funding coming if this change occurs, a really badly timed and unjustified idea at times when we should be focusing on promoting mathematics as a whole rather than diminishing its role as the undeniable foundation for all natural sciences.

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EMAIL NUMBER 87

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You write in the name of encouraging discussion while providing no opportunity to do so. Perhaps by "discussion" you mean that you will tell us your opinions, and give us an opportunity to send our thoughts to member\_input? I should probably be honored to have "Fellows the AMS" calibre people telling me their thoughts so that I might better be able to explain them to the less qualified among us.

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EMAIL NUMBER 88

I oppose the name change. Mathematics and Statistics are different sciences similarly than Mathematics and Physics or Mathematics and Computer Science differ. While there is substantial overlap like Mathematical Statistics or Mathematical Physics or Scientific computing it is important that to keep the names separated because Mathematical Statistics is only a small part of Mathematics and the main core of Statistics is not Mathematics. One could with the same reasons try to rename it Mathematical and Computational Sciences.

- Another reason not yet mentioned is simplicity. Why a complicated name if a simple name works too.

- Furthermore, the money for a name change could be substantial too since all documents and websites need to be redone. Use these resources better. Especially in times of tight budgets.

- Last and not least, DMSS is really an ugly acronym. Sounds like the hiss of a snake.

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EMAIL NUMBER 89

(Vacation message or similar non-response)

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EMAIL NUMBER 90

Please add my name to any list of mathematicians opposing the name change proposed at NSF. Surely the change is a hint at where they want to direct the money towards

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EMAIL NUMBER 91

(Vacation message or similar non-response)

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EMAIL NUMBER 92

At first thought, a name change sounds good. But then I read the letter and President Friedlander's comments. I strongly agree with President Friedlander's comments. And I am a Professor Emeritus of a Department of Mathematics and Statistics. And I have held a number of NSF grants over the years.

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EMAIL NUMBER 93

Subject: Oppose NSF name change of DMS

I do not support the name change of DMS being considered by NSF for fear of the potential divide in the math community and the other obvious reasons.

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EMAIL NUMBER 94

I have been out of pure mathematics and into the non-mathematical parts of information technology for 15 years, including exposure to the IT side of "big data." I respect both disciplines, and believe that the interests of both are best served by keeping separate what is separate. I have also been serving government customers and industry for most of this time.

Federal bureaucrats are powerfully motivated to grow their organizations, by "mission creep" if necessary, just business executives are powerfully motivated to expand their businesses. It is not necessarily in anyone else's interest that they should do so. Dr. Pantula argues that adding non-mathematical aspects of "big data" research to the DMS would result in more funding for mathematical research that is not related to big data. I would expect the reverse. To make his case, he needs to provide

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much more about the "why" and "how," with plenty of support by relevant examples.

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EMAIL NUMBER 95

I strongly oppose this change. My favorite argument is the statistical (!) one. Why choose statistics as part of the name if less than 10% of submissions are in statistics?

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EMAIL NUMBER 96

I strongly oppose the name change. Let DMS stay as it is. Otherwise it will lose its focus to fund basic math research.

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EMAIL NUMBER 97

I agree this new name is nonsense. The arguments 1.)-5.) are true, especially 4.) and 5.). Here are more:

6.) Universities have difficulties to keep Mathematics and Statistics together in the same department. If at a national level of the NSF the same division occurs, this will become even more problematic and enhance tensions.

7.) The letter by Pantula isn't convincing at all. He acknowledges at the beginning that this is his personal initiative as a statistician.

8.) The Physics department at the NSF is called Physics (PHY). It is certainly even more diverse than DMS! It includes both Experimental and Theoretical physics.

9.) Contrary to Pantula letter, the role of the NSF is to EDUCATE the polymakers. e.g. if policymakers do understand the importance of big data and statistics, explain that statistics is one of the many areas in mathematics, that it is tied with probability theory, integrals, analysis. That fundamental research advances all these fields together. That is why it is so important to fund all 10 disciplinary research programs

10.) Statistics cannot stand alone without the interaction to the other disciplines.



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11.) Physics advocates the strong and surprising connection between Statistical Mechanics and Quantum Field Theory. We should seek similar statements in mathematics to display our connectivity.

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EMAIL NUMBER 98

I am opposed to changing the name. Mathematical statistics is part of mathematics, as are probability, optimization, and many other important subject areas. I think it would be highly inappropriate to add statistics to the name of the Division of Mathematical Sciences at NSF.

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EMAIL NUMBER 99

My view is in the middle. It is a good point that the current name, Mathematical Sciences, is meant to be an inclusive one. But the point that the name change would make available to Statistics funds available to mathematicians seems somewhat contrary to the inclusive spirit.

In spite of the preconception of this letter, mathematicians as well as other scientists are able to make intellectual contributions to other disciplines of a "statistical", as opposed to "mathematical" nature. Indeed, once one thinks about contributing to an applied area, as some mathematicians do, it can be an important idea to think of the applied area itself as the center of the efforts, rather than any mathematical aspect, and this can mean bringing in or even focusing on "non-mathematical" statistical aspects.

At present, I wouldn't personally dare to mention any such "non-mathematical" applied or statistical interests in an NSF proposal, because they would be viewed quite negatively by any peer review panel. What I would suggest, instead of a name change, is a policy change, that is more accommodating to broader scientific interests, including empirical studies and thinking about empirical studies, and make them a positive aspect of any mathematician's profile, rather than a detraction. This step would not "cost" anything, and would be consistent with the supposed inclusiveness of the present title Mathematical Sciences.

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EMAIL NUMBER 100

I completely agree with the comments opposing the suggested name change that were forwarded by the president of the AMS, Eric M. Friedlander.

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There is no need for me to repeat the reasons that were given in that message, but please allow me to add the following.

Beginning with the activities of the NSF while Richard Nixon was President, I have witnessed a pronounced and continuing shift in NSF's support of mathematical research, from basic research to short-term research. Overall, I believe that the effects have not been beneficial for American mathematics, as witnessed, for instance, by the increasing attention given to basic research conducted by individuals whose formative years were not spent in this country.

As the reader may be naturally concerned about my credentials, I will close with the following information about my background. Although I have not received support from a funding agency in Washington for many years, I have often received support from NATO and from other international agencies. Moreover, I am a very broad mathematician, having published in more than a dozen of the areas recognized by the Mathematical Reviews of the AMS; and very prolific, having published approximately 270 papers reviewed by Mathematical Reviews, approximately 100 teaching notes not reviewed by Mathematical Reviews, and eight books, including research monographs and textbooks at both the graduate and the undergraduate levels.

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EMAIL NUMBER 101

I agree wholeheartedly with the cited arguments opposing the name change.

I too believe that a name change is more than words, it would be a statement signifying fragmentation of mathematical sciences, a sure sign of erosion of the unity and solidarity of extreme importance for the survival of all the AMS has supported in the past and continues to hold dear. These are uncertain times, all the more reason to hold fast to those principles which are tried and true.

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EMAIL NUMBER 102

(Vacation message or similar non-response)

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EMAIL NUMBER 103

I also oppose the name change. The two part name seems to suggest that the two are parts are equal in size and impact.

EMAIL NUMBER 104

I strongly disagree with the name change to the division, for the reasons mentioned by the responder.

Namely, statistics is extraordinarily well-funded as it is, and we lose our focus if we add this name to our division.

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EMAIL NUMBER 105

I also oppose the proposed name change.

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EMAIL NUMBER 106

I would oppose the name change for the reasons given in Prof. Friedlander's message.

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EMAIL NUMBER 108

I am with the majority in the AMS and I oppose the proposed name change. This episode has confirmed my long-held belief that a deeper understanding between statistics and (pure) mathematics is direly needed, and I urge everyone participating in this debate to attend the JMM lectures by Efron and Sullivant, listed first at [http://jointmathematicsm meetings.org/meetings/national/jmm2012/2138\\_speakers](http://jointmathematicsm meetings.org/meetings/national/jmm2012/2138_speakers)

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EMAIL NUMBER 109

My opinion - I am against the new name.

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EMAIL NUMBER 110

I am sure I will be just one of the sea of voices on this issue, but I wish to add my opinion that this name change is a bad idea.

Statistics is an entirely separate science from mathematics. It is deserving of its own division. Piling it into the mathematics division will dilute both fields' stakes.

In politics, perception is everything. If politicians perceive that statistics is part of mathematics, they will treat them as one and the same thing. They will be funded together, enjoy less prominence and attention together, and have less of a voice than if they appear as the separate entities that they are.

The situation is analogous to lumping astronomy with physics, or medicine with biology. When the government sees a necessity to compress rather than expand the range of science out there, it is truly a sad day for all science in our country.

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EMAIL NUMBER 111

Working in an environment heavily dominated by engineering, much of the work I am exposed to on a daily basis is obviously data driven. Nevertheless, I believe NSF should not lose sight of the fact that despite the extremely important impact big data analysis has on the advancement of science and technology, underlying mathematical theory lays the foundation for all data driven experiments and processes. As such, I strongly oppose the proposed name change. The five reasons given below capture the entirety of my opposition, but I think numbers one and three are most telling. The core mission of NSF is to fund basic research, and the current name of the division is inclusive for all areas of mathematics - statistics included.

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EMAIL NUMBER 112

I support Mr. Friedlander's five points for opposing the proposed name change.

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EMAIL NUMBER 113

I write to strongly oppose the suggested NSF name change from the Division of Mathematics Sciences to the "Division of Mathematical and Statistical Sciences". The DMS supports critical basic funding in the mathematical sciences (of which statistics is a part) while more applied funding in statistics is available through a variety of other programs including funding from industry and the US defense department. To separate the DMS (intentionally or unintentionally) into two parts -- Math & Statistics -- will have a number of consequences: It will soften the critical emphasis on basic research, create division between mathematicians and statisticians over both funding and academic standing and will lead to reduced funding in research into fundamental knowledge in mathematics. At this time, when our culture has an increasing emphasis on short-term solutions and short term applications, we need a branch of funding that continues to emphasize basic research requiring a long-term process to scientific discovery.

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EMAIL NUMBER 114

I too, am strongly against this name change. As you mentioned in your e-mail, the current name was crafted to be inclusive (which is why it isn't called the Division of Mathematics). I also agree with your sentiment that with 242 out of the 2978 proposals submitted to DMS in 2010, it is natural to ask why Statistics should be singled out in the name of the division. I disagree with Director Pantula that the name change would have the effect that he says it would have and there is nothing in his letter that supports his claims. It seems that the real objective of the name change is to raise the level of recognition for his field. I have great respect for Director Pantula and am therefore extremely disappointed that he is using his position to advance a partisan issue rather than focusing on advancing the whole discipline over which he has stewardship.

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EMAIL NUMBER 115

I completely disagree with the idea of changing the name. First of all, it's suggesting that statistics is not math, which is ridiculous. Secondly, if that change takes place, we'll have next year a proposal to rename to "math, stats, and applied math", and in 10 years the name will be a list of 15 mathematical areas. Thirdly, changes in names, policies, and similar documents often aim at side effects that weren't faithfully disclosed. Change ordered from the top usually means deterioration.

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EMAIL NUMBER 116

I support keeping the name "Division of Mathematical Sciences" as inclusive enough, and I support items 1)--5) below.

Of course I also support increasing funding for the DMS.

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EMAIL NUMBER 117

It seems to me that since statistics is a branch of mathematics, inserting the word statistics along with mathematics in the name would be redundant and cumbersome.

It might also cause mathematicians in other branches to want the names of their branches inserted also.

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EMAIL NUMBER 118

I strongly oppose the proposed name change for DMS for the reasons Eric Friedlander so cogently presents.

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EMAIL NUMBER 119

I very strongly support name change. President Friedlander's response (as attachment as well as here) only indicates his ignorance, insecurity and is a vivid example of how out of touch the is with the current realities on the ground. Leaving his prejudices and biases aside, he should do more contemplation and research on this issue and if he is sincere in doing so, the answer will be obvious to him. Pantula is absolutely right.

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EMAIL NUMBER 120

I disagree with the proposed changes. Statistics is a part of Mathematical Sciences, the same as Algebra, Geometry, and so on. All

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mathematical sciences play very important role in applications. I do not understand why we should separate Statistics from other branches and emphasizes it. This is a political trick.

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EMAIL NUMBER 121

I am against the name change, and I agree with the points raised in your email and in the Member Response.

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EMAIL NUMBER 122

(Vacation message or similar non-response)

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EMAIL NUMBER 123

Subject: against!

The "massive data" challenge CAN and SHOULD be addressed using fundamental mathematics.

It is the duty of the DMS program manager to defend this point of view and secure "massive data" funding for mathematical research within DMS.

If the current DMS program manager is unable to successfully defend this position, then perhaps we need a new program manager.

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EMAIL NUMBER 124

I oppose the name change for the reasons spelled out by President Friedlander. DMS should continue to support basic mathematics research. For that no name change is needed; in fact, it could prove counterproductive.

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EMAIL NUMBER 125

I am against the name change.

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EMAIL NUMBER 126

I write in support of the AMS' opposition to the proposed renaming of the NSF DMS to the Division of Mathematical and Statistical Sciences.

The current name already includes all of the mathematical elements of statistics.

If the current name were the Division of Mathematics, then I could possibly understand the desire to modify the name. In this scenario, I would oppose changing the name to Division of Mathematics and Statistics, preferring Division of Mathematical Sciences. The current name is already inclusive.

I see no benefit to the proposed name change.

Thank you for alerting the AMS membership of this proposal, and for soliciting our opinions on this matter. I do hope that you will continue to keep us informed of the status of this proposal.

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EMAIL NUMBER 127

I agree that a name change is much more important than "just a name" and I find the sample response to the proposal to be well argued.

I would however like to learn more about what is behind the proposal and the larger picture within the NSF and other funding agencies.

I also think that we should suggest other directions that Director Pantula could pursue to better integrate mathematical and statistical research in the NSF. For example, the PHY division and DMS cooperate to run a panel on Mathematical Physics which meets to evaluate proposals of joint interest to mathematicians and physicists. Perhaps the DMS (if it does not already) should have a similar panel which meets to evaluate proposals of joint interest to mathematicians, statisticians and experts in other disciplines. I am sure other such suggestions can be made which would increase DMS's competitiveness in attracting new money for "Big Data" and other initiatives.

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EMAIL NUMBER 128

I will be very brief, simply expressing the `punch line' of my personal reflections.

- (1) The President has formulated the rebuttal very skillfully.
  - (2) It is true that (in my opinion) the AMS has not been sufficiently inclusive regarding mathematics interfacing other disciplines.
  - (3) This particular recommendation is purely politically motivated, but this detail should not mask more generic underlying realities.
  - (4) Oppose this name change, but give some thought to (2).
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EMAIL NUMBER 129

As a mathematician who teaches and works in Statistics in a Department of Mathematics, I want to provide my one cent strong objection to the name change. Although I believe the "unnecessary and unfortunate divide in the mathematical sciences community" already exists, the propose change will make such a divisive concept official.

The five reasons you listed in your email are right on target, and I strongly support the AMS bringing these points to the front of the discussion.

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EMAIL NUMBER 130

Changing the name from DMS to DMSS will dilute the funding for mathematics and favor application based research of statistics than the core concept of mathematics.

Therefore, I strongly oppose the name change.

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EMAIL NUMBER 131

Subject: opposite to the name change

EMAIL NUMBER 132

I strongly oppose the proposed name change from Division of Mathematical Sciences to Division of Mathematical and Statistical Sciences. Like other similar changes at CISE, this is almost certain to be counterproductive and divisive. The term "mathematical sciences" is already inclusive of statistics, and the proposal will likely presage a shift away from support of basic research.

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EMAIL NUMBER 133

Since statistics (even bonehead statistics!) is a part of mathematics, I urge opposition to this move. Unless we want to then add, say, algebra, mathematical analysis, applied mathematics, topology, etc., as well.

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EMAIL NUMBER 134

I do not think it is necessary to change the name. "Mathematical Sciences" should not be narrowly understood as just "math"; it covers all branches related to math such as applied math, mathematical physics, math biology, of course, statistics...

Math is the foundation of statistics.

Changing the name would have great impact on many programs. For example, should a graduate program - "Mathematical Sciences" be renamed "Mathematical and Statistical Sciences"? Should the "Department of Mathematical Sciences" at Florida Atlantic University which has statisticians in the department be renamed "Department of Mathematical and Statistical Sciences"?

In summary, as an AMS member, I'd like to stay with what we have: Division of Mathematical Sciences (DMS).

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EMAIL NUMBER 135

Applied Statistics of large data sets belongs to computer science, not mathematics. This is a very large expensive area of computational science and would inevitably bend to outside pressure and be funded in preference to mathematical sciences. This is an unwise move.

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EMAIL NUMBER 136

Just a brief comment, as I agree with Friedlander's comments: I am completely opposed to this attempt to unfairly highlight and single out statistics. It denotes lack of understanding of the peculiar role of statistics, which is extremely tiny within mathematics, and yet huge in the applied world. Already statistics commands higher salaries and grants at many schools, and it doesn't need to gobble up more resources that should rather belong to basic research.

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EMAIL NUMBER 137

I am a former member of MPSAC and a member of the SIAM Board of Trustees as well as a Professor of Mathematics at the Courant Institute. I strongly oppose the proposed name change from (DMS to DMSS) for the following reasons:

(a) Statistics is indeed interdisciplinary. So are other parts of DMS's activity (including almost everything it does in Applied Mathematics, and much of what it does in Scientific Computing). If the current set of programs and structures do not adequately fund Statistics as an area, this should be addressed by substantive changes. The proposed name change does nothing of the sort. If the name change is intended to presage a shift of funding or emphasis, then the discussion should be about \*that\*, rather than about an apparently-symbolic change such as the name of the division. If the goal is to attract new funding through new initiatives involving Statistics, then the focus should be on formulating those initiatives not changing the name of DMS. If the problem is that Statistics does not currently have a single home at NSF, I would point out that it is far from being alone in this respect (for example, Scientific Computing and Theoretical Computer Science both lie partly in DMS and partly in CISE, and there is plenty of Scientific Computing in other parts of NSF as well).

(b) The director of DMS should represent the interests of the entire mathematical sciences community. It is natural for him to use his expertise to push for specific initiatives. But a structural change that mainly serves his particular segment of the community is rather different. Such a change seems appropriate only if it has reasonably broad approval from the community, which this one does not.

EMAIL NUMBER 138

I vehemently oppose the name change from DMS to Division of Mathematical and Statistical sciences.

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EMAIL NUMBER 139

I do not have an eloquent condemnation of the proposed name change (that NSF's Division of Mathematical Sciences (DMS) be renamed the Division of Mathematical and Statistical Sciences), but count me as one among those who are opposed.

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EMAIL NUMBER 140

Subject: I do \*not\* oppose the name change

The main question is the following: is statistics a subset of mathematics, or so unique as to claim a joint existence? Many departments have already answered this question by joining the names together.

I \*strongly disagree\* with the first point written in the letter by Friedlander:

"This name change suggests a move within DMS to relax its focus on basic research."

There is no such suggestion in the name. I find this response to be based on emotion rather than reason.

Regarding the second claim from the "member input" letter:

"The question of whether the DMS serves two major disciplines is far from clear to me."

Let me help you think about this divide. Please consider the following question and answer it for yourself.

If your Mathematics Department is hiring, and has one open position, and that position is open to "any area of mathematics", are you seriously going to consider the statistics candidates, on equal grounds as the analysis and algebra and dynamical systems candidates??

From a personal story:

I was on the job market broadly last year. The one personal point I can make is this: as someone whose research is algebraic statistics, it is extremely hard to get a job in a Mathematics Department (even though

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everyone knows that I am a mathematician by training!!). Then again, it was not trivial to get one in a Statistics Department as well. In most programs in this country, statistics training is not a part of the mathematics training in the same way that "core mathematics" is (algebra, analysis, etc.)

That clearly says something about the "divide" vs "inclusion".

My work is interdisciplinary and involves an area of pure mathematics and theoretical statistics. I have a very hard time understanding the opposition to the name change.

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EMAIL NUMBER 141

The name Mathematical Sciences should cover it.  
I do not support name change

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EMAIL NUMBER 142

I am replying to the message of Prof. Eric Friedlander, President of the AMS, concerning a proposed name change for the DMS in the NSF. I strongly concord with the five reasons stated in his message to oppose the proposed name change for the DMS.

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EMAIL NUMBER 143

I think that the name change is a GOOD idea, even though the justification in terms of ``big data'' may be wrong-headed. Mathematicians will never learn: we need to ``connect'' with other subjects, not retreat whenever our narrowly perceived interest is threatened. The name change will put us into a wider community and in touch with applications.

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EMAIL NUMBER 144

I agree with the opinion in the letter and am against the name change of DMS.

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EMAIL NUMBER 145

(Vacation message or similar non-response)

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EMAIL NUMBER 146

I strongly disagree with the proposed name change.  
I completely support the arguments in the letter by President, Eric Friedlander.  
I am also troubled with the statement in the letter by Director Sastry Pantula that "the proposed name change would make the Division better able to attract new resources...". Nowhere in the letter it is explained how such resources will be attracted and I suspect that getting them will result in a serious commitment from NSF towards mission-oriented research and thus in a serious change in the policy away from fundamental research.

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EMAIL NUMBER 147

I strongly support the proposed renaming of DMS at NSF to the Division of Mathematical and Statistical Sciences. I believe this renaming properly reflects the status of Statistical Science as a separate discipline.

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EMAIL NUMBER 148

I am against the proposed name change. Please pass my vote to the concerned party

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EMAIL NUMBER 149

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I don't object to the name change and in fact I suspect that Pantula is right, namely, that the change will help bring more resources for basic research to mathematics as a whole.

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EMAIL NUMBER 150

I support the opposition to the NSF name change and I support the arguments given by Eric Friedlander in today's email to the AMS members

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EMAIL NUMBER 151

I am writing to express my total disagreement with a possible renaming of the DMS at NSF. The program is already inclusive and geared toward basic research in mathematics and statistics. The change is unnecessary and would potentially decrease the funding for basic research, which is the very purpose of DMS.

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EMAIL NUMBER 152

Statistics should have its own directorate. Years ago, following the untimely death of Sam Willks, Kiefer, Wolfowitz, Birnbaum and others tried to recreate Statistics as a branch of analysis. A ghastly idea which did Statistics no good service. At Rice, we formed a Department of Statistics 25 years ago, because it was clear that the mathematicians were piggy-backing on the popularity of Statistics. Statistics as an applied discipline concerned with real data, is much more akin to engineering or biology than to mathematics. Since we formed a separate Department of Statistics, our faculty has grown substantially. We have grown from three full time faculty to 15 with an additional 40 adjuncts and joint appointments.

Mathematics, as was pointed out by John Tukey, is Platonic and idealist rather than Aristotelian and realist, and is most properly treated as a branch of philosophy. Tukey, who held a doctorate in mathematics from Princeton, denied that mathematics was a science.

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EMAIL NUMBER 153

I strongly oppose renaming the Division of Mathematical Sciences to include a separate mention of statistics. No such change is necessary, and it would strongly harm the current process of funding research in pure mathematics, which includes the mathematical aspects of statistics.

At the University of Illinois, sometime before Philippe Tondeur arrived to become a member of our Mathematics Department, and before he became Director of the Division of Mathematical Sciences within in NSF, there was a change in the departments within the College of Liberal Arts and Sciences, which included the Mathematics Department of the University of Illinois. The Mathematics Department included specialists in probability (such as Doob and Burkholder), as well as specialists in Statistics (also including Burkholder). Since there were many students of applied statistics, it was agreed by everyone in the Mathematics Department that a separate Department of Statistics be created, partly to provide a home for those professors and students who were primarily interested in the many applications of statistics, partly because statisticians were (and are) in greater demand in the commercial market than "pure" mathematicians, and partly to let the rest of the Department of Mathematics concern itself with the teaching and research in mathematics (including the purely mathematical aspects of statistics). This has worked very well for everyone concerned, and the distinction between "pure" and "applied" statistics has caused no problems that I know about.

I have heard no mention of recombining the two departments into a single "Department of Mathematics and Statistics" at the University of Illinois, presumably because it would make no sense to anyone, teachers or students. Possibly Professor Tondeur has more to say about this, although I believe that the change mentioned in the preceding paragraph took place before he arrived at the University of Illinois, and certainly before he became Chair of the Mathematics Department or Director of the Division of Mathematical Sciences in the NSF.

For a similar reason I believe that the renaming of the Division of Mathematical Sciences within the NSF would NOT make any sense. The proposed the new name would include applications of statistics as well as research in statistics as a part of mathematics, at the expense of mathematicians who are primarily interested in the development of mathematics per se, including probability and statistics.

I strongly urge the National Science Foundation to avoid a separation of any specialty in the study of mathematics per se, by identifying any specialty in the current name: Division of Mathematical Sciences.



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I do not think it is a good idea to change the name of DMS to something that includes also statistics.

Mathematicians have been hired by mathematics and non-mathematics departments in many universities and they collaborate actively and very successfully in many applied areas mention in the letter of Dr. Pantula. This is a welcome development. But fundamental (and applied) mathematics needs nurturing, care, support, and funding beyond immediate applications. In my opinion, this is what DMS stands for and it should NOT be changed. I definitely oppose the change of the name.

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EMAIL NUMBER 155

Following the lead of President Friedlander, I am strongly opposed to the name change, for the cited reasons. Statistics is a "useful subject", but lacks the level of depth and permanence that blesses our profession of mathematics.

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EMAIL NUMBER 156

I write in opposition to the NSF proposed name change from the Division of Mathematical Sciences (DMS) to another title including Statistical Sciences.

While I certainly think that every educated person should know some statistics, I do not think DMS should be diluted to include statistical sciences, which would open the door to a great many projects involving shallow mathematics, and take away funds devoted to significant mathematical research.

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EMAIL NUMBER 157

I believe that the points made by AMS President Eric M. Friedlander go straight to the reason behind the proposed name change. The change, if adopted, could be divisive and could do more harm than good. It is a step backwards.

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EMAIL NUMBER 158

I oppose the name change of the DMS to the DMSS.

Statistics (in the research aspect) is one of mathematical areas. Such a name change would create an absurd and confusing understanding to the general public, and result in two unavoidable disadvantages.

(1) It creates an artificial difference between mathematical and statistical researches, while they are essentially the same in terms of research in mathematics.

(2) It misleads the general public in terms of differences between the research in statistics and the applications of statistical methods. Unless the NSF wants to include trivial-mathematical aspects of statistical applications in the DMS, such a name change would encourage many mediocre research projects, and produce American-style jokes to the whole world.

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EMAIL NUMBER 159

I am strongly opposed to the name change, and what it implies, proposed by the NFS. Statistics is an important discipline; it has a very strong mathematical component, but an equally strong observational aspect. Mathematical sciences is already a very broad enterprise; I am sure it supports mathematics relevant to statistics. The proposed unification would dilute support of both mathematics and statistics.

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EMAIL NUMBER 160

In addition to the very lucid response from an anonymous leader (with which I entirely agree):

Do "the very clearly established trends towards scientific discovery increasingly dependent on the collection and interpretation of (massive) data and quantitative information" really manifest themselves in the practice of pure mathematics? I do not think so. If these trends start to define what "scientific discovery" is, then all people doing basic research in mathematics should be concerned about ultimately being labeled "non-scientific". The name change of the division may result in marginalizing pure mathematics.

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EMAIL NUMBER 161

I wanted to send a quick note to state my opposition to the suggested name change. I do not have any more cogent arguments to make than those that have already been made, but among those listed the three that resonate most strongly with me are:

1. DMS funds basic research. Statisticians who are not doing basic mathematical research can always apply for funding from NIH and other such funding agencies, where most of the rest of us do not even have an applicable call for proposals. This is intrinsic to the nature of the beast that is statistics, it is not purely mathematical, but whatever is not mathematical is not pure science, either, and funding requests for such investigations should be diverted from the already too small pool of funding the NSF/DMS has. (Furthermore statisticians could apply for funding through CISE if their projects fit within the scope; this is not possible for most researchers who apply to the remaining eight programs - I am excluding the Computational Math category...)

2. Why focus on one out of ten programs within the DMS? Who is to say that computational mathematics deserves less of a focus? If we are to focus on one of the programs, I would in fact venture to suggest that computational math, not statistics, is the more vital component to fund, but of course (at least so far) nobody can claim that computational math is not math...

3. Quoting from below: "The Mathematical Sciences should work together, emphasizing commonality and presenting the best case for the importance of the Mathematical Sciences." Splittings among us will only lead to a further weakened and fractured community.

This is quite a strange (and probably mainly political) move, and pretty worrisome. I hope that the voices of the members of the AMS will be heard. (I expect that they will also recruit statements from SIAM and ASA and those will of course predominantly side with the proposal. Perhaps to balance things, we should also ask the MAA membership? Of course I do not know where they would align themselves with.)

Thanks for standing up for us, those who depend on the funding opportunities from the DMS, and those who have no chance of ever receiving such support but who still believe in the wholeness of mathematics and are worried about the tiring trend of any collection of mathematical scientists who find themselves more marketable when they distance themselves from the rest of the mathematical community.

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EMAIL NUMBER 162

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The arguments that statistics is a buzzword that will attract more funding is almost certainly true. "Rising tides float all ships" would argue for adding statistics to the DMS name.

On the other hand, the argument that statistics is largely distinct from core mathematics is also true. In my department, we have both mathematics and statistics, and though the statisticians do know a lot of math, their focus is quite distinct from the focus of the mathematicians in our department. Over the last two decades, the statisticians in our department have become more and more independent (analogous to the way the computing faculty in our department in the 1970s and 1980s grew separate until they finally became a separate department in the 1990s).

Statistics deserves a separate organizational home in the NSF, one that would work closely with the computing, math, economics, etc. programs, but one that would allow it to realize fully its unique place in the sciences. Given the exemplary emphasis on interdisciplinary programs within the NSF, creating a new statistics program will attract new funds that will increase funding for all.

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EMAIL NUMBER 163

I also strongly oppose the NSF DMS name change, for all the excellent reasons you mention in your letter, in particular the third one. This name change is not sustainable.

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EMAIL NUMBER 164

I am a member of AMS. I use statistics in my work and statistical progress is important to me. But I see no basis for a change of name of the Division of Mathematical Sciences to the Division of Mathematical and Statistical Sciences.

Perhaps the proposed name change would be an improvement, but the letter of Dr. Pantula does not present a good argument for it.

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EMAIL NUMBER 165

I agree strongly with the position articulated in "MEMBER\_RESPONSE.PDF", circulated by Eric Friedlander in email of

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10/11/11. In particular, "...I see the name change as an attempt to change DMS from a divisions that supports mathematical research (in statistics and other areas) to a division that has two quite separate directions, one being mathematics, the other being statistics as broadly construed, which includes non-mathematical parts of statistics. ... the discussion and possible implementation of such a policy change should precede any name change."

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EMAIL NUMBER 166

I have no specific comments to add, beyond being concerned at the suggested implications of the proposed name-change.

I am in favour of keeping things the way they are.

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EMAIL NUMBER 167

I believe we have bigger fish to fry than changing the name of the Division of Mathematical Sciences. Should we not change the name of the National Academy of Sciences to "National Academy of Sciences and Mathematics"?

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EMAIL NUMBER 168

I am opposed to the proposed name change from Division of Mathematical Sciences to Division of Mathematical and Statistical Sciences.

In the vocabulary of most people, statistics is \*one\* of the "mathematical sciences". It is not a separate-from-mathematics science, certainly not worthy of special emphasis over, say, "engineering sciences". The proposed name change makes no sense.

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EMAIL NUMBER 169

Statistics is a strict subset of mathematics.  
The proposed name change implies a change in priority that detracts from the plurality of our mission to advance mathematics.

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Please keep the same name and mission.

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EMAIL NUMBER 170

Thanks for letting me express my personal opinion on this issue. I see various abuses of statistics (e.g., false assumptions of linearity, false assumptions of statistical independence, quarantining everyone to death who allegedly has a disease instead of looking for cures, accounting for only some of the causes of a correlation, inadequate sample size, leaving out data that does not conform, collusion, conflict of interest, etc.).

I think having mathematicians to point out these abuses will save lives, save money, balance abuses, and provide other advantages. I therefore oppose the name change which will probably take money from math research and give it to those who may or may not engage in the abuse of statistics.

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EMAIL NUMBER 171

I could not agree more with the unnamed member of the AMS leadership's response to the proposed name change!

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EMAIL NUMBER 172

If we had an NSF division of "Mathematics," then statisticians would have reason to suggest "statistics" be added in, and operational researchers could ask for their name to be added as well. However, "Mathematical Sciences" was adopted as the name of the division to create a big tent, allowing all mathematical sciences to find a home there. In the same spirit, we have The Conference Board of the Mathematical Sciences.

Given the intended inclusive nature of the title "Mathematical Sciences," it is gratuitous to add "Statistical" - or perhaps some statisticians wish to claim that statistics is not a mathematical science? Statistics is not mathematics, but it is a mathematical science, as is operations research.

In the 1980s I was executive officer for CBMS, and the inclusive nature of that organization was something kept clearly in mind. I think the idea behind "Mathematical Sciences" has served us well. Especially

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mathematicians, who tend to think of mathematics itself as the be-all and end-all.

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EMAIL NUMBER 173

I have nothing to add to the cogent opposition to the name change. So just count me as another NO vote.

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EMAIL NUMBER 174

At this time and, more so in the future, the obvious need for a strong program to support mathematics as a science and not as a means of financial benefit is paramount...other benefits from pure mathematical study, exercise, and research will come much later...political and sociological goals belong elsewhere, and are those with no interest and virtually no knowledge of the scientific field in question...the I-Pad, etc. Are not the result of direct research, but rather the use of prior seemingly unrelated knowledge...anything which would lead to dilution of the field is to be avoided in our society, which is nowadays focused on immediate results...who thought up this amalgamation , and more importantly- why?

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EMAIL NUMBER 175

As a member of the AMS, I am also against the change of the name based on the same concerns provided by Dr. Friedlander.

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EMAIL NUMBER 176

I believe the proposed name change for DMS is very unfortunate. It portends a reduction in funding to mathematics research, with resources shifted to applied statistics. There are already many sources of funding for the latter, while resources for mathematics research are limited.

Deemphasizing mathematics has the potential to reduce the quality and intensity of math research in the US, which will have negative effects on science in general.

EMAIL NUMBER 177

Regarding the National Science Foundation (NSF) proposed name change of the "Division of Mathematical Sciences" to "Division of Mathematical and Statistical Sciences", it doesn't make sense to me since statistics is only one application of mathematics, as is engineering, physics, operations research, etc. So why single out statistics? And that's regardless of any funding or other problems that might arise following the proposed name change.

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EMAIL NUMBER 178

Subject: Please do not include 'statistics' in the name of DMS

Statistics is the polar opposite of mathematics, despite some of mathematics, like number theory, also being data driven. Statistical hypothesis testing doesn't cut it in mathematics because most of statistics has no conceivable logical basis. It's handed down like the Ten Commandments.

Mathematics is fundamentally important to the advancement of science, and pure mathematics is uncannily essential. If the aim of changing the name of the DMS is, in part, to highlight this importance, then the first word that comes to mind is 'theory'. Euclid's school likely had more apt ones. I'll be happy to look, if you like.

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EMAIL NUMBER 179

I totally agree with the view of the AMS President. Statistics is a part of Mathematics and should remain as such. Funding for basic research, particularly for Mathematics, is at an all time low. We should avoid doing anything to create division within the mathematics community.

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EMAIL NUMBER 180



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Dear Prof. Friedlander,

I am opposed to the suggested name change of DMS. Mathematical statistics is a part of mathematics, so there is no reason to change the name, unless the division is supposed to also sponsor applied statistics research in medicine, industry, etc.

While the latter is undoubtedly important, it has other sources of funding and it has not been funded by DMS before. So this name change may represent a reallocation of funds that will cause the funding for mathematics and in particular mathematical statistics to shrink. Especially in the current situation, when this funding is already limited because of weak economy, this would cause catastrophic consequences for mathematical research in the US.

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EMAIL NUMBER 181

I think that in recent decades the breakthrough applications of statistical models to massive data have come from statistical mechanics (a branch of physics) by way of machine learning and pattern recognition (practiced largely in computer science and engineering departments), at least as much as through the main line of statistics research in Statistics departments. Indeed, exponential family models in statistics are essentially just Boltzmann distributions in physics; so they have been approached fruitfully from the statistical point of view, but also from the viewpoints of physics, machine learning, graph theory, and so on. In view of that history, I think it is premature to award the "massive data relevance" prize to Statistics (which I view as an applied branch of mathematics) over all other similarly-sized branches of Mathematics, though I do think that Statistics research actually possesses this relevance. But for example, I think that geometry and analysis have roughly equal claims to massive data relevance, at least in my own applications work.

So I agree with the reasons #3, 4, and 5, which you have expressed below, for opposing the name change.

Another way to put those arguments is: why "Division of Mathematical and Statistical Sciences" rather than "Division of Mathematical and X Sciences" where X = Graph-Theoretical or Numerical or another currently applicable branch?

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EMAIL NUMBER 182

Subject: no statistics!

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I support the AMS leadership view that the DMS of NSF should keep its name as is. Sharing funds with the data-crunching part of statistics is not acceptable.

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EMAIL NUMBER 183

I am a classically trained geometer with broad research interests. In my recent research there has been overlap with areas of statistics. I have participated in (and even helped organize) conferences where statistics and data mining are central topics. I recently gave a colloquium at a statistics department (U. Chicago). From these contacts I have developed a profound appreciation for the depth and breadth of statistics.

This being said, I find the proposed name change to the DMS deeply disturbing. At best, the stated motivation in your letter of Oct. 10 to Fred Roberts, to get more funds for everyone ("increase resources for ALL core programs"), would be a disservice to the taxpayers of this country. The DMS exists to fund basic research and it would be dishonest to present itself otherwise. On the other hand, if the proposed name change represents more than just a name change, but a fundamental shift in direction away from basic research in the mathematical sciences, this would be even more disturbing.

At the moment there is an extraordinary demand for certain aspects of statistics, but some unforeseen scientific breakthrough might lead to a demand in some other area. Should the DMS change its name each time a new area becomes important?

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EMAIL NUMBER 184

As member of the mathematical community, as well as a member of the AMS I strongly oppose the proposed name change from NSF's Division of Mathematical Sciences (DMS) to the Division of Mathematical and Statistical Sciences. I firmly agree that such a change would be divisive as well have undue affect on policy and future funding for basic mathematical research.

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EMAIL NUMBER 185

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Prof. Friedlander eloquently summarizes the reasons for my opposition to the NSF proposal to change the name of the Division of Mathematical Sciences. I will, if needed, write more in my own words but I wish to express my opposition with this email.

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EMAIL NUMBER 186

I'm STRONGLY AGAINST this name change.

Because to the best of my knowledge the subject of MATHEMATICS is the root of the tree of knowledge and as such it encompasses all aspects of knowledge including MATHEMATICAL PHILOSOPHY, MATHEMATICAL RELIGION & MATHEMATICAL ETHICS to say the least ALL BRANCHES OF STATISTICS including ACTUARIAL STATISTICS and those which have already mentioned.

THIS WILL ENABLE PEOPLE TO RECOGNISE MATHEMATICIANS AS TRULY "THE PERSON WHO COUNTS".

Basically this is the reason why I'm not a member of American Statistical Association.

Any branches of modern statistics can be put in the light of pure mathematics [Probability Theory, Measure Theory etc.] or its application.

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EMAIL NUMBER 187

Who cares about the size of a "division"? Only the bureaucrats who want to grow their empire.

What matters is what gets funded, not which division funds it. Reading between the lines, Pantula is saying that mathematicians will eat more if they share a bigger pie instead of keeping a small pie to themselves. That's a risky bet. If statistics is so much better at attracting funding, then this political advantage might be used to shrink math's fraction of the math + stats pie in the future. In economics jargon, the focal point would be a 50-50 split between math and stats, compared to the current split, which is more like 90-10. Is the pie really going to grow by 80%? How long will that growth take?

I'm sure Pantula is in a better position than me to make forecasts about these sorts of things. However, I frankly don't trust if most of the new money is based on selling stats instead of math, then a bait-and-switch of using money Congress intended for stats for math that nothing to do with stats will eventually be exposed and abolished. In the long run, we have to "sell" math; we can't just ride on the coattails of statistics. Therefore, we might do better to have our own NSF division, with a director who focuses on selling math, not "stats (and math)."

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Of course, this is not just about money. It's about status. The name change would implicitly say, "math is not as important or prestigious as it used to be; stats are more important and prestigious than they used to be." In other words, it would be another official endorsement and enforcement of a general cultural/intellectual shift towards emphasizing the concrete, computational, and apparently applicable aspects of mathematics.

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EMAIL NUMBER 188

Just as I would unabashedly use "he" or "Man(kind)" to include humans of either (or both) genders, so I would use (and suggest NSF continue to use) "Mathematical" in an inclusive way as well: the point here is that, whatever the name, if the intent is really to make the substantive changes in the basic science policy that Eric envision and fears, then it is precisely such a change which should be targeted (and argued against); focusing on the name change runs the risk of distraction from the underlying issues which Eric (and those of us concerned) must address.

EMAIL NUMBER 189

As a proud AMS member and faculty member of a department of mathematics and statistics, I write to support the proposed name change. I believe that it appropriately broadens the description of the statistical and mathematical work undertaken by the directorate.

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EMAIL NUMBER 190

I agree with all the comments of Pres. Friedlander, as well as those of his attached pdf. In addition, the Director's letter contains several assertions about the effect of the name change, but no evidence to support them. Nor does it discuss the probabilities that unintended effects may occur. More generally, few details are given in his letter. Thus, I do not support the suggested name change.

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EMAIL NUMBER 191

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I oppose changing the name of the NSF DMS to the Division of Mathematical and Statistical Sciences for the reasons already pointed out in Eric Friedlander's e-mail.

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EMAIL NUMBER 192

I fully support the AMS in its opposition to renaming of the DMS to include statistics. This proposal must have been crafted by the Tea Party to take from the poor and give to the rich!

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EMAIL NUMBER 193

If it ain't broken, do not fix it.

When one proposes a change, the burden should be on the proposer of the change. The Pantula letter only says that the name change will attract broader funding.

It seems highly dubious that the policy makers and the funding people will react just to a name change.

(This is as dubious as arguing that because a discipline has "fellows", the funding people are so shallow that they will give more resources to the whole field).

The Pantula letter does not indicate whether there will be any organizational changes to the division made necessary by the name change. These, of course, will be the crux of the matter.

Of course, in years of flat budgets, the promised increased funding has to come from other disciplines such as Physics, Biology, etc. How do they feel about this?

Some more background: In many Universities, Statistics was created to just have a professional segregation. The Statistical professional societies have been (successfully) lobbying administrators and accreditation agencies that the accreditation depends on faculty teaching the courses of their degree (irrespective of quality). I know many universities in which Mathematicians have been excluded from teaching the elementary statistics courses for humanities for which they are scientifically qualified (you have to spend several weeks practicing the "Sigma notation" for sums and the height of the course is least squares fitting). May be the AMS should consider doing something about this. (The AMS has been neglecting almost all professional issues for a long time: the abundance of temporary faculty, the lack of permanent

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positions, the pricing of journals, the preparation of graduate students for Industry jobs, etc.)

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EMAIL NUMBER 194

I am shocked that one part of DMS, a part that comprises less than 10% of the proposals, wants to become an equal partner within DMS. It seems to me like a takeover of a large part of the DMS budget by statistics. Statistics has many sources of funding while most other parts of core mathematical science have few. It looks to me like a power play.

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EMAIL NUMBER 195

I believe that this is more than just a name change. Director Pantula refers to attracting new funds (and new resources) in several locations of his letter. Where will the new funds come from? Are they to come from other NSF divisions, or from outside?

It is unclear if the two communities are merging under this banner. Will there be new programs and program managers to cater for statistics communities? Will those be in addition to what DMS currently have (seems unlikely), or would some of the existing programs be curtailed or canceled outright to make way for these new initiatives? If some of the current programs are to be cut, which ones? Why? This needs a full discussion.

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EMAIL NUMBER 196

I googled Sastry Pantula and discovered that he is a statistician and a recent President of American Statistical Association (2010). Now I am not surprised that he would try to inject a lot more stat into DMS. His home page is at:

<http://www4.stat.ncsu.edu/~pantula/>

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EMAIL NUMBER 197

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I agree with the opposition to the proposed name change. The next thing might be a proposal to change to "Mathematics, Statistics, Computer Science, and Mathematics Education."

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EMAIL NUMBER 198

I am opposed to the change

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EMAIL NUMBER 199

Mathematics and Statistics may overlap but are different.

Personally, I will use Biomathematics and add Biostatistics if necessary.

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EMAIL NUMBER 200

I fully agree that such a change is undesirable. Much of statistics is a very mathematical science. Also, I am opposed to changing names in general, especially when they get longer

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EMAIL NUMBER 201

I concur in opposing the name change.

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EMAIL NUMBER 202

Let us not waste any more time and energy on this nonissue. The name is fine at it is.

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EMAIL NUMBER 203

My first reaction when I heard of the proposed name change of DMS was that it was not a good idea, for the following reasons:

- I thought the reason why the name of the division is "Mathematical Sciences" and not "Mathematics" was (at least that is what I was told when I asked about this, many years ago) precisely because "Mathematical Sciences" covers more than "Mathematics", and in particular always is meant to include Statistics (whereas the label "Mathematics" typically does not)

- I am concerned that this name change in a very visible place will make it possible for people to exclude Statistics whenever an activity, organization, source of funding, ... is labeled "Mathematical Sciences", even if it was originally meant to include Statistics -- they will be able to point at the NSF Directorate to justify that when Statistics is not mentioned explicitly, it is not meant to be part of the "Mathematical Sciences".

(This is similar to my feeling that if something is labeled Mathematics, it includes both Pure and Applied Mathematics; the existence of separate Applied Mathematics umbrellas should not be a reason why the simple Mathematics umbrella should cover only Pure Mathematics.)

I found some of my concerns reflected in the message Eric sent, asking us for input, in point 3. However, I felt the formulation or some other points was not felicitous, to say the least, and possibly offensive to statisticians working in basic research. I have now received confirmation of this, through the reaction of a very distinguished colleague, a statistician who I esteem highly; I am seriously concerned that he (and probably many other eminent statisticians and friends) should feel (with good reason) insulted by a note circulated by the AMS.

(See my detailed comments below.)

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EMAIL NUMBER 204

1.) The mission of the NSF is to fund basic research. Much of mission-oriented Statistics is funded by other federal agencies hospitals, industry, etc. This name change suggests a move within DMS to relax its focus on basic research.

Much mission-oriented Mathematics is funded by other federal agencies, hospitals, industry, etc. as well. And if it is more closely linked to the applications it serves than to basic research, then so it should be, just as with Statistics.

But there is definitely *\*very\** basic, and very mathematically subtle research within the Statistics community, and arguing that putting Statistics explicitly in the name of the Division indicates that the



Division aims to steer away from basic research is, I think, very offensive towards those researchers; it struck me that way at first reading, and I am not surprised it is experienced that way by them. Don't we want them to be our allies in arguing against this name change? If it turns out that only mathematicians argue against the name change, and all statisticians, no matter how basic their research is, are in favor, then I think this means we have been/are far less inclusive than we like to think we are...

2.) The suggestion of "new resources to all core programs" is far different from any commitment to seek new resources to support the basic research of these programs.

If I read his letter correctly, DMS Director Pantula feels that new resources could be made available to DMS if it explicitly demonstrates a stance of openness to new revolutionary applications.

If his reading is correct, then I applaud this -- mathematical thinking and the development of new mathematical concepts \*are\* very important in this context, and it is important that DMS attract the extra funding, if available, that would possibly be more available to a nimble organization that is aware of new developments and that can document its support of basic research in areas that are crucial for those new applications.

[I may not agree that a name change is necessary for this, but that is another matter.]

I would not immediately impute a wish of supporting other than basic research...

3.) The current name (Division of Mathematical Sciences) was crafted to be inclusive. The inclusiveness of DMS has resulted in increased funding for many programs including Statistics. The Mathematical Sciences should work together, emphasizing commonality and presenting the best case for the importance of the Mathematical Sciences.

Agreed! (See above ...)

4.) Statistics is only one of 10 programs supported by DMS. In 2010, of the 2978 proposals submitted to DMS core programs, 242 were submitted to the Statistics program. It is natural to ask why Statistics appears to be uniquely selected by DMS for special emphasis.

I think this is a point it is better not to raise, because it half concedes the point if there are natural ways in which Statistics differs from other programs in DMS. And I think there are several. To name just one: it is the only discipline among those represented in DMS in which there is an independent department is most research universities.

5.) The analysis of big data is indeed important, and the Mathematical Sciences will play an important role in developing fundamental concepts and approaches to manage the "data deluge" and extract useful content. That said, National Science Foundation support of the Mathematical Sciences should energetically embrace basic research in all aspects of the Mathematical Sciences to advance fundamental knowledge and initiate unexpected revolutionary applications.

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I don't see how this is relevant?

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EMAIL NUMBER 205

I fully agree with the Member comments: there are aspects in many areas of science and engineering that fall within the realm of the mathematical research standards and interests.

It is important that DMS continues to support those areas but that does not mean we should pretend to incorporate them: that will dilute our ability to judge the quality and value of our enterprise, and to evolve with scientific developments

I think we should not change the present structure of DMS that has always reacted strongly to new, exciting developments.

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EMAIL NUMBER 206

I am against changing the name of this division. I think the part of statistics that belongs under the umbrella of mathematics is already there and we don't need to emphasize it. If we start adding sub-sections then why not adding also "Theoretical Computer Science"? Division of Mathematical Sciences is a wonderful name for a collection of difference sciences that use math in all its versions. Trying to add more to it will only make it less inclusive.

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EMAIL NUMBER 207

I completely agree with the comments presented in your email, and also strongly oppose this proposed name change! I think this may represent a dangerous shift in NSF's focus away from supporting fundamental research in mathematical sciences. Mathematical statistics is one of the many mathematical disciplines, along with, for instance, number theory or discrete geometry, my areas of specialization, so it is not at all clear to me why it should be singled out in a special way like this.

I sincerely hope that this name change does not go into effect.

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EMAIL NUMBER 208

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I have not had, nor have I sought, an NSF grant as an individual. But, I have served as principal on an NSF grant to establish a mathematical laboratory classroom at my institution. I see no reason to change DMS's name. Statistics is a mathematical science and, as such, is in no need of special attention. I think one would have a stronger argument for the name Division of Mathematics and Mathematical Sciences, since it is mathematics which underpins all of the mathematical sciences. I think NSF, of all agencies, should be most concerned with basic research or research with a promise of applicability. Leave it to other agencies to have mission-oriented work as their main target of support.

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EMAIL NUMBER 209

I oppose the proposed name change for DMS.

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EMAIL NUMBER 210

I fully agree with the opposition to the proposed name-change.

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EMAIL NUMBER 211

I strongly oppose the name change. The name at present embraces all mathematics.

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EMAIL NUMBER 212

I fully agree with the comments of President Eric Friedlander in opposition to the proposed name change for the NSF division concerned with mathematics.

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EMAIL NUMBER 213

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The expression "mathematical sciences" should be a big umbrella and not need to be modified with any "and" clauses so my initial reaction to NSF's name change proposal would be to support the AMS President's recommendation. And yet I find myself bothered by phrases such as "the less mathematical aspects of Statistics." I sense a conceit in such wordage that would make the umbrella not so big.

The discussion of the size of the mathematical sciences umbrella is by no means new. Veblen and Archibald had it a mere 50 years ago. Archibald wanted a big umbrella and Veblen wanted a small umbrella. Veblen won and the AMS became and has remained mathematical social register. The current President channels Veblen in the content of AMS publications, attendance at AMS meetings, appointments to the AMS hierarchy, in the AMS Fellowship initiative, and now in the naming of the NSF. These are not mathematicians with numbers under their fingernails.

In private, mathematicians of the AMS persuasion take great pride in the lack of applicability ("the less mathematical aspects") of their endeavors. Unlike physicists and chemists, there is no reality to which these individuals feel obliged to tether their work. Physicists don't study perpetual motion machines, chemists don't study alchemy, and astronomers don't study astrology. In all of these sciences there is a reality check called experimentation.

Rather than building theories that can be experimentally verified or rejected, mathematicians build untestable theories in spaces that few mortal souls will ever visit. Who says this theory is a good one and that one not so good? Why, the mathematicians themselves. Theories without testability. One might argue 'mathematical science' is in fact an oxymoron. Indeed, one might say that the AMS's version of mathematical science isn't a science at all in the sense that other sciences and the man in the street understand this word.

Private fraternities such as television's famous International Order of Friendly Sons of the Racoons can of course have whatever membership rules they please and conduct whatever ceremonies they please. If they all want to go off an party in a twisted torsion space then I hope they have a wonderful time. But when they want to send the taxpayer a bill for the refreshments I think the taxpayer has the right to ask what went on in the twisted torsion space and why do the Brother Racoons think that somebody else should pay the tab.

The arguments of the AMS insiders with respect to the NSF's proposed name change are a smokescreen. The AMS would have the world believe that the mathematical sciences umbrella was big and should be funded as if it were big. The reality is that AMS means for it to be very small.

Would changing the name of the Division of Mathematical Sciences to the Division of Mathematical Sciences and Statistics help open the umbrella? Maybe. But it seems a clumsy way to do this. A better way would be for the Division of Mathematical Sciences to be a big umbrella. Let some practitioners on the review panels. Give seed grants to independent

## Responses from AMS Members

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scholars. I've never been invited to sit at the table of Big Government Science so I can't imagine how being a bigger NSF umbrella might be accomplished. But I'd be willing to bet a dozen of Dunkin' Doughnuts best glazed that it's possible.

I do however recognize that the desire to keep the umbrella small as what is really behind the AMS arguments against the name change. This is unfortunate because a lot of really good mathematicians are left out in the rain. If changing the name to Division of Mathematical and Statistical Sciences would bring some of these folks in from the cold then I'm all for it.

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EMAIL NUMBER 214

I deem that the name change is not justified for just about the same reasons raised in the mass mailing from AMS President Friedlander. In its more applied manifestations, statistics is clearly well represented in a wide variety of other contexts (business, medicine,...) and, while, in its more theoretical incarnation, also a deserving component of DMS, there does not seem to be any fundamental reason for it to be single out in the designation of DMS at the same level of Mathematics.

While the name change might arguably have a positive psychological impact on the perception of the division in the political arena and, consequently, on its funding, this does seem to me justification enough for a change with various conceivable unintended consequences.

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EMAIL NUMBER 215

I am an applied mathematics classical physicist. My Ph.D. is in computational multibody which is dominated by ODE's, PDE's, DAE's and the Eigenvalue Problem. Lots of math here and my devotion is directed to the math side not the business engineering side.

And that's my point of contention, there is too much manipulating being done by the American business administrator in STEM methods to make them more comprehensible to his business sense. I have witness this invasion over the last 40 years of my career. I live in the Detroit, MI area and have watched the brilliant MBA, most Harvard variety, come into the auto world and take the STEM process away. Much of the auto engineering science work was done locally but now has been shipped out to lower cost foreign suppliers, many in Asia and Europe. Consequently we had two major American companies go belly up while the administrator walked away with tens and hundreds of millions in dollars.

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The problem here is the professional administrator has power and influence over the operations. While STEM scientists think and work deeply in their research or development, the business administrator is stealing away the process. This suggests more STEM scientists need to grab control of their profession, which you are doing now.

I see this action taking place in the simple change of a name. Having worked with people involved with the Six Sigma process for quality improvement I've gained some awareness of how the business philosophy and approach has infiltrated and consumed the real science of improving technical things. At the root of the Six Sigma approach is statistics and the businessman understands percentages and statistical parameters. No real science is done with Six Sigma, its just a philosophy of organizing the statistics. Hence, I see the NSF administrator wrangling with the current title to pull out a functioning of the NSF process from the mathematical expert and fit it into the pocket of the MBA. I've seen this done over and over in American automotive and hoped there was a safe haven STEM could be comfortable in. Apparently that niche is being renamed at NSF.

Thank you in asking for opinions. If you need more, I can write more and hopefully point out the bold challenges being taken by the business administrator.

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EMAIL NUMBER 216

I support the proposed name change, it is long overdue. All one has to do is look at the long list of universities where a statistical group split off into a separate department because of animosities from within Mathematics departments. The same problem occurred with computer science

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EMAIL NUMBER 217

I agree with his points, and those of the anonymous `Volunteer leader of the AMS, in expressing concern about the proposed name change of the DMS.

As currently run, the NSF's DMS acts as the unique national support for basic mathematical research. History gives us many examples of some of the most applicable mathematics being developed first in a `basic research' environment. To the extent that there is an immediate need for certain types of application, there are many examples that the basic research community is ready and interested in rising to the task: examples of cryptography and medical imaging come to mind. Within the basic research community today, one can see new areas emerging: topological data analysis is an example.

## Responses from AMS Members

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To the extent that analysis of huge data sets needs special attention at the moment - and it certainly does - one would expect significant funding to come from the key users: e.g. NIH, DARPA, etc. There is no reason that the more theoretical and mathematical aspects of such problems can't be supported within the existing DMS, with perhaps improved collaboration with these more directed funding agencies.

I was forwarded Friedlander's message by an ex president of SIAM, who added the response "TERRIBLE" to Dr. Pantula's suggestion. He understands that the vibrancy of mathematics, including applied mathematics, will be diminished by adding implicit preordained direction to the DMS.

In conclusion, I would hope that the director of the DMS would focus his efforts on educating politicians and policy makers about how successful (and efficient) the American mathematical community has been at pushing the frontiers of mathematical research.

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EMAIL NUMBER 218

Mathematicians take pride in being open-minded. Our subject is in constant development and interacts with other developments in the sciences, technology and society. This should (and does) affect what gets funded. However, if the DMS indeed wants to re-position itself, that should be based on a comprehensive forward-looking assessment.

As it happens, such an assessment is currently underway, through the "Mathematical Sciences in 2025" panel of the National Academies, which has involved many leading mathematicians, and should complete work early in 2012 (draft reports are already being distributed for comment). Analysis of large data sets indeed appears as a theme in this consultation process, but so do other areas of growth that are even more recent and less predictable, but are thought to have comparable or even bigger future importance.

I was surprised to see that Prof. Pantula's proposal did not seem to take this into account, and was instead based on a more limited (and possibly more subjective?) assessment.

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EMAIL NUMBER 219

Given the difficulty most universities have had in trying to make statistics and mathematics to co-exist as a combined department, I cannot imagine by what argument NSF feels that it will work for them.

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I strongly recommend that it not be done.

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EMAIL NUMBER 220

I oppose the name change. It appears that a name change would eventually result in a mission change of DMS, with much bigger emphasis on immediately applicable results. Most mathematicians are not in the business of immediate applications, and they should not be.

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EMAIL NUMBER 221

I have no opinion, per se, about what the name of the NSF/DMS should be.

However, I hope that the mathematics community recognizes the importance of applications for sustained funding for current and future generations of mathematicians. Society and government may not continue to fund disciplines that are not viewed as producing any useful 'products' (philosophy is a historical example, and many of the arts is a current one).

I work for a government lab where, over the last 25 years, funding for independent research has dried up; this is due in part because many (and I am one) researchers/mathematicians were unable to make sufficient connections of their work with engineering needs.

The current US government needs to extract information out of large data sets can be a good source of funding (for mathematics, as well as statistics); I hope the academic mathematics community is able to benefit from this opportunity.

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EMAIL NUMBER 222

(Vacation message or similar non-response)

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EMAIL NUMBER 223



## Responses from AMS Members

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Having just come from a workshop organized by ICIS on the problems of Verification and Validation at the exascale, I must respond to your letter with my impression that this discussion is a bit misplaced. The size of the data sets coming out of biological research alone will push us to the exascale, and a major foreseeable block to progress is the uncertainty of computer hardware for computers of this size. Do the mathematical sciences have any input to the taming of this monster?

Furthermore, big data is one thing, but where do we put image processing and climate modeling, for example. If the problem is large scale computations, we should all look for a name which better reflects the issues.

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EMAIL NUMBER 224

Last January, in my waning moments as AMS President, I wrote the following letter to Sastry Pantula after the Joint meetings in New Orleans. My letter was in response to a continuing use of the acronym SMACS (Statistical, Mathematical and Computational Sciences) by Director Pantula in public presentations. Here are the relevant paragraphs that I sent him:

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EMAIL NUMBER 225

I would like to follow up a little on the question that I raised at the beginning of the question and answer period after your talk. As you recall, I asked you if the use of the acronym, SMACS (Statistical, Mathematical and Computational Sciences), signalled a new emphasis at the NSF with concentration on Statistics and Computational Mathematics. I was greatly reassured by your response. However in light of your assurance that Statistics and Computational Mathematics will in no way be privileged during your reign, I would like to recommend that you not use SMACS in referring to your domain at the NSF.

A number of mathematical scientists have expressed their concern about this acronym. The reason that it causes concern is because of its non-parallel construction. It is like saying that there will be a Mackerel, Fish and Halibut project at the local aquarium. Because mackerel and halibut are two species of fish, one assumes that these two will dominate the project. Everyone understands that Statistics and Computational Mathematics are two of the several mathematical sciences under your jurisdiction. I am sure from your response in New Orleans that it is not your intention to make anyone think that Statistics and Computational Math are going to get special treatment; indeed, you were quite emphatic about this. Using the acronym SMACS makes one draw

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incorrect conclusions about your intentions, and I hope that you will return to using the simple phrase, Mathematical Sciences.

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EMAIL NUMBER 226

Now, for reasons not explained, Director Pantula has reduced his campaign from SMACS to DMSS. Considering the evolution from SMACS to DMSS, I become even more concerned about where this is leading. What was the point of originally including "Computational Sciences" and then dropping them? One cannot escape the impression that a cosmic shift in emphasis was contemplated for DMS. Once opposition arose, the effort was scaled back to merely getting a further S in DMS. However, Director Pantula's letter suggests strongly that while it is to be just DMSS; SMACS with a corresponding shift of emphasis to mission research rather than basic research is what is contemplated. If the NSF diminishes its support for fundamental research, there is no other Federal Agency charged with taking over that that vital aspect of science. I strongly oppose the proposed name change.

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EMAIL NUMBER 227

(Vacation message or similar non-response)

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EMAIL NUMBER 228

(Vacation message or similar non-response)

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EMAIL NUMBER 229

I do like the idea of the name change.

I do not like the polemic tone and discussion associated with this idea.

Perhaps this is an idea whose time has not come.

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EMAIL NUMBER 230

I strongly oppose the proposed name change of DMS to DM & SS. I agree fully with the 5 clear reasons discussed in the email, and think this change would have a deleterious effect on basic math research funding.

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EMAIL NUMBER 231

I would oppose such a name change for precisely the reasons listed in Professor Friedlander's e-mail included below. In particular, I worry that this move could dilute the funding pool for basic research in mathematics. Although my own research happens to be mission and application-oriented, I rely heavily upon novel ideas stemming from basic mathematics research.

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EMAIL NUMBER 232

I am writing to express my opinion that the name of Division of Mathematical Sciences should not be changed. In particular, Mathematical Sciences includes statistical research, so I think it is a mistake to separate out the statistical part of mathematical science. You would not do this for research in discrete mathematics, or in applied mathematics, or computational mathematics, etc., so I think separating out statistical science from mathematical science serves only to separate (unnecessarily) one branch of the mathematical sciences. I also am strongly against funding anything outside of basic research, and I am concerned that this name change will result in other funding choices being made.

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EMAIL NUMBER 233

(Vacation message or similar non-response)

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EMAIL NUMBER 234

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Such a move should be discouraged and fought as much as possible.

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EMAIL NUMBER 235

I am opposed to the change of name from Division of Mathematical Sciences to the Division of Mathematical and Statistical Sciences. At the heart of Dr. Sastry's view is a characterization of Statistical Science as being intrinsically interdisciplinary and the implication that Mathematical Sciences are not. I believe this to be, on the whole or "statistically", false. Data analysis, central to statistics, is an area of accelerating importance. It fits very well into the heading of Mathematical Sciences.

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EMAIL NUMBER 236

I see no positive side to the proposal. Why not probability, or control theory?

I was truly appalled by Sastry Patula's letter. Two sentences gave lip service to core programs, and the rest has absolutely nothing to say about them. It is obvious that core mathematics is not high on his list of priorities.

A change of Division Director is more appropriate than a change of Division name.

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EMAIL NUMBER 237

I have several significant concerns with the proposal to change the name of the DMS to DMSS. Isn't statistics a mathematical science? More precisely, isn't the statistics that is fundable by DMS a mathematical science? Statistics is merely one of the many mathematical sciences, comprising fewer than 10% of recently funded proposals. So why the name change? To be more welcoming to the statistics community? I find it hard to believe that this isn't already the case. Quite the contrary, singling out this group would not be viewed as welcoming by the 90% who are not in statistics. So does the name change represent a shift in (future) funding priorities? That seems to be the obvious conclusion. I cannot imagine the mathematics community being supportive of such a change without clear statements regarding the budgetary intent, both

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short- and long-term. But if that's not the reason, then there's simply no need for such a change, and little likelihood of widespread support.

For all of these reasons, I strongly oppose any such name change.

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EMAIL NUMBER 238

I agree with Professor Friedlander.

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EMAIL NUMBER 239

I totally agree with the points you've made in your letter. This change of name is not simply a change of name and mathematicians should oppose it. You have my support. The current name (Division of Mathematical Sciences) is inclusive enough. Thank you for dealing with the issue and let me know if there are any petitions that I should sign.

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EMAIL NUMBER 240

Why single out statistics for inclusion in the name, when DMS is not even its primary home? There is of course a lot of very applied statistics funded outside DMS, but if someone is doing work so non-mathematical that it doesn't qualify under the very broad heading "Mathematical Sciences," then perhaps they shouldn't be applying to DMS for funding.

A key question would be, has DMS been funding a lot of statistics work of that type, i.e. so non-mathematical that it doesn't properly come under the heading "Mathematical Sciences"? Or would the statisticians just like it to start doing so, and they would like to be able to later say, "Look, we need a bigger share of the pie, DMSS is the intended primary place statisticians go for funding! You can tell because it says 'Statistical' in the name!"

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EMAIL NUMBER 241

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I would be against the name change. Statistics should not be singled out and displayed in the title.

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EMAIL NUMBER 242

(Vacation message or similar non-response)

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EMAIL NUMBER 243

Although I have no original thought to add to the discussion, I wish to express a huge sympathy for the questions and objections raised by Friedlander in his letter, and I stand against the name change.

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EMAIL NUMBER 244

I do not quite understand why we need a name change for the Division of Mathematical Sciences. I believe that mathematical statistics should be a part of the division but that the general subject of statistics should be independent. Clearly that implies overlap. Some overlap is a good idea for this broad and varied subject. The subject was discussed at great length many years ago. We are digging the same ground over once again. Good Luck with it.

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EMAIL NUMBER 245

I wish to support the opposition to the proposed name change of DMS.

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EMAIL NUMBER 246

I have read the writeup by Dr. Pantula and also your response.

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I would like to comment directly on the issue raised by Dr. Pantula regarding "big data". He uses this as the impetus for the name change.

I have concerns about his logic on scientific grounds. There are many subdisciplines within core mathematics that are quite relevant to the study of high dimensional and large datasets. These include graph theory and combinatorics, computational harmonic analysis, numerical linear algebra, optimization, topology, differential geometry, probability, and abstract algebra.

There are people from all of these fields working in this area. I think it is important to promote the importance of all the subdisciplines of mathematics when it comes to making impacts in real world problems of importance to other areas of science. By singling out "statistics" in this way it seems to me that we are somehow hiding the fact that so many other areas of mathematics are important to studying "big data".

As a case in point, I recently submitted a proposal to study large datasets. This proposal brings ideas from nonlinear PDE, graph theory, probability, and differential geometry.

I am concerned that somehow the core areas of mathematics will be marginalized in terms of relevance to new scientific problems and discovery, when it is important to be looking at very novel approaches to such problems, rather than fostering a community that will merely apply existing methods to new problems, rather than developing new mathematics in a broad way.

I think it is important to explain these issues as part of the discussion of the core areas of mathematics.

I hope this perspective is helpful.

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EMAIL NUMBER 247

Thanks for your comments. I will leave for the community leaders to summarize all of the comments that would be beneficial for NSF to make its final decision. I apologize for not responding to the emails with my personal thoughts.

In the end, I would hope for all our communities to work together on many important short term and long term problems.

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EMAIL NUMBER 248

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I think this is very well said and I'm in complete agreement. I find it a little sinister, actually, especially as Pantula also hassled the organizers of a conference on mathematical geoscience that I was peripherally involved with for not having put statistics in the title: it seems a bit of an idee fixe.

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EMAIL NUMBER 249

I strongly oppose the NSF change of the DMS to the "Division of Mathematical and Statistical Sciences".

Something similar happened at Harvard where mathematics was completely removed from the description of general education, only to be replaced by "Empirical Reasoning". The new name telegraphs a complete misconception of the science of mathematics; like the Harvard rubric, it leads one to believe that mathematics is just a mean to certain "practical ends" such as statistical analyses.

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EMAIL NUMBER 250

I, too, find this suggested name change deeply troubling.

Arguably one of the best functioning, inclusive, and leading research departments in the mathematical sciences is MIT - where all of statistical, computational, pure, and applied mathematics is integral part of one "Department of Mathematics". The fact is that there are mathematicians in other departments, too, is then often recognized joint appointments. I see the funding situation very similar: All science that is sufficiently mathematical can seek funding in the DMS; but some also belongs to other fields, and hence finds its funding in other divisions or organizations, to varying degrees.

I'm also wondering what "statistical sciences" actually are. My naïve interpretation is "all research projects that use statistics to some degree", and this seems to be confirmed by wikipedia:

"A statistician is someone who is particularly well versed in the ways of thinking necessary for the successful application of statistical analysis. Such people have often gained this experience through working in any of a wide number of fields  
([http://en.wikipedia.org/wiki/List\\_of\\_fields\\_of\\_application\\_of\\_statistics](http://en.wikipedia.org/wiki/List_of_fields_of_application_of_statistics)  
).

There is also a discipline called mathematical statistics that studies statistics mathematically."



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Here is a part of those fields of "statistical sciences":

\* Population ecology is a sub-field of ecology that deals with the dynamics of species populations and how these populations interact with the environment.

\* Quantitative psychology is the science of statistically explaining and changing mental processes and behaviors in humans.

\* Psychometrics is the theory and technique of educational and psychological measurement of knowledge, abilities, attitudes, and personality traits.

\* Quality control reviews the factors involved in manufacturing and production; it can make use of statistical sampling of product items to aid decisions in process control or in accepting deliveries.

\* Statistical finance, sometimes called econophysics, is an empirical attempt to shift finance from its normative roots to a positivist framework using exemplars from statistical physics with an emphasis on emergent or collective properties of financial markets.

Does Director Pantula intend to invite more research proposals from these areas with the proposed change of name? If so, then this change of scope should be discussed openly, not hidden in a name.

For the current policy of supporting research that studies statistics mathematically, the name of mathematical statistics, hence a branch of the mathematical sciences, seems more appropriate.

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EMAIL NUMBER 251

"If it ain't broke, don't fix it. That's the trouble with government: Fixing things that aren't broken and not fixing things that are broken."

- Thomas Bertram Lance, Director of the Office of Management and Budget.  
[Quoted in the newsletter of the US Chamber of Commerce, Nation's Business, May 1977.]

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EMAIL NUMBER 252

Before coming to the US I lived in two other quite different systems, namely I grew up in the communist system (Romania), then lived through the changes in the university system in Germany (which was "perfected" in the year I left for the US).

In both systems I witnessed changes pushed through in order to "improve" things which were working, and in all the cases I know the things worsened after the "improvement." I don't want to see this happen with

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the DMS!!! I think that the DMS works perfectly, thus why "fix" it? Is it not an American wisdom that "If it ain't broke, don't fix it!"

Mr. Pantula, please, don't "fix" our DMS, 'cause it's working!

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EMAIL NUMBER 253

I agree with Eric that this proposed name change is potentially ominous for the mathematical research community. My particular worry concerns the definition of "statistical science." This phrase could easily be construed to include many quasi-scientific areas of thought, e.g., Economics. Many in the Economic community view their work as "statistical science." Needless to say, many would disagree. But it is not necessary to agree on what constitutes "statistical science," in order to oppose this change. It is sufficient to realize the inherent ambiguity of the phrase, no matter how interpreted, would, no doubt, admit much thought that many would agree is not, fundamentally, mathematical in nature. Thus, at best, the name change will dilute the pool of research proposals with marginally mathematical and/or topics which are merely cosmetically mathematical. At worst, it will open the pool to all sorts of econometric, financial, social, psychological, political, and anthropological projects. I do not say that such projects do not have intellectual merit, but they should be funded out of other sources - certainly not out of those funds traditionally earmarked for mathematicians.

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EMAIL NUMBER 254

I agree with the member's reply to the Mr. Pantula's ridiculous renaming suggestion.

His "arguments" are laughable.

Yes, today "Big Data" is big, let's mention Statistics in the name.

Yesterday "Prime Numbers" were big, we had to have Cryptography in the name.

Tomorrow "String Theory" will be big, let's rename the division again.

Evidently, Mr. Pantula cannot comprehend that Mathematics is an infinite supplier of knowledge for many (practically all) disciplines and the fact that one of them is more fashionable today in no way warrants a name change.

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If one follows his logic one has to rename this division every couple years.

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EMAIL NUMBER 255

I completely disagree with the suggested name change to somehow give more weight to research in "data mining" techniques. Although obviously important for certain research projects with which many are familiar, any branch and subarea of mathematical research can suddenly become associated with "applied mathematics" e.g., the area of arithmetic algebraic geometry and its relation to cryptography. I am in agreement with those who have spoken against the proposed change that are discussed below.

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EMAIL NUMBER 256

I have been a mathematics professor for thirty years and spent three years recently as the chair of a large department. I am now a bit cynical after noticing that many initiatives proposed by administrators are efforts to take power and control of academic policy and direction away from the faculty and researchers and give it to the deans and provosts.

I believe that the net effect of the proposed name change from Division of Mathematical Sciences to the Division of Mathematical and Statistical Sciences will likewise be a shift of power and control away from the scientists who now control the direction of basic research through panels and peer ratings toward administrators at the NSF. The mechanism is this: by making the title of the division less focused and less specific, the administrators can propose their own pet projects involving terms like "big data". Such projects would be less likely to fit in a "Division of Mathematical Sciences".

I realize that the people who will make the decision about the name change of the Division are in fact administrators at the NSF, and to point out that they too can have motivations which involve power and control may not be persuasive to them. Nonetheless, I urge that the name not be changed, and, furthermore, that all efforts of the NSF should be directed by the mathematical sciences community as much as possible.

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EMAIL NUMBER 257

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I received notice today about a proposal to combine mathematics and statistics in the same division at the National Science Foundation. At our university, like at most research universities, mathematics and statistics are separate departments. In fact recently we had a discussion that eventually touched on that point (even though it was mainly about a different question). Most faculty in both departments were adamant that mathematics and statistics should stay separate. In particular, I certainly felt that way.

So I equally think that it would be mixing oil and water to have one NSF division called mathematics and statistics. I understand that some research in statistics truly is a kind of mathematics that could be included --- and it already is included. A lot of other statistics is work in economics, genomics, political science, etc., that is not research in mathematics, although it might use mathematics. Maybe such research is important and should be funded somehow. But it is \*essential\* for the NSF not to carve new good efforts out of old good efforts.

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EMAIL NUMBER 258

I agree with Dr. Friedlander's remarks. If there is a change in policy then this should be clearly articulated. If there is no change, then the case for a name change is not strong.

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EMAIL NUMBER 259

Name change is unnecessary because:

(1) the theoretical aspect of statistics is no different from probabilistic analysis, well covered under mathematical sciences;

(2) the applied or data driven aspect of statistics can be integrated into either computational mathematics or machine learning, a subset of computer science.

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EMAIL NUMBER 260

The name change is a terrible idea for all the reasons given. It seems clear that with or without the change, there are pressures to cut funding

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for core math in favor of more immediately applicable subjects like data mining and practical statistics. My guess is that it's going to happen whichever way the name game is played out, but that it will be worse if the change takes place.

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EMAIL NUMBER 261

I strongly support the view to keep the old name DMS!

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EMAIL NUMBER 262

The name change of the DMS will be another blow for mathematics in this country. NSF does not always know what it is doing. It has focused on ridiculous projects like this on the past and continues to do so now.

Many of our undergraduates are taught by incapable people in mathematics education, math biology, or statisticians. Now they want to blur the lines between mathematics and statistics between the damage that they have done is not enough.

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EMAIL NUMBER 263

Just in case you are counting I agree with all the points in Eric Friedlander's letter.

A comparison on a very small scale we have considered the possibility of modifying our department name from Mathematics to "something else". Not only do we teach mathematics but statistics, operations research, theoretical computer science, and computational science to an audience of application oriented students in mathematics science and engineering. These are all mathematically based sciences. However a Department of Mathematically Based Sciences would sound silly. So the Mathematical Sciences makes the most sense just as in the current title of the DMS. I am sure that all the basic research in the topics I listed re supported by the DMS in its current form.

The proposal seems more like a marketing or branding effort. However there may be unintended consequences to the mission of DMS.

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EMAIL NUMBER 264

I strongly object to the proposed change, the Mathematical world and the Statistical world are quite different.

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EMAIL NUMBER 265

Statistics is part of mathematical sciences, by putting a word statistical separate will divide the mathematical sciences group and bring unwanted division among people, so I oppose the idea and strongly support to have as just division of mathematical sciences

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EMAIL NUMBER 266

I am concerned that the naming question will crowd out the idea that data can illuminate the research frontier not just in Statistics but also in Mathematics.

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EMAIL NUMBER 267

I am opposed to the proposed name change for the reasons described in Dr. Friedlander's email. I find Director Pantula's letter troubling, and I strongly agree with the sentiments as expressed in the supplementary material attached to Dr. Friedlander's email.

Especially, if the DMS is to start supported non-mathematical research (in statistics), as Dr. Pantula suggests, that is a major policy change. I doubt that I would support such a policy change, but in any case, the policy change discussion needs to come before the name change.

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EMAIL NUMBER 268

I oppose the name change, mathematical sciences is broad enough that it encompasses statistics.

EMAIL NUMBER 269

I strongly agree with Eric Friedlander's points.

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EMAIL NUMBER 270

I am writing to express my views and concerns about the proposed change at the NSF of the Division of Mathematical Sciences to the Division of Mathematics and Statistics.

First, I wish to concur with other expressed views that Statistics is a very important field of research and study within the discipline of Mathematics. I wish also to contribute the view that what is being proposed in at NSF in the field of research is akin to what has already happened in the field of education. At the undergraduate level, at many colleges and universities, students are not required to take mathematics as part of their general education. Instead, they are required to satisfy a "quantitative reasoning" requirement which very often satisfied by courses such as statistics taught by non-mathematicians in non-math departments of social science, business, etc. These other departments, as a result, are allocated more resources, at the expense of the mathematics departments. Unfortunately, the real loss is to the students. Statistics is a mathematics course and is best taught by experienced math educators who are mathematicians. With the proposed name change at the NSF, the already very limited funding will be diverted from mathematics to other disciplines. The real loss will be to the country with a weakening of the backbone of hard science and mathematics that has been so essential to our national prosperity and defense in the past.

Please feel free to edit my concerns and views without changing their general intended meaning.

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EMAIL NUMBER 271

As a practical matter, mathematics by itself is naturally in a weak position to protect its interests. On occasion in the past those interests were successfully bolstered by our friends in other disciplines. Physics, chemistry and other fields value mathematics, want to keep it healthy, and may be useful in countering this attack on NSF support of core mathematics.

EMAIL NUMBER 272

I strongly oppose the proposed DMS name change, for all the reasons mentioned in Eric Friedlander's e-mail. Applied and practical sciences have plenty of support from industry, and rightly so. The role of the NSF should be to support basic science, focusing on long-term impact and social value. Giving statistics equal billing with mathematics distorts the balance and is likely to result in allocations of funding and energy in ways that are not in alignment with the United States' best interests in the long term.

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EMAIL NUMBER 273

I am strongly OPPOSED to the name change in DMS. In addition to the reasons mentioned, I would add:

1. This name change is, as indicated by Mr. Pantula, largely in response to the hot new trend in the analysis of large data sets. To make a major structural and/or name change in response to a very specific hot topic not only makes little sense, but I believe it can be harmful. One only needs to look historically at such decisions to see how they turned out.
  2. I find it disturbing that the first action by the new head of DMS is to propose a major change that is dramatically in support of his own specialized area.
  3. I would like to know: how many proposals by statisticians on the analysis of large data sets have been submitted, and how many have been accepted? Is there a demonstrated pressing need for more funding in this direction?
  4. Are there specific moneys from the government that would open up to the DMS if it were to change its name to DMSS? Which SPECIFIC opportunities would require this name change? Are these specific opportunities of such importance that it is worth a major structural/name change in the division?
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EMAIL NUMBER 274



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The issue, logically considered from a "nonpartisan" viewpoint, is ENTIRELY POLITICAL.

"Washington", the big collector of taxes, is the Lord Grantor and can spend \$\$ according to its (or their) preferences. Thus the AMS is legally like a recipient of welfare \$\$ spent by FEMA on parties that have suffered from flood damages.

(I can't quite actually calculate which name form for the DMS (from the current name) would have the AMS-desirable function of maximizing the \$\$ spent on AMS desiderata.)

"Instinctively" I dislike the concept of the name change but I feel that it should be logically understood to be the RIGHT of higher authority to change it, if desired.

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This area of issues MAY be analogous to the area of contentions over the names of "Macedonia" and "FYROM".

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EMAIL NUMBER 275

Mathematics is the science of deduction and statistics is one branch of that. Why not single out algebra or geometry or logic, etc, etc. Where does it end?

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EMAIL NUMBER 276

I am at the University of Illinois, where Tondeur had been a faculty member. We had separated Statistics from the Math Department many years ago, and the effect was largely a loss of resources for Math. Presumably, this is what we can look forward to if NSF names statistics as a co-equal with the rest of mathematics.

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EMAIL NUMBER 277

I do not support the idea of a name change for DMS and endorse the arguments made by the AMS President Eric Friedlander and others.

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EMAIL NUMBER 278

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I am writing to SUPPORT the proposed change of DMS to the Division of Mathematical and Statistical Sciences, advocated by Director Pantula.

Because it is clear that the AMS leadership have made up their minds to oppose this proposal, and because I am currently an untenured member of a mathematics department at a major research university, I would request that this comment remain as anonymous as possible.

I think the trends are clear: if we are to thrive as a profession, mathematicians of all stripes need to work harder to embrace connections to the empirical sciences. It is unconscionable in this day and age that, for example, many mainstream undergraduate programs do not require mathematics majors to take a single course in statistics, nor much in other sciences. If we are to hold on to a significant share of a shrinking basic research budget nationally, we are going to have to get our heads out of the clouds and grapple with more real world problems. The proposed name change, and the implied shift in emphasis towards embracing empirical aspects of the mathematical sciences, makes sense both intellectually and as a survival strategy. I hope President Friedlander will reconsider his opposition to it.

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EMAIL NUMBER 279

I OPPOSE the proposed name change. I agree with Friedlander and the Member response. The funding sources and needs of the mathematical sciences research community are very different than those of the larger statistics community.

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EMAIL NUMBER 280

I think it's a very bad idea.

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EMAIL NUMBER 281

Since it is almost Halloween, I understand how timely this truly frightening letter of Dr Pantula's is. :)

In Dr. Pantula's first paragraph he suggests a "layperson (or policymaker)" might be the motivating proponent of the proposed name change. (I give him the benefit of the doubt, assuming that a Doctor of

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Statistics would know better). It makes sense that a policymaker would consider such a renaming as our nation has continually underfunded mathematical research thus creating overlapping generations of bureaucrats that do not understand the simple difference between "things with quantitative components" and "things of mathematical research."

I tried to write a few paragraphs, but decided bullet form might be more effective:

1. When I think of big-data, I think of industrial data analysis. In a "free market", it is not the job of government to supplement industrial R&D funding. Private industry can and will fund anything they perceive to give them an advantage. Didn't GAO just recently release a report about NSF funding overlap?

2. Changing the name to "Division of Mathematical and Statistical Sciences" should be viewed as a further eroding of the perceived significance/importance of mathematical research in our country.

3. Without guarantee of increased funding, sharing the existing "pot of money" with a larger (non-mathematical) group could prove devastating to the existing pennies that mathematical researchers receive. IF supporting mathematical research and education were truly an objective of this administration (and not just a sound-bite) THEN more funding would come without the need of "clever" name changes to snag more division dollars ( $P \rightarrow Q$ ). Unfortunately, by modus tollens ( $(P \rightarrow Q)$  and  $\sim Q$ )  $\rightarrow \sim P$ , supporting math research/education is not an objective of the administration. I doubt the administration (or the one in 2012) will funnel more \$\$ to the pot of money. It is all about the money, isn't it?

ok... so maybe #3 is kind-of a joke... but not really.

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EMAIL NUMBER 282

I am opposed to the suggestion for a name change to one that explicitly cites one branch of the mathematical sciences, i.e. "statistics". This suggestion seems to me to be motivated by some sort of political agenda and doesn't reflect the stature of statistics with respect to the other branches of applied mathematics.

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EMAIL NUMBER 283

I agree totally with the member response letter and the items 1 - 5 below.

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The current name clearly communicates a broad, inclusive interpretation. In particular, the current name is not Division of Mathematics. Indeed having members of our community engage in research and funding around large data sets is very important. If DMS were being merged with a separate Division of Statistical Sciences that had its own substantial resources, then a name change would be appropriate. "Encouraging community members to engage in new areas of research" should not be the criterion for changing the Division name.

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EMAIL NUMBER 284

I am completely opposed to the proposed name change of the NSF Division of Mathematical Sciences to the Division of Mathematical and Statistical Sciences.

I see no good reason to single out Statistics among the many scientific fields that have a mathematical component. This is one of the worst ideas I have heard in a long time.

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EMAIL NUMBER 285

I just learned from Eric Friedlander that the NSF is considering changing the name of the Division of Mathematical Sciences to the Division of Mathematical and Statistical Sciences. I believe this change reflects and would reinforce divisions between some statisticians and mathematicians working in other areas. These divisions already inhibit cooperation and collaboration across research specialties, and have a negative impact on progress toward scientific and educational goals shared across the community.

I hope the AMS will articulate these concerns to NSF for the mathematical community.

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EMAIL NUMBER 286

This looks like a power grab on the part of the statistics community. Statistics is a branch of mathematics (namely applied probability) and as such deserves no special recognition. What next, "Division of mathematical, computer and statistical sciences"?

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Many years ago, Dean Isaacson wrote a long and convoluted article in the Notices (I think) about why statistics departments needed to be created because statisticians were a "persecuted minority" inside a math department. This sounds like more of the same garbage.

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EMAIL NUMBER 287

I also oppose the change. The main reason is that Mathematicians and Statisticians have different systems of values, for this reason it will be difficult for them to be in the same division. My point of view is supported by the fact: Many of the departments of "Math and Stat" which I knew in the US recently split into "Dept of Math" and "Dept of Stat" for the reason mentioned above.

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EMAIL NUMBER 288

Let me go on record that I too join the chorus of those against such a name change not only for the 5 reasons listed, but I might add another: that the foundations of statistical inference are incoherent. While at NYU in 1970 I and a colleague tried to write some axioms for statistical inference away from the Bayesian and more "objective" if you like. That different statistical tests such Bayesian or maximum likelihood should yield different results points to a field "not quite ready for prime time." In addition even after many such courses, the apparent prevalence of students choosing the wrong test for a given situation means we have not yet worked out a good educational strategy. At least so I have heard. And I should add my active involvement in such questions ended long ago. But the reasons you have adduced here seem quite sufficient to reject this idea of such a name change.

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EMAIL NUMBER 289

I am currently the chair of math at Michigan State University. Before this I was a program officer at DMS under Peter March. I personally feel that the proposal by Sastry is reckless and divisive. Historically statistics has been part of mathematical sciences. Although many universities have separate statistics departments, statistics programs are still integrated into the department of mathematics in many other universities. While there are some strong reasons to have two separate departments, my observations have convinced me that politics and the division of resources are often at the center of the move for separation.

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By bring in the same petty politics into NSF Sastry has done a disservice to DMS and the mathematical community at large. I believe that DMS should in fact play a stronger role in bringing the two sides closer. The proposed name change will only further propagate the notion that statistics is not part of mathematical sciences, and deepen the divide.

DMS currently has a program in Statistics. It is one of the mega programs. I can understand that statistics is playing an increasingly important role in the digital era where large amounts of data must be analyzed and processed. One may argue that while there is a side of statistics that is highly mathematical and should be viewed as part of mathematical sciences, there is another part of it that is mostly driven by analyzing data using standardized techniques. That part is often more engineering or computer science than mathematical sciences. However, this part is well supported by NSF in other disciplines such as BIO, ENG and CISE, as well as many interdisciplinary program involving DMS (there are many of them. In fact, just about any such solicitations has a strong component for data analysis). The pure DMS support for statistics, in my view, should focus mostly on the statistical researches that have stronger mathematical flavor.

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EMAIL NUMBER 290

I am strongly against the name change. Statistics is but one subfield of mathematics. To single it out as an equal partner to the rest of mathematics strikes me as unproductive. One can make a similar argument for changing the name to the "Division of Mathematical Sciences and Analysis" or the "Division of Mathematical Sciences and Topology".

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EMAIL NUMBER 291

Having worked as a mathematician in both academia and industry, using lots of mathematics and some statistics, I certainly feel that the name "Mathematical Sciences" implicitly includes statistics as a subfield. On the other hand, it seems pretty clear from my current industry experience that data analysis is rapidly becoming a major, if not dominant, object of investigation and of interest from parties outside the field. Given that interest, I think that the proposed name change could very well help the DMS in the internal and external competition for resources at the NSF. If one takes a look at the organizational chart of divisions (<http://www.nsf.gov/staff/orglist.jsp>), it is clear that there are other divisions which could easily make a case for their involvement in 'big data' research. So, if the proposed change would enable DMS to defend and increase its share of resources for mathematical research, and do so without diluting research support for the mathematical sciences other

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than statistics, then I am for it, but note the strong conditional in bold. If, on the other hand, the result would be to push support for more researchers onto DMS without adding proportionately more resources, or if the result were to reallocate resources within DMS toward statistics and away from other mathematics, then I am opposed.

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EMAIL NUMBER 292

I agree with the proposed name change. Statistics is a basic science and this would encourage more statisticians to apply. Many statisticians do not apply because they do not believe that a Mathematics group at NSF would consider their types of applications seriously. This would help resolve this issue as well as solidify and recognize Statistics as a related but separate science from Mathematics.

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EMAIL NUMBER 293

I wanted you to be aware of the arguments being put forth by the American Mathematical Society regarding the proposed name change for DMS. Please see below, and attached.

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EMAIL NUMBER 294

I am a statistician but am opposed to the name change from "Division of Mathematical Sciences" to "Division of Mathematical and Statistical Sciences". There should be some place where the unity of the mathematical sciences is stressed.

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EMAIL NUMBER 295

First, I am concerned that misunderstanding of the nature and role of core mathematics, especially by funding agencies, might reverse some of the gains of the last century. This is a theme in my article "A revolution in mathematics? what really happened a century ago and why it matters today". This article will appear in the January AMS Notices, and is available from my web site <http://www.math.vt.edu/people/quinn>

Second, I object to being grouped with statistics. My experience, particularly trying to work with statisticians on educational outcome data, is that statistics is "intelligence-free data analysis". Routine use of statistics is far too much like dipping things in batter and deep-frying them: everything comes out looking the same, and often tasting the same as well. But it is easy and many people like the taste, so it would compete strongly for funding against more-disciplined areas.

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EMAIL NUMBER 296

I think changing the name of the Division of Mathematical Sciences by adding "and Statistical" is a terrible idea. "Mathematical sciences" already includes applied mathematics in its definition, in that it's not "Division of Pure Mathematics" or even Division of Mathematics." Certainly statistics is a mathematical science, but it doesn't deserve top billing over all others.

History is full of instances in which so-called "pure mathematics" has become applied mathematics. Just to give one example: number theory, once viewed as the "purest of the pure" now is at the heart of cryptography and hence of national security (as well as many other forms of security). Adjoining "and Statistical" would inevitably lead to a shift away from mathematics of the more theoretical sort and to an emphasis on immediate-action-driven subject areas. In time this would lead to a much slower development of fundamental new ideas.

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EMAIL NUMBER 297

I agree with the reasons outlined by Eric Friedlander against renaming DMS as Division of Mathematical and Statistical Sciences.

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EMAIL NUMBER 298

The proposal to change the name of DMS makes no sense on intellectual grounds. If the reason to change the name to one which reflects the breadth of the mathematical sciences, then the name should include all the major branches of mathematics: algebra, analysis, logic, geometry, mathematical statistics, etc., perhaps each branch followed by the percentage of proposals received. To single out one of the branches is invidious. On the other hand, the proposal makes sense if the goal is



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coerce the mathematics community into spending more time developing methods that will make it easier for the NSA and other security agencies can keep tabs on the population. If something like that is the goal, then the NSF should say so.

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EMAIL NUMBER 299

I agree that the name change is a bad idea. One, statistics is not a close cousin to mathematics like the new name would suggest. Two, this is likely to further defund (theoretical) mathematics research--the kind of research that has given us some of the best 20th century innovations, like the CT scan and the compression that makes cell phones possible. These things were not accomplished by applied mathematics, nor would they have existed, without fundamental discoveries in the mathematics. Three, statistics research is already well funded.

Please feel free to use my letter in any correspondence to the NSF.

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EMAIL NUMBER 300

I am opposed to the name change. The five points in your e-mail and the arguments in the member response make the case against a name change very well.

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EMAIL NUMBER 301

I oppose the name change for the DMS Division at NSF. The name Mathematical Sciences (note that it is plural) has a substantial tradition which conveys a comprehensive meaning. It includes in addition to core mathematics, applied and industrial mathematics, mathematics education, statistics, including the various sub-disciplines of statistics noted in the memo from DMS, substantial parts of operations research and risk analysis, and I would suggest theoretical portions of computer science. The comprehensive tradition rests in the first instance with the organization Conference Board of Mathematical Science incorporated in 1960 as an umbrella scientific organization on which the various sections of the mathematical sciences are represented. Likewise in the National Academy of Sciences, the Board of Mathematical Sciences (BMS) established in 1984 and subsequently changed its name to to the Board of Mathematical Sciences and its Applications (BMSA) now has a similar span. It is described as follows on its website "The Board

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consists of 19 members whose backgrounds represent the wide range of the mathematical sciences--core mathematics, applied mathematics, statistics, operations research, scientific computing, and financial and risk analysis. This composition of the Board reflects a deep conviction of the unity of the mathematical sciences in all their manifestations and of the importance of adding to both the knowledge in and the applicability of the mathematical sciences."

There is ample precedent for the comprehensive meaning for the mathematical sciences noted above. I reject the claim that statistics should no longer be considered a mathematical science. Indeed if statistics succeeds in splitting off like this, then what else would be next. The mathematical science as whole gain great strength from the fruitful interaction between the various parts of them, and fragmentation would correspondingly weaken the whole. One example of this is that the "data deluge" that is described poses many interesting problems in mathematics, some of which have already engaged the efforts of mathematicians, to the benefit of both mathematics and statistics.

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EMAIL NUMBER 302

I fully support the letter opposing the DMS name change.

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EMAIL NUMBER 303

I strongly oppose the name change. It is nice to hear the same sentiment from a leader in Statistics.

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EMAIL NUMBER 304

Well said. I agree 100%.

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EMAIL NUMBER 305

I oppose the name change for the DMS Division at NSF. The name Mathematical Sciences (note that it is plural) has a substantial

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EMAIL NUMBER 306

I strongly oppose the move that (DMS) be renamed the Division of Mathematical and Statistical Sciences.

Statistical investigation is an important aspect of mathematical research, but so are many other mathematical disciplines. The current name serves as an umbrella and is inclusive of all mathematical sciences. The rename would elevate one aspect of research investigation at the expense of all others.

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EMAIL NUMBER 307

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I agree with the following opinion of my colleague Calvin Moore.

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EMAIL NUMBER 308 same as email number 305

I oppose the name change for the DMS Division at NSF. The name Mathematical Sciences (note that it is plural) has a substantial tradition which conveys a comprehensive meaning. It includes in addition to core mathematics, applied and industrial mathematics, mathematics education, statistics, including the various sub-disciplines of statistics noted in the memo from DMS, substantial parts of operations research and risk analysis, and I would suggest theoretical portions of computer science. The comprehensive tradition rests in the first instance with the organization Conference Board of Mathematical Science incorporated in 1960 as an umbrella scientific organization on which the various sections of the mathematical sciences are represented. Likewise in the National Academy of Sciences, the Board of Mathematical Sciences (BMS) established in 1984 and subsequently changed its name to the Board of Mathematical Sciences and its Applications (BMSA) now has a similar span. It is described as follows on its website "The Board consists of 19 members whose backgrounds represent the wide range of the mathematical sciences--core mathematics, applied mathematics, statistics, operations research, scientific computing, and financial and risk analysis. This composition of the Board reflects a deep conviction of the unity of the mathematical sciences in all their manifestations and of the importance of adding to both the knowledge in and the applicability of the mathematical sciences."

There is ample precedent for the comprehensive meaning for the mathematical sciences noted above. I reject the claim that statistics should no longer be considered a mathematical science. Indeed if statistics succeeds in splitting off like this, then what else would be next? The mathematical science as whole gain great strength from the fruitful interaction between the various parts of them, and fragmentation would correspondingly weaken the whole. One example of this is that the "data deluge" that is described poses many interesting problems in mathematics, some of which have already engaged the efforts of mathematicians, to the benefit of both mathematics and statistics.

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EMAIL NUMBER 309

Please find attached the pdf file for "My reasons for opposing the proposed NSF DMS name change". This represents my input to the ongoing discussion on the proposed name change.

EMAIL NUMBER 310

I strongly oppose the name change. Both the email and the opposition attachment made a very strong case against the name change. Thank you for keeping members informed. I am very happy that AMS is taking an active part in this discussion.

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EMAIL NUMBER 311

As a former Division Director of DMS, (1993 and 1994), I also would argue against the proposed name change. In addition to all the reasons stated in the emails from Eric Friedlander, Nick Trefethen and Doug Arnold, the anonymous letter from an AMS member forwarded by Eric and those advanced by many other colleagues I have spoken to about this issue, I want to mention the following observations:

- 1) Like many mathematicians, I have also been involved in research, applications and teaching of statistical methodology. From personal experience, I have found it difficult to accept the argument that Statistics is not a mathematical science (which I have heard for years from many friends and colleagues in statistics).
  - 2) Times have changed from the days when statisticians (and applied mathematicians) were under-appreciated or marginalized within a big tent. Some statisticians are now comfortable being in a Mathematics Department without having "Statistics" in the department name.
  - 3) At the same time, I am comfortable having statisticians in a separate Statistics Department. So if statisticians still feel that they have different goals in, and approach to research funding, I have no problem with them advocating for a separate Division of Statistics so that they can be on their own.
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EMAIL NUMBER 312

In a letter I wrote yesterday to Ruth Williams, IMS President, asking for comments to be forwarded I took a different tack, namely

"Dear Ruth,

I am opposed to the name change. For quite a few years now I have told people that I am a statistical scientist - I apply statistics to science, in most cases (all?) using novel statistical methods.

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I am afraid that the new name will bring in proposals from a lot of people who do applied statistics (as opposed to statistical science), and there isn't a lot of funding to go around particularly to the young people. There are other places for the applied statistics people to find funding."

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EMAIL NUMBER 313

Based on a life time of experience in both applied and theoretical mathematics, I think the mission and name "NSF" should not change.

Especially in these days where the government will be looking for places to cut funding programs, it would be a mistake to expand the mission of the NSF.

In today's economy, an expansion would not certainly lead to funding cuts from the federal government. Moreover, because of an expanded mission, each of mathematics and statistics wings would receive less. So the "pot" is not only reduced, it is also "divided".

Based on my 17 years experience in government, I believe funding usually follows rules that tend to ignore the mission because of concern in government is not to take care of the "best" and "most important", rather the concern is treating everyone in a "fair" manner.

And we all know that the concept of "fair" means different things to different people.

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EMAIL NUMBER 314

I oppose the name change.

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EMAIL NUMBER 315

No, no, no... We need support for all branches; teaching, as well as, topology.

We should not stress any branch over all others.

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EMAIL NUMBER 316

Let me give you my view of the proposed name change. First of all, my early training was in pure mathematics, but I have spent much effort trying to apply my research to applied problems. In doing so, I have had many contacts and collaborations with people in Statistics, CS, Operations Research, Economics and Biology. Also I have felt the problems associated with submitting research proposals that crossed disciplines to NSF. I very much like the current setup, and think it is a big mistake to change the name so as to favor Statistics. Clearly we are in an era where we need to better understand how to extract meaning from truly massive data sets. The best efforts I have seen have involved teams of people from several disciplines in a mutual collaboration. Of course my involvement with DIMACS has exposed me to many such efforts. I would hate to see Statistics singled out for special consideration, and do not see how that could possibly enhance the available resources.

The above was just a quick gut reaction.

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EMAIL NUMBER 317

No, no, no...to change. We need support for all branches of mathematics and not stress just one.

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EMAIL NUMBER 318

I am against the name change to the Division of Mathematical and Statistical Sciences. Apart from the fact that DMS sponsors proposals in basic research with a strong math component (including those pertaining to mathematical statistics), the reason for not changing the name is financial: statistics proposals are relatively easier funded from industrial or governmental sources (apart from NSF itself) than math proposals. The competition on the math market is much tighter and the money is not so big.

The argument that the new name will help fighting for a bigger chunk of federal money is a little bit fallacious; by reversing this argument, we can see that the name change will encourage statistics applicants to send their proposals here, so the pool of money will become even more shrunk for mathematics proposals.

Thus, stay with the name as it is.

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EMAIL NUMBER 319

I as probably most of the AMS members oppose to such a name change. Any possible other name change includes "Mathematics and Finance", "Mathematics and Operations Research", "Mathematics and Biology", etc. So let's keep it with "Mathematics"!

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EMAIL NUMBER 320

I am strongly opposed to this proposed change of name.  
I agree wholeheartedly with these comments:

- 1.) The mission of the NSF is to fund basic research. Much of mission-oriented Statistics is funded by other federal agencies, hospitals, industry, etc. This name change suggests a move within DMS to relax its focus on basic research.
- 2.) The suggestion of "new resources to all core programs" is far different from any commitment to seek new resources to support the basic research of these programs.
- 3.) The current name (Division of Mathematical Sciences) was crafted to be inclusive. The inclusiveness of DMS has resulted in increased funding for many programs including Statistics. The Mathematical Sciences should work together, emphasizing commonality and presenting the best case for the importance of the Mathematical Sciences.
- 4.) Statistics is only one of 10 programs supported by DMS. In 2010, of the 2978 proposals submitted to DMS core programs, 242 were submitted to the Statistics program. It is natural to ask why Statistics appears to be uniquely selected by DMS for special emphasis.

Much of statistics is mission oriented and its practitioners are really interdisciplinary scientists. These researchers are rightfully supported by other agencies. That part of statistics which is core mathematics is funded by DMS along with many other fields. I find the proposal to make DMS a division of ``mathematics and statics''dumbfounding.

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EMAIL NUMBER 321

I agree completely that the name change is a BAD idea for all the reasons given.

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EMAIL NUMBER 322

I am strongly opposed to the name change. It formally declares that statistics is not a mathematical science while at the same time declaring it equal to the fields of pure and applied mathematics - which it is not.

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EMAIL NUMBER 323

I totally agree with Eric Friedlander's arguments against the name change. The name "Mathematical Sciences" already covers a lot of different disciplines including Mathematical Statistics. Joining it with rather loosely defined "Statistical Sciences" will just dilute much needed support for fundamental research in mathematics.

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EMAIL NUMBER 324

I am strongly opposed to the proposed name change. In addition to the reasons mentioned in the email I received, I would add the following.

1. I always thought that the name mathematical sciences was inclusive of statistics.
2. I have no doubt that analyzing large data sets is important. However fashions in science come and go. A name change that is mostly justified by wishing to fund a specific application, seems to me to be a big mistake.

Put money into a subject if it is important, but do not do something as consequential as renaming a program because of it.

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EMAIL NUMBER 325

This is a terrible idea. It opens the gates too broadly to areas unrecognizable as mathematics, and has the potential (indeed, almost seems designed) to reduce support of the mathematics sciences, including the mathematical areas of statistics.

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EMAIL NUMBER 326

I am opposed to the name change. It is totally superfluous. Statistics is a mathematical science and so is already included, if they want to be. There are many other mathematical sciences. Do they all want to be named, too? This can easily get pretty silly.

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EMAIL NUMBER 327

I would like to add my dismay at the proposed name change for the division of mathematical sciences. The DMS has supported the mathematical aspects of a number of different disciplines and shared support of appropriate projects with other divisions. As Dr. Pantula says

"The progression and culture of statistics do not justify its being viewed as one of the mathematical sciences."

To combine two different disciplines into one division doesn't make sense. Computer Science has many overlaps with mathematics as do physics and biology, but they have separate divisions. Perhaps Dr. Pantula should work for a separate division for statistics. Then there could be joint funding between the two divisions for the more mathematically oriented projects.

In any event, changing the name to include "statistical sciences" as a separate and presumably equal part of the division would certainly be detrimental to the much broader scope of the mathematical sciences, to wit, analysis, geometry, topology, algebra, logic, number theory, mathematical physics, mathematical biology, etc, etc.

In sum, this is a terrible idea.

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EMAIL NUMBER 328

The name change proposed for the NSF mathematical sciences division will definitely make it harder to get funding for more fundamental research, which should be NSF's priority, so I strongly oppose this action.

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EMAIL NUMBER 329

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I think it is a great idea to change the name of the NSF Division of Mathematical Sciences (DMS) to the Division of Mathematical and Statistical Sciences.  
Thank you!

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EMAIL NUMBER 330

Instead of trying to rephrase the statement in my own words, I find that the "member response" attached to the original email expresses very well my opinion, and arguments about the DMS name change. You would know better whether this is politically expedient, but if this letter is posted online, I would be fully willing to sign it, quite openly, and I am sure many other members of the community would do the same. The only point I would add is point (4) of the original email, addressing the relative size of mathematical statistics within mathematics.

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EMAIL NUMBER 331

The proposed name change would be a big mistake. The DMS should support research activities in all of the mathematical sciences, broadly construed, including the mathematical aspects of statistics. There are other federal agencies that should (and I believe do) support other parts of statistics. The current name is a much better descriptor of this view of the division than the proposed name is.

I find it troubling that that the current director of DMS, who is a statistician, would choose to use his position to enhance his own field within NSF at the expense (I believe) of the other mathematical sciences. His responsibility is to support all of the mathematical sciences.

(I have been supported by DMS grants for about 40 years.)

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EMAIL NUMBER 332

I am opposed to the idea.  
To begin with, the term 'Mathematical Sciences' includes Statistics, Applied Mathematics etc.  
And second, I do not see a good reasoning for singling out just one of the applied mathematics areas (if this, why not the others?)

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If we do this, will the renaming the Mathematical Reviews to Mathematical and Statistical Reviews follow?

If we are to change anything, 'Mathematics and Mathematics Related Sciences' sounds much better.

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EMAIL NUMBER 333

Completely unnecessary and destructive. Sounds like some senator hates math.

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EMAIL NUMBER 334

I agree with the statement and concerns expressed by the AMS president: Why is this being proposed? Only the NSF supports basic research.

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EMAIL NUMBER 335

I feel that it should not be changed as Statistics is a separate field. And should continue to be treated as such. I also feel that it will compromise funding for the Mathematical Sciences in the AMS.

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EMAIL NUMBER 336

I read with profound worry the proposed name change for the current Division of Mathematical Sciences. I was under the impression that all branches of mathematical research were equal, but this proposed name change has a whiff of an Orwellian ``but some branches are more equal than others''.

The new name will change the social perception (read Congress perception) of the purpose of this division of the NSF. The practical effect of this will be an ``equitable'' partition of resources between Mathematical Sciences and Statistics with damaging consequences to the mathematical community and research.

If anybody doubts of the plausibility of this scenario I would point him or her to the recent troubling events from UK. In that case, the ``equitable'' partition of resources took the form of a skewed allocation of postdoctoral positions, with a complete bias towards statistics. This prompted a public reaction from the British mathematical community that took the form of an open letter to the Prime Minister (for details see this recent article from The Guardian <<http://www.guardian.co.uk/science/2011/sep/20/mathematicians-uk-maths-funding-cuts>>)

The fact that the British mathematical community had a public reaction is a telling fact in itself because we mathematicians tend to not get involved, even when our interests are at stake. I think that the American Mathematical Society ought to state clearly and publicly its position on this issue and I sincerely hope that the AMS will oppose such a name change.

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EMAIL NUMBER 337

I am opposed to this change in name.

I believe that theoretical statistical sciences has long been a part of mathematical sciences and as such is part of the Division of Mathematical Sciences at NSF. The very mention of mathematical and statistical sciences implies that statistics is not a part of mathematics, which is absurd.

So we must look for other reasons for the name change. Is someone or some area trying to emphasize the importance of their own area so that they will be able to grab a larger share of the funding pie? If so, we should all squash the effort. The review process in place can react to areas which the general mathematics profession feels is important for the future of the profession and the country. Should we change the directorate name every time a new area is deemed vital to the future of our profession? This is a dreadful idea. Is it an attempt to shift resources away from basic research and towards applied or computational research? If so, let's be open about the purpose and discuss it as a profession.

Any move to divide the profession must be avoided, especially at this time of shrinking budgets. Please add my name to the list of mathematicians who are opposed to the name change.

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EMAIL NUMBER 338

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I strongly oppose the suggestion that NSF's Division of Mathematical Sciences (DMS) be renamed the Division of Mathematical and Statistical Sciences. I agree with all the reasons given (in the AMS President's e-mail of October 11) against this proposal.

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EMAIL NUMBER 339

In my view change of the name is not a good idea. From one point of view it seems to indicate that Statistics is a separate discipline from Mathematics which may or may not be beneficial for Statistics. On the other hand, it attempts to put Mathematics and Statistics on equal footing which does not correspond to the real significance of both disciplines for the human society. The role of Mathematics (both Pure and Applied) is much higher in this respect.

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EMAIL NUMBER 340

I am opposed to the proposal to change the name of the NSF Division of Mathematical Sciences to the Division of Mathematical and Statistical Sciences. As has already been mentioned, "Mathematical Sciences" includes statistics and so the new name would be redundant.

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EMAIL NUMBER 341

I would argue to keep the name unchanged.

Statistics is an integral part of mathematics. To explicitly show the names implies that some form of applying statistical methods and software without mathematical understanding is a separate and valuable activity to support. This is not the case. If anything the statistical methods in use in most research needs improvement in rigor and quality, not less.

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EMAIL NUMBER 342

I also strongly oppose this name change.

EMAIL NUMBER 343

I think mathematical sciences should include statistical sciences as it always had, as opposed to the physical and biological sciences. Computer science is now really a part of engineering, although some parts of abstract computer science are certainly mathematical in nature. If the issue is large data-bases, then that part could perhaps be a part of computer science, as it is the computer science type algorithms which govern the management of large data bases. I recall when information science and technology became an independent part of the NSF program setup (this was created by my good friend Howard Resnikoff), and this involved aspects of library science and engineering, among others at the time. This was a natural evolution for the NSF (not without its bumps in the road at the time).

But the mission of mathematical sciences should not be diluted or changed, only enhanced.

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EMAIL NUMBER 344

Comments on the proposal that NSF's Division of Mathematical Sciences be renamed the Division of Mathematical and Statistical Sciences:

I can add little to the very strong arguments that have already been put forward in opposition to the proposed name change, but here is my personal take on it. Mathematics and statistics have some significant overlaps, as do mathematics and physics, but they are very different fields. The proposed renaming can only be interpreted as a declaration that research in mathematics is to receive less funding. If that is the intent of the proposal, one should have the courage to propose the cuts directly and give the reasons why they are considered necessary. If not, then it simply seems misguided and pointless.

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EMAIL NUMBER 345

Thank you for asking for input on this important question. I have read several letters addressing the issue.

I am against the proposal to change the name of the NSF Division of Mathematical Sciences (DMS) to the Division of Mathematical and Statistical Sciences. I will be brief. Statistics is an important field,

and is growing very quickly at this time, both in theoretical scope and in its applications. Individuals in very many other fields, from the sciences to the social sciences, to the newer connections with humanities (e.g., statistical analyses of texts), are finding statistics meaningful. I appreciate statistics' role, and encourage all students to study a healthy dose of applied statistics.

My concern with such a name change has primarily to do with how funding to the new division would work. There are many statisticians doing great work, and much data-driven work requires substantial funding (this work often requires funds in a way that traditional mathematical research does not -- large scale computational ability, access to data, etc.). This work is critical to our understanding of the economy, public health issues, resource sciences, to name a few, and therefore focuses on critical problems of the moment. It would not be far-fetched to imagine a large portion of current DMS funds to go to such work, leaving basic mathematics the poorer sibling. As a secondary concern, people outside of our fields might come to view math and statistics as inseparable, and perhaps rightly view statistics as the more prominent field of the two. These two concerns -- funding for research and the view of the fields from outside (general public) -- cause me to be against the name change. I have heard another argument against it; some mathematicians do not value statistics on philosophical grounds. This argument I do not agree with; data driven statistics is an important field, and will drive many advances in medicine, sciences and social sciences over the coming years.

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EMAIL NUMBER 346

NSF already has a program on (applied) statistics in another division, namely,

Methodology, Measurement, and Statistics (MMS)  
Social & Economic Sciences (SES)

Moreover, many of the areas mentioned in Dr. Pantula's letter, such as "data mining" and "analyzing, communicating, and storing information" are already supported through programs in computer science (CISE) and engineering (EECS).

And there are, no doubt, many grants doing statistics-related research supported by other programs.

So what is really being proposed here?

It seems neither realistic nor desirable to move of all these programs and associated funding into what is now DMS. That would be viewed as a potential power grab which would be detrimental to most of mathematics.



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One might argue that instead of including DMS as a single division under MPS, one should have a section of NSF on "Mathematical Sciences" which would include divisions on "statistics", "pure mathematics", "applied mathematics", "information theory" etc. However, this would require a major re-organization of NSF; not just a name change.

Why does Dr. Pantula expect the new resources to benefit all core programs, and do not envision reducing funding for core areas of mathematics and statistics.

At best, this seems a proposal which will leave other areas of mathematics at level funding, while reducing their visibility and proportion of funding within DMS.

As a mathematical physicist, I have often had joint funding with programs in physics and my recent work in quantum information theory is now funded entirely by CCF instead of mathematics. There is a growth in interdisciplinary work in mathematical biology. No mention is made in Dr. Pantula's letter of the fact that most funding for work in the highly mathematical area of information theory is outside of DMS. Why not bring that into the fold??

There are many reasons for increased funding of mathematics research, particularly interdisciplinary areas. What I see is a statistician trying to increasing funding for statistics without looking at the broader picture involving many other areas of mathematics.

Finally, I have to ask why, as someone who has been PI on some type of grant at least partially supported by DMS from 1987-2011 received a letter about the suggested name change from the President of the AMS, instead of a "Dear Colleague" letter from Dr. Pantula.

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EMAIL NUMBER 347

I write in support of Prof. Eric Friedlander's position against the proposed name change of the NSF Division of Mathematical Sciences. NSF grants to our mathematical colleagues have always been modest relative to those to physical sciences and engineering, and I share the concern that this already meager support for basic mathematical science will be diminished further by pressures to support more applied work. I see no reason why NSF support for statistics cannot be subsumed in fields such as bioinformatics or systems and communication theory.

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EMAIL NUMBER 348

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We started trying this out for the Division of Mathematics (and Statistics) of the MS Academy of Sciences back in the late 1980s. It has worked well during the annual conventions (I was chairman of the joint division 5 times) giving the division more strength in terms of both the number of abstract submissions and interest generated in different areas of research.(in my opinion because of its inclusiveness to different disciplines). However, during the 1990s and 2000-2010 period we did feel the need to discuss it and vote at least twice during the period whether to continue this approach. Each time we voted to continue this approach.

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EMAIL NUMBER 349

I am writing to express my strong preference that the DMS retain its name. The current name contains the locution "Mathematical Sciences", which is standard in contexts where a broad view of mathematics is indicated. Consider, for example, the name "Mathematical Sciences Research Institute" and opening of the mission statement of the most prominent mathematics institute in this country: "The Mathematical Sciences Research Institute (MSRI) is dedicated to the advancement and communication of fundamental knowledge in mathematics and the mathematical sciences..."

In particular, "mathematical sciences" includes statistics. Why the proposed change to explicitly include statistics in the name? There is no reason for a name change if there is not a change of mission. The current mission statement begins: "The Division of Mathematical Sciences (DMS) supports a wide range of projects aimed at developing and exploring the properties and applications of mathematical structures..." The question to ask is: What is not covered by "properties and applications of mathematical structures" that is the motivation for this proposed change?

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EMAIL NUMBER 350

In addition to the issues mentioned in President Friedlander's e-mail, it is entirely inappropriate that the immediate past president of the American Statistical Association becomes DMS director and immediately tries to elevate his own discipline by having statistics--alone among the 10 subdivisions of mathematical sciences supported by DMS--appear in the name of the division. This seems to be a clear conflict of interest, no different than if Philippe Tondeur (for example) tried to include differential geometry in the name of DMS.

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EMAIL NUMBER 351

I initiated an online discussion of this issue among my Berkeley colleagues, especially inquiring of the many Math/Stat joint appointment people. It seems that there is strong support for the "no name change" position among many mathematical statisticians; it seems to me that such support from the statistics community could be very effective as part of a campaign to oppose the name change.

Of course, I am personally opposed to the change. It seems to me that "Mathematical Sciences" is already broad enough. What is important is to assure that the funding for basic mathematics is not impacted by moves to support research into the handling of "big data".

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EMAIL NUMBER 352

I am writing to echo the opposition to a name change for DMS at NSF. In short, my most serious concern is that this will cause the focus to move away from basic research -- in both pure and applied mathematics.

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EMAIL NUMBER 353

I respectfully disagree with the analysis in Dr. Pantula's letter proposing to rename the Division of Mathematical Sciences. The current name DMS is deliberately NOT the Division of MathematicS, but is designed to include all the mathematical sciences. Aside from the Statistics Program, which covers all the mathematical aspects of statistics, DMS currently includes two programs with a clear "applied" bent, Applied Mathematics and Mathematical Biology. In addition, almost all the other programs in DMS include some sort of applications. Just as an example one might not immediately think of, the Topology program now includes work on use of topology in the analysis of "big data". To the extent that Dr. Pantula is right and "the progression and the culture of statistics do not justify its being viewed as one of the mathematical sciences", this sort of non-mathematical applied statistics belongs elsewhere. I think the current mandate of DMS is broad enough to position us well for the future, whereas a merger of DMS with non-mathematical applied statistics will inevitably create tensions within the Division due to the attempt to fuse what Dr. Pantula admits are two separate scientific cultures.

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EMAIL NUMBER 354

Here are my views on the proposed NSF division name change from DMS to Division of Mathematical and Statistical Sciences.

At first blush, I thought a name change would be trivial; after all, many academic departments of mathematical sciences are titled Department of Mathematics and Statistics. However, these names were created to include statistics in a Department of Mathematics, not to include statistics in a Department of Mathematical Sciences where it is already included.

My suspicion is that the current DMS Division Director is trying to make a move that will be politically and materially advantageous to his own field (statistics) at the expense of the rest of DMS (pure and applied mathematics).

All of the mathematical sciences are underfunded. In the present budget climate, increased funding for one mathematical science really means decreased funding for other mathematical sciences. Unless a case can be made that statistics has a comparatively deeper need for funding than the other mathematical sciences, it should not be trying to grab a larger piece of the (finite) pie. Even if this were true---which does not seem to be indicated by the datum of less than 10% of DMS proposals emanating from statistics---it could be dealt with within DMS rather than by renaming the division.

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EMAIL NUMBER 355

After reading the "particularly cogent response from a member of the AMS leadership" forwarded by Eric Friedlander, I realized that that leader had already said the most important things I have to say on the subject, and better than I would have said them myself. So I would just like to strongly second the contents of that response.

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EMAIL NUMBER 356

(Vacation message or similar non-response)

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EMAIL NUMBER 357

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I totally against the proposed name change at NSF. It shows the misunderstanding of what mathematics is (and what statistics is, for that matter) of the current Division director of the DMS. This name change can only weaken mathematics on the whole, and will not promote statistics, as one may wish. Statistics is a very important part of mathematics, but they are not equal. For years, the statisticians tried to convinced the math education community to adopt statistics as part of the core math education. They succeeded. So, my son in the first grade, before he can really read, hardly can add, he has to "learn" to read bar graph and the tally chart. There is something call basics, there is something called applications of the basics. These two things should not be confused. When they are, I will end up teaching students in college who has to do 1 minus 4 by a calculator, or cannot do division or add factions. If the current DD of DMS cannot distinguish what is fundamental and what is not, he should not be the division director at DMS.

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EMAIL NUMBER 358

I strongly support the name change to the Division of Mathematical and Statistical Sciences.

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EMAIL NUMBER 359

If statistics isn't a mathematical science, what is it? The name change is ridiculous.

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EMAIL NUMBER 360

I strongly oppose the name change proposed by NSF. I completely share the point of view expressed in your letter.

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EMAIL NUMBER 361

Dr. Sastry Pantula proposes to change the name of the NSF "Division of Mathematical Sciences" (DMS) to "Division of Mathematical and Statistical

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Sciences" (MSS). I strongly urge the American Mathematical Society (AMS) to oppose this proposal.

Disclosure: I am a professional applied mathematician and former DMS Program Director with more than six years of experience in the DMS Applied Mathematics and Computational Mathematics programs.

The proposed name change suggests that statistics is not a mathematical science. This may be the opinion of some in the statistics community, but Dr. Pantula does not provide evidence that this opinion is shared by all or many in the statistics community. Statistics shares the language of mathematics with the other areas of the mathematical sciences, has made significant contributions to the body of mathematical knowledge and is, in my opinion, an integral component of the mathematical sciences.

The NSF Division of Mathematical Sciences, under the leadership of its previous directors, has been very successful in presenting the image of mathematics and statistics as partners in the search for new knowledge. The coming "data deluge" is a challenge for all programs in DMS, not only for Statistics. In fact, it offers one more opportunity to demonstrate the universality of mathematics and the broad applicability of mathematical ideas. The proposed name change points to a (non-existent) dichotomy and damages the image of inclusiveness. Notice that the NSF recognizes the inclusive nature of the mathematical sciences in the title of its Directorate for "Mathematical and Physical Sciences" (MPS).

I am afraid that the proposal to change from DMS to MSS does not do justice to the many other activities that currently take place under the umbrella of "Mathematical Sciences." It will lead to confusion and recrimination, the last thing we need while the budget for basic science is under pressure.

I strongly support the suggestion to look for new sources of funding for DMS; after all, a healthy budget is one of the primary responsibilities of the Division Director. But the best way to accomplish this is by pointing to success stories, not by changing a label.

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EMAIL NUMBER 362

An exciting feature of modern mathematics is the growing fields of application, from cryptography now an advanced topic, to that of topological methods in data analysis, to a new theory of information.

The current term includes all of these, as well as statistics. The DMS should certainly support all of these advances, and it does. One would also expect them to be supported by other divisions as well.

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In light of these new developments, and the ones to come, the wisdom of making a name change doesn't seem so clear.

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EMAIL NUMBER 363

I would like to argue against the proposed name change of the Division of Mathematical Sciences (DMS) to the Division of Mathematical and Statistical Sciences. Mathematical statistics is a small part of mathematics. The whole of statistics, on the other hand, is a massive field. I believe the suggested change is more than just a name change. It would drown out significant amounts of mathematical funding in place of statistical funding. Both fields are important, but they operate on significantly different scales. Statistics, for the most part, is 1) big short term impact, less long term impact, 2) more expensive projects, 3) a huge field. Mathematics, for the most part, is 1) less short term impact, big long term impact, 2) less expensive projects, 3) a small field.

Incorporating Statistics funding into the same pool as Mathematics would likely severely diminish this country's ability to continue to successfully pursue the top quality of mathematical research it has been able to produce for decades. With funding drying up from other public and private sources, the NSF's role has become even more crucial. This change would be severe blow.

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EMAIL NUMBER 364

I want to add my voice to the others opposed to adding the word Statistics to the name of the DMS at NSF.

At the very base of it, we have not been given any sufficiently strong reason to make the change of name. And it seems that this change of name could, over time, result in a significant change of mission for DMS.

A mission where roughly half of all funding went to statistics in its various forms and only the remaining half remained in the mathematical sciences broadly speaking. One actually is led to wonder how this outcome could be avoided at a government institution officially labeled the Division of Mathematical and Statistical Sciences? What would be the natural arguments to be made against statisticians pushing for funding to migrate in their direction? What would happen when the first time the director of the new DMSS was a statistician more interested in applications than in connections to mathematics? This seems like a big step out onto a slippery slope.

That said I am strongly in favor of DMS vigorously pursuing additional funding opportunities that might result from the study of large data sets. But there is plenty of mathematics on large data sets

and compression that is closer to computer science than to statistics. Some of this mathematics had its origin in the geometric theory of Banach spaces, not in some putatively applied field. This seems to me to illustrate a continued need for more emphasis on basic research. I hope the director will take advantage of this opportunity to make a case to NSF and Congress that basic research can and does eventually and dramatically impact more directed and applied research.

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EMAIL NUMBER 365

I am opposed to the suggested name change.

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EMAIL NUMBER 366

If you look up Sastry Pantula, current head of DMS, in MathSciNet, you see that he has almost no profile in mathematics. He has published 27 papers, almost all before 2000. They are all in probability and statistics. They have attracted a total of 28 citations. This raises the question, what is this guy doing as head of DMS? It is either a mistake, or part of a plan. If the latter, changing the name must be his main mission, what he was hired to do. I hope this is too paranoid, but the committee should consider it, because if this is the situation no amount of polite reasoning, no matter how cogent, will have an effect. On the other hand, if Pantula's choice as head of DMS is just some mistake, it is a mistake of an order that is very worrisome.

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EMAIL NUMBER 367

In response to your recent email concerning the proposed name change of the NSF Division of Mathematical Sciences, I would like to offer the following considerations:

My Ph.D. many years ago at UCLA was in Mathematics and Statistics. I might therefore be expected to support such a change. Yet I strongly oppose it. The change appears politically motivated, both from the current administration stress on such buzzwords as "innovation," "sustainability," and "climate change" (a euphemism for the corrupt and unscientific "global warming" promotion (Note 1)) and by Pantula's messianic obsession that Statistics constitutes the only valid approach to the problem of "Big Data." He may be expert in multivariate analysis and time series, but these fields fall far short of explaining the



internal complexity of large data sets which all too often are structured by large-scale measurement errors. Nor would they impart the key to scientific discovery as he states. More often this follows from a theoretical prediction that is tested by appropriate sampling at a much reduced scale from the full dataset. One would think that a professional statistician would know how a good sampling plan simplifies matters and how group theory might be involved. Pantula lays heavy stress on applied Statistics but apparently sees little virtue in Mathematical Statistics.

There are many other fields of mathematics that are appropriate to this context. As Marston Morse put it way back in 1934--

Any problem which is nonlinear in character, which involves more than one coordinate system or more than one variable, or whose structure is initially defined in the large, is likely to require considerations of topology and group theory in order to arrive at its meaning and solution. In the solution of such problems classical analysis will frequently appear as an instrument in the small, integrated over the whole problem with the aid of group theory or topology.

In current terms, this would extend to Algebraic, Differential, and Combinatorial Topology and to Algebraic Geometry with its homology and cohomology. AMS has recently published a volume Computational Topology by Edelsbrunner and Harter that offers an entirely different approach to the problem of large datasets and insight into their structure (Note 2). In his obsession with Statistics as the sole approach, Pantula appears unaware of these fields and their import and falls into the trap of the Blind Men and the Elephant. A brief consideration of Attachment 1, The Mathematical Atlas: A Gateway to Modern Mathematics, [<http://www.math-atlas.org/welcome.html>] should convince an unbiased observer that the preponderance of Mathematics overwhelms Statistics. Admittedly, there is more to Statistics than two yellow blobs, but certainly the preponderance does belong to Modern Mathematics. In the following Index Pages (Attachments 2 and 3). brought up by clicking [Browse] at the lower left of the first page, a glance at the 97 MSC subject areas should make even Pantula's "layman (or a policy maker)" think that there is more to Mathematical Sciences in the "Age of Information" than "Computer Science, 'Mathematics,' and Statistics." On the INDEX page, the heading "Broad subdivisions of Mathematics" is split in two: "Core Branches..." and "Applied and related areas." The latter consists not just of Probability and Statistics" but three other equally important fields of even greater proliferation. Why does Pantula ignore these? Is it simply ambitious and biased promotion?

"A compromise can put an end to the most perplexing of situations." We have seen a trend in recent decades for Mathematics Departments to be renamed Mathematical Sciences Departments rather than see Statistics or Applied Mathematics split-offs. That has already occurred with the NSF appellation. It has served our profession, our country, and our times, well. Rather than undergo professional schizophrenai for the sake of some postulated change in the very nature of things, perhaps it would seem preferable to keep our several working identities serving as well as ever in one cooperative, balanced, and realistic organization and let the politics be damned.

EMAIL NUMBER 368

I agree with the reasoning provided below.

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EMAIL NUMBER 369

I agree with your position expressed in your letter and I do not agree with the proposed name change. Statistics is mathematics then it is part of the mathematical science family. Yes, statistics is a large field in which many individuals are working but it is not a "science" by itself like mathematics, chemistry or physics. The suggested title change makes "Statistics" appears as a "new science" and it is not case. Also, if NSF were to go ahead with the name change and if in few years Topology for example, become a very active area of mathematics like Statistics is now, are we going to see a title change as follows: NSF's Division of Mathematics, Topology and Statistics? Now if the next very active area is Algebraic Number Theory are we going to see a title change again? Let us not have this happen.

Also, the current title is simple and all inclusive. Instead of changing a title that works, the NSF should perhaps put its energy in trying to find a way to fund as many mathematicians as possible at a reasonable funding level like it is done with some success in Canada.

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EMAIL NUMBER 370

I do not approve of the suggested name change. I think that "pure" mathematics should remain distinct from applied math as well as statistics.

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EMAIL NUMBER 371

The name change seems ill conceived to me. In light of the situation with funding in England where statistics seems to have grabbed at the moment

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ALL of the postdoc funding in the mathematical sciences I feel it's important to fight this.

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EMAIL NUMBER 372

It is clear from Director Pantula's letter---indeed, he makes it completely explicit---that he does not envision merely a name change, but rather a wholesale re-direction of DMS into a division of \*both\* mathematical sciences and large parts of statistics that do not fit under the existing broad umbrella of "mathematical sciences." It seems to me highly misleading to suggest that what he goes on to describe in his letter is only a name change. I very much doubt that a director who came from a different part of the field would view it the way Director Pantula evidently does.

Director Pantula's argument for the change is that there will be, in future, a large pot of money available for data analysis; and that DMS cannot adequately compete for that pot of money without bringing non-mathematical statistics under the DMS umbrella. It seems to me that Director Pantula is tacitly suggesting that mathematical scientists, or those who represent their interests in Washington, are unable to make a compelling case (either alone or in collaboration with partners in other disciplines) that an appropriate part of those funds should be directed toward DMS.

I can see two major reasons why that might be so. One of these is that mathematics does not \*have\* a compelling case for those funds. That seems very unlikely to me, but then the suggestion that we should try to make a case by bringing in non-mathematical work under the DMS umbrella seems utterly ill-advised. The other reason is that mathematics does have a compelling case, but those representing mathematical sciences in Washington cannot possibly make that case on the merits. In either case, Director Pantula's recommendation seriously undermines his own leadership position.

It seems to me that Director Pantula cannot effectively carry out the job of director of DMS if he lacks both the ability to persuasively make the case for research in the mathematical sciences and the confidence of the mathematical research community. If that is the case, the AMS ought to be calling for his resignation.

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EMAIL NUMBER 373

I am very much against the proposed DMS name change.

EMAIL NUMBER 374

I find this proposal worrying. I agree with most of the reasons that have been given by others in forums, websites, etc. I consider that adding statistics to the DMS would hurt those who do more abstract, less applied, mathematics. In recent years there has been a push for multidisciplinary and applied mathematics, not only by NSF, but by the community in general. Well, not everybody is interested in such things (not that there is anything wrong with it), some of us are in this for the love of mathematics, and not care much for other areas (I guess I am a little old style on this point).

What I see happening now, if a change of name and focus was made at DMS, is that there will be even more isolation for those who don't want, or can't, apply their areas of work to other sciences.

This is my two cents; I hope things end up OK.

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EMAIL NUMBER 375

I oppose the change in name. It would elevate the "Statistical Sciences" to a status as the equal of all the rest of the mathematical sciences as a group, rather than as the equal of other major divisions of Mathematics (e.g.: analysis, geometry, number theory ...).

Obviously an apportionment has to be made, within each budget process, among the various sub-divisions regardless of the name. The name should not be used to modify the balance in making the apportionments. If someone has a problem with the apportionment process, they should address that rather than the name.

[In case it is useful in evaluating comments: I have not done any work in research mathematics since I completed my PhD work at Brown U in 1971. The Navy sent me to graduate school, and I resumed Navy duties in 1971. The last 10 years before mandatory retirement from the Navy (1985-1995) my work involved the acquisition of Navy ships and systems in Arlington VA, including almost 7 years as an Acquisition Program Manager - deeply involved in the preparation and defense of Navy budgets. I believe the NSF process is fundamentally the same as that in DoD, and that is the basis of my comments. My "second career" was as a pension actuary - still dealing with government regulations, but not budgets.]

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EMAIL NUMBER 376

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The proposed new name sounds as dumb to me as, "The western states of the USA and Oregon."

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EMAIL NUMBER 377

I think this proposed name-change for DMS has not been well thought out and would likely have very damaging long-term ramifications. It seems likely that basic research in mathematics would be starved of funding, which is not just a problem for mathematicians, but e.g. for (1) national security, given how critical mathematics is e.g. to NSA, including having a healthy math community in which new talent is continually being developed, and (2) all sorts of other areas of science which have mathematics as their backbone.

It seems possible to me that the non-mathematical parts of statistics do warrant more funding from NSF, though I am not an expert on this. However, in that case I think the appropriate solution would be to fund non-mathematical parts of statistics from other parts of NSF. Trying to squeeze two critical areas into one will only starve them both.

I've served on NSF panels for postdocs in multiple years and have been impressed at how well a general mathematical panel functions. I cannot imagine a panel with two completely different disciplines; I doubt that issues like this have been carefully considered yet. Changing the role of statistics at NSF would be a big deal. Any such change should be carefully thought out in advance, planning for all the ramifications as much as possible -- this is the way to implement a good plan, not just the one the program director believed he could politically maneuver to make happen. I really hope this short-sighted move can be stopped.

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EMAIL NUMBER 378

In the 1960's, a scruffy Statistics building sat well apart from venerable Math Corner in the Stanford University Quad. Instruction in stat was, and still is, too much in the possession of the social sciences. In the 21st century, let's have Math regard Stat as sister, rather than cousin.

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EMAIL NUMBER 379

The rationale given for the fusion of Statistical Sciences into the Division of Mathematical Sciences is solely to increase the resources available to the Division due to the growing interest and capabilities in high throughput data in diverse disciplines. But linking Statistics to Mathematics in order to get more resources for mathematics is not really honest. And indeed it may even lessen the resources for mathematics.

This proposed change in the purview of the Division of Mathematical Sciences parallels developments in the boundaries of biological sciences over the past 30 years. The advent of molecular techniques caused a tremendous growth in interest and resources for molecular biology. In many biology departments, the consequence was that the priorities for departmental resources became completely dominated by molecular research, and whole-organism, evolution, ecology, and theoretical studies had to fight to maintain their resources and intra-departmental influence. Evolution finally received a reprieve in the post-genome era because phylogenetic techniques helped to analyze function in whole-genome databases.

As a response to the rise of "molecular monoculture" in biology departments, some universities actually split-off ecology and evolution departments. Others took a reverse strategy.

If the Director wishes to increase the amount of resources for mathematics research, they should do it on its own merits, not by creating a bureaucratic hybrid that may end up submerging the intrinsic values of mathematics research.

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EMAIL NUMBER 380

I strongly oppose the proposed NSF name change from the current Division of Mathematical Sciences; to Division of Mathematical and Statistical Sciences. Should you need further information, please let me know.

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EMAIL NUMBER 381

Professor Friedlander makes a very strong case for not making a name change in the DMS and I agree with him. I am opposed to making such a name change that would unfairly highlight one of the ten programs supported by DMS at the expense of the other nine without some very compelling reason, and Professor Pantula's rationale falls short of compelling in my mind.

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EMAIL NUMBER 382

I write as a member of AWM (I am also in IMS and ASA). I am strongly in favor of the name change. It will give the discipline of statistics the recognition it deserves and also recognize the evolution of mathematics into two separate disciplines. I attended a session at the International Statistics Institute on the future of mathematical statistics and to my surprise and delight, the premise of the session was that mathematical statistics will be motivated by applied problems.

The name change at NSF recognizes that statistics is no longer merely theorem-proof-theorem-proof, i.e., no longer a subdiscipline of mathematics. I also think the name change will be interpreted as welcoming of grant applications from statisticians, whereas DMS does not make that welcome clear.

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EMAIL NUMBER 383

I think the proposed DMS name change is a bad idea. It portends a funding shift by the NSF that could be very negative for basic research, not only in mathematics but also in statistics. The words Mathematical Sciences include the type of basic research in statistics that comes under the purview of the NSF's mandate to support basic research. Hence the proposed name change is unwise and undesirable.

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EMAIL NUMBER 384

I am writing to also express my opposition to the proposed name change of the DMS at NSF.

I completely agree with the opinions of my colleagues who expressed their opposition, so please add my name to this list.

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EMAIL NUMBER 385

The name should NOT be changed.

1. Statistics is one of many branches of mathematics, simple enough!

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2. It is not justified that "The proposed name would put the Division in a better position to vie for new resources in this era of big data and to collaborate with other divisions."

3. If more people believe "The progression and the culture of statistics do not justify its being viewed as one of the mathematical sciences", which I highly doubt, advocates should seek to set up a new division in NSF called "Statistical Sciences" or whatever name, instead changing the name of the current division.

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EMAIL NUMBER 386

For reasons listed in President Friedlander's letter, and others, I find the proposal downright preposterous. It is insulting to all mathematicians working in areas outside of the core topics, other than statistics.

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EMAIL NUMBER 387

I am opposed to this name change for precisely the reasons you articulate. There seems no reason to single out Statistics as different from the other Mathematical Sciences. However, in crafting your reply it would be good to find out the reasons why people are suggesting this and counter them. Certainly, I know that statisticians are unhappy about usually being in math departments, and want to establish their own departments. But DMS does not only give grants to people in math/app math departments.

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EMAIL NUMBER 388

I oppose the proposed name change to the Division of Mathematical Sciences for the cogent reasons listed in the email from Eric Friedlander. I am particularly concerned with the implied shift away from fundamental research to mission-oriented research.

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EMAIL NUMBER 389



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I am not in favor of the name change as I consider Statistics to be a completely separate field and I am sure that it will eventually, negatively effect funding considerations for pure Mathematical Sciences.

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EMAIL NUMBER 390

My experience is as a mathematician in academic life who is not a statistician, but who has long been an enthusiast for statistics. I have taught probability and mathematical statistics, and I have a great interest in the role of statistics in mathematics education.

I oppose the name change. It would harm mathematics, but it would also be bad for the general health of statistics.

The reason is that statistics is involved in many areas of science and applied science. This is a source of new mathematical inspiration, but also a source of confusion and duplication. Somewhere there has to be a place where that part of statistics that has a mathematical core is developed. This does not mean that all of statistics should be mathematics, but some of it should be informed by sophisticated mathematics.

At least a substantial part of statistics should remain part of the mathematical community. Other parts of statistics may be part of biology or sociology or physics. One hopes that there is good communication. But there is honor in being part of mathematics and living up to the standards of mathematics. Collection and analysis of data may not belong in the Division of Mathematical Sciences. But the best way of accomplishing this has a mathematical component that fits very well indeed. This component should not be diluted.

Keep statistics flourishing (along with many other applications of mathematics) in the Division of Mathematical Sciences and in other areas where it has an important place. But leave the umbrella name alone. The proposed change would be bad for all concerned.

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EMAIL NUMBER 391

The arguments for and against the name change are clear, and there is little to be gained by individual letters repeating them in one direction or the other.

It seems to me that the appropriate action for the AMS is to quickly prepare a detailed survey conducting not only a preference vote yes or no

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but also gauging the strength of support for the various arguments. Results can be analyzed based also on the constituency of the respondent.

Only in this way can the extent of opposition be demonstrated.

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EMAIL NUMBER 392

Changing the name of DMS does not seem like a good idea to me. While statistics is an important part of the mathematical sciences, I think that adding it to the name draws an unneeded distinction between the fields. Further it may lead to more areas requesting specific mention in the name. This would end up dividing us rather than uniting us.

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EMAIL NUMBER 393

We have recently learned of the proposed name change of the "Division of Mathematical Sciences" at the NSF, to be renamed "Division of Mathematical and Statistical Sciences." We believe that this name change is not necessary, not justified, and will produce a dangerous precedent. Please find below two arguments to support our opinion:

1) Mathematical statistics is merely one of the major disciplines within mathematics, and as it was pointed out, less than 10% of the total number of proposals submitted to the DMS last year were in statistics. Moreover, the proposed name is preferential to one of the many subfields of mathematics, which in the long run will lead to escalating discord in the mathematical community. The "bigger community" argument from S.G. Pantula's letter has little foundation, since again: statisticians are just one small component of the big family of mathematicians.

2) The need for scientific progress in the field of large data analysis is not under question. However, one simply cannot justify that statistics is the single most important field of mathematics that deals with the problem of large data, and not all statisticians work on large data analysis. We believe that any significant progress on this problem may only be achieved through fundamental research in fields ranging from logic, graph theory, geometry, partial differential equations, numerical analysis, and maybe most importantly probability. History teaches us that breakthroughs almost always occur when one establishes deep connections between two or more mathematical fields.

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EMAIL NUMBER 394

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I view the proposed name change of the Division of Mathematical Sciences to be very problematic, for the same reasons already eloquently expressed by President Friedlander.

According to Director Pantula's letter, such a change would ostensibly help our Division attract more resources from the government. However, it is unclear to me how a simple name change would result in increased funding ... unless this was accompanied by a substantial shift in focus for our Division. If such a major policy change is intended, it needs to be clearly and explicitly stated, and then thoroughly discussed, before any name change is implemented.

Moreover, the assertion that such a change (in focus and/or in name) would attract more funding is debatable, at best. I see no evidence for this assertion whatsoever. "Mathematical Sciences" is already an extremely broad and inclusive name; singling out statistics seems to weaken our universal appeal, rather than enhancing it.

I should note that mathematics faculty at our university are involved in a number of multidisciplinary enterprises. We collaborate regularly with astronomers in statistical analysis of data. We consult with engineering faculty. And most recently, we are leading efforts to develop a cyber-security degree. Yet I strongly believe that our Division's current name most accurately reflects our focus and who we are.

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EMAIL NUMBER 395

I have spent much of my mathematical career in military modeling and statistical analysis, and I wish to register a negative input on the proposal to change the name of the NSF's Division of Mathematical Sciences (DMS) to the Division of Mathematical and Statistical Sciences. I have no problem regarding statistics as having non-empty intersection with mathematics, but certainly it is a broader application area than what we call mathematical statistics. Thus it seems quite an expansion to incorporate everything one would regard as statistical science into the Division. Surely that is a major policy decision. If it is intended only to highlight the significance of mathematical statistics, why would we need to do this? It seems the arguments advanced in favor of such a move would apply as well to differential topology or any other active mathematical field. It's unlikely we would consider expanding the Division title to highlight each of these.

It appears to this AMS member that the name change is both unnecessary and confusing. Let's not do this.

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EMAIL NUMBER 396

I am writing to express my opposition to the proposed name change of the "Division of Mathematical Sciences" to the "Division of Mathematical and Statistical Sciences". I agree with the concerns brought up by other authors - among them are ones pasted below:

- 1.) The mission of the NSF is to fund basic research. Much of mission-oriented Statistics is funded by other federal agencies, hospitals, industry, etc. This name change suggests a move within DMS to relax its focus on basic research.
- 2.) The suggestion of "new resources to all core programs" is far different from any commitment to seek new resources to support the basic research of these programs.
- 3.) The current name (Division of Mathematical Sciences) was crafted to be inclusive. The inclusiveness of DMS has resulted in increased funding for many programs including Statistics. The Mathematical Sciences should work together, emphasizing commonality and presenting the best case for the importance of the Mathematical Sciences.
- 4.) Statistics is only one of 10 programs supported by DMS. In 2010, Of the 2978 proposals submitted to DMS core programs, 242 were submitted to the Statistics program. It is natural to ask why Statistics appears to be uniquely selected by DMS for special emphasis.
- 5.) The analysis of big data is indeed important, and the Mathematical Sciences will play an important role in developing fundamental concepts and approaches to manage the "data deluge" and extract useful content.

That said, National Science Foundation support of the Mathematical Sciences should energetically embrace basic research in all aspects of the Mathematical Sciences to advance fundamental knowledge and initiate unexpected revolutionary applications.

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EMAIL NUMBER 397

I strongly oppose the change and wholeheartedly agree with AMS President Eric Friedlander that:

"Such a name change could create an unnecessary and unfortunate divide in the mathematical sciences community. We question whether this portends a shift within DMS away from support of basic research toward mission-oriented research. This could bring the less mathematical aspects of Statistics into the same funding pool as basic research in Mathematical Sciences, thereby negatively impacting resources available for basic research in the Mathematical Sciences, including basic research in Statistics."

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EMAIL NUMBER 398

I am strongly opposed to this name change, on all the grounds mentioned. I would also point out that statistics already is a "mathematical science", and use of the name "mathematical and statistical sciences" would imply that statistics is not mathematical.

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EMAIL NUMBER 399

I agree with American Mathematical Society President Eric Friedlander that the name of NSF's Division of Mathematical Sciences should not be changed. As someone who knows former DMS Division Director Phillippe Tondeur, I agree with his judgment that the name of the NSF's Division of Mathematical Sciences should NOT be changed.

If the name is changed, we should be prepared to write an open letter denouncing the change.

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EMAIL NUMBER 400

I am strongly in favor of keeping the DMS name, and not adding an unnecessary bias in the name.

Furthermore, the notion that the name of the division needs to be more inclusive can only be based on the false tenet that mathematical sciences does not include statistics.

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EMAIL NUMBER 401

I found it is unbelievable for the proposed name change. I have no idea what it is based on. At least, I hope it is not because the new Director is a Statistician. If that is case, when one day, an Analyst gets the directorship, shall it be changed to the Division of Analysis and other Branches of Mathematics??

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EMAIL Number 402

The title should not be changed.

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EMAIL Number 403

The proposed name change of the Division of Mathematical Sciences of the NSF is very unfortunate and I hope it will not be adopted. The current name is an inclusive one, emphasizing a broad area of fundamental research. Adding "Statistical Sciences" to it is a very bad idea because it singles out one of the many areas within it for special treatment, and I cannot think of anything more divisive and destructive than this.

I hope cooler heads will prevail and this proposed name change will not be adopted. I encourage you to do everything in your power to stop it.

It is very unfortunate that Dr. Pantula has chosen to make us waste valuable time and energy by this ill thought out proposal. However, I think it is important that the name change be stopped and I am grateful for your and the AMS efforts in this regard.

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EMAIL Number 404

I agree that this is an undesirable change, sounds like merging will halve the voice of mathematics at NSF.

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EMAIL Number 405

First of all, thank you for informing the Society of this proposal and for soliciting our input.

Like most of my colleagues, I see no good in this proposal and I believe the Society should publicly condemn it in the strongest language possible. Moreover, as the proposed name change and its rationale show such indifference towards the progress of mathematics, I ask that the Society call for the removal of Dr. Pantula as Division Director of the DMS.

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I am most concerned about Dr. Pantula's assurance that the new name would ``help increase resources for ALL core programs." While this may be true, I suspect that in its implementation, our proposals will be required to show that our research will assist with the digestion of deluges of data. I am feeling a little queasy.

While not directly related to this matter, I must comment that I see this development as part of a larger trend of ``more money to do less math." Specifically, at my institution, I have seen several faculty give up their research careers so that they can pursue NSF funding of projects which involve no mathematical research at all. As a result, we now have graduate courses being taught by those who have not published a research paper in years.

Again, I thank you for soliciting our input, and I wish you the best of luck in opposing this terrible proposition.

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EMAIL Number 406

It seems to me that the name change is not warranted. Since statistics is a mathematical discipline, the change would make as much sense as, say, "Division of mathematical sciences and differential geometry".

There is, of course, an applied side to statistics, but I am not sure the NSF is (or should be) supporting that aspect. If such support is desired, it should be separate from mathematics because the criteria would be vastly different.

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EMAIL Number 407

I strongly oppose the name change.

Mathematics and statistics differ significantly in their motivation, goals, and methods --- enough to warrant a separate classification at NSF.

Enough said.

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EMAIL Number 408

I think the proposed name change is a bad idea. The naive reader will get the impression that the division is half mathematics and half statistics, while in reality statistics is a relatively small part. This is clearly the wrong impression and could adversely affect funding. It would be inappropriate for half the funding to go towards statistics when this applied field has so many more opportunities for funding through industry.

Analysis of large data will, however, become more important as time goes on. I think of this as more a part of computer science, but it would benefit from the work of mathematicians. Perhaps it could start a new division?

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EMAIL Number 409

Eric Friedlander has proposed that such a name change bring the less mathematical aspects of Statistics into the same funding pool as basic research in Mathematical Sciences. This could drop resources available for basic research in the Mathematical Sciences, including basic research in Statistics.

If, indeed, there is political pressure on decisions about the relative proportion of money going to different areas, this would almost surely happen, since much more of the scientific advisory community understands statistics than any other other area of mathematics.

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EMAIL Number 410

As things now stand, the name change seems inappropriate, since "Mathematical Sciences" has always included statistics.

If some larger change is intended, that should be discussed before any name change.

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EMAIL Number 411

People have already given many good arguments against changing the name of the "Division of Mathematical Sciences" because it would harm or distort its role in the National Science Foundation. I agree with most of these arguments.



But I will add what I believe is the most persuasive argument, separate from the role of DMS in NSF. For the past half century, mathematicians, statisticians, computer scientists and other closely related scientists and engineers have struggled about the proper interaction of their various fields. As mathematics spread and expanded its influence, groups within universities and (in some cases, industries) struggled to find ways to foster cooperation and to view their subject, whatever its name, to be inclusive and broadly defined. In many cases, it was a difficult struggle, sometimes never fully resolved. But the ultimate outcome was to settle on an inclusive name for all mathematically-connected fields-that name was "mathematical sciences". New divisions of mathematical sciences sprang up in universities and colleges; consortia of departments formed under the title; groups of mathematical associations coalesced under the name (CBMS, the Conference Board of Mathematical Sciences).

Changing the name of DMS affects far more than merely the National Science Foundation. It risks destabilizing a half-century-long effort to bring together many areas under a common name. The term "mathematical sciences" represents more than a name; it represents cooperation and interaction between MANY disciplines that are connected to mathematics. Dismissing that name because someone claims it is not inclusive is both ahistorical and foolhardy.

Surely we don't want the community to move backwards, reigniting territorial arguments about what is "real" mathematics (or "real" statistics!). Surely we don't want the National Science Foundation to intrude in the delicate balance within universities about how to distribute the mathematical sciences within their organizational frameworks. Surely we want to foster cooperation and interaction rather than internecine struggles about group labels.

I implore the National Science Foundation to set aside this suggested name change as quickly as possible.

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EMAIL Number 412

I strongly oppose the proposal to change "Division of Mathematical Sciences" to "Division of Mathematical and Statistical Sciences".

Statistics is a mathematical science, and changing the name of DMS in this way would suggest otherwise, taking away from the breadth of the mathematical sciences. DMS is appropriately inclusive of the statistical sciences now. The change would be divisive.

If we were to try to draw finer distinctions between what is a mathematical science and what isn't, the first thing that comes to my mind as not being covered by "mathematical sciences" is pure mathematics, which, it can be argued, is not truly a \*science\*. There is a better argument for changing the name of DMS to "Division of Mathematics and

Mathematical Sciences" than to "Division of Mathematical and Statistical Sciences". Anyone who feels that the name "Division of Mathematical Sciences" is not accurate or not broad enough to be inclusive of statistical sciences should be arguing to change the name to "Division of Mathematics, Mathematical Sciences, and Statistical Sciences", or perhaps something even longer and more cumbersome, like "Division of Mathematics, Mathematical Sciences, Statistics, and Statistical Sciences," or "Division of Mathematics, Statistics, and Those Mathematical and Statistical Sciences That Are Not Physical Sciences."

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EMAIL Number 413

I oppose the name change. People more eloquent about such things than I, e.g., \*\*\*, have given their views, and I agree.

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EMAIL Number 414

I suggest that the AMS respond to Pantula's proposal to rename DMS with constructive suggestions for better ways of addressing the issues described by Pantula in his letter. Specifically, how does the NSF react to the evolution of statistics into a discipline whose distance from mathematics has increased with its growing emphasis upon "large data?"

Discussion within the mathematics community reflects disagreement about whether statistics today is still a mathematical science. If it is, then the current name of DMS is appropriate. Perhaps a more important issue is whether the ways statistics functions as a discipline fits with the rest of DMS or whether there are limitations stemming from the way DMS operates. Operations research and computer science (as a "software" science) are disciplines that were started by mathematicians but evolved to establish their own identity so that they could tackle problems that fell well outside the boundaries of mathematics or applied mathematics. Statistics is in a more ambiguous state currently, but there appears to be a consensus within at least part of the discipline that mathematics is no longer at the heart of statistics. The American Statistical Association web pages about careers in statistics demonstrate this ambiguity.

Their definition of statistics reads:

"Statistics is the scientific application of mathematical principles to the collection, analysis, and presentation of numerical data. Statisticians contribute to scientific enquiry by applying their mathematical and statistical knowledge to the design of surveys and

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experiments; the collection, processing, and analysis of data; and the interpretation of the results."

On the other hand, a set of power point slides on this web page quotes the definition of statistics from the American Heritage Dictionary:

"The mathematics of the collection, organization, and interpretation of numerical data, especially the analysis of population characteristics by inference from sampling."

The difference between the "mathematics of ..." and the "scientific application of mathematical principles to ..." seems to reflect the discomfort of statistics today with the constraints of being a "mathematical science." Slide 28 of this series says that the way to become a statistician is to "Major in statistics, applied mathematics, or a closely related field (i.e. epidemiology, engineering)."

Mathematics is not a listed major! If the path to becoming a statistician does not include study of core undergraduate courses in mathematics, it seems hard to maintain that statistics is still a mathematical science. Mathematical statistics remains part of the discipline, but perhaps a less vigorous enterprise than most mathematicians think is optimal for the future of statistics. That is a value judgment that mathematicians can make, but it will not and should not constrain the development of statistics by statisticians.

The key question for the NSF in addressing Pantula's proposal is whether DMS should broaden the scope of DMS so that it remains the primary home for statistics within the NSF. I think that there are better ways to accommodate disciplinary support for statistics. The methodological role that statistics plays in diverse disciplines has become deeply embedded in the subject. The issues surrounding statistics present an opportunity for the NSF to improve its treatment of this inherently interdisciplinary science.

The large data problems faced by statistics cannot be divorced from the databases that organize the data itself. Advances in the floating point performance of highly parallel computers continues to outstrip the advances in communication speed and energy efficiency. How data is organized will constrain what can be learned from mining it. If statistics is to flourish as the science of large data, it should be integrally involved in the technologies and organizations that assemble the data and it make it available. Similarly, computational scientists should be integrally involved in the creation of databases that will be used as a substrate for modeling and simulation. Examples include global atmosphere models, landscape ecology, metabolic networks and social science research based upon census data.

Much is to be gained from exploiting commonality among the problems that surface in different disciplines. The power of mathematics and statistics for science resides in the solution of problems distilled and abstracted from the settings in which they initially arise. These solutions frequently find application far beyond the domain in which they first arose. The NSF has been slow to implement research programs that seek to

advance this type of common solution to problems arising in large scale computing. The Office of Cyberinfrastructure and its predecessors have supported technology advances, provided large scale computing support for research groups, funded research on "grand challenges" and more recently on the organization of large data. What they have not funded (much) is fundamental research that develops new algorithms and methods of data analysis which are needed because existing methods became ineffective with increasing problem scale. As an evolving discipline, statistics has much to offer in this realm. I suggest that OCI, rather than DMS, is the organization within NSF that should broaden its scope by providing this type of support. It can serve as an interdisciplinary meeting ground to coordinate all of the groups creating and using large data. It should also provide direct support to disciplines like statistics that are critical to using large data more productively.

Postscripts:

1) Similar comments apply to computational science and engineering, an important area that needs more support for its "core."

2) I suggest that SIAM, AMS and other math organizations discuss their responses with each other before replying to the NSF. This may be an occasion for a meeting of JPBM as the coordinating body it was created to be!

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EMAIL Number 415

I think it a very bad idea to start labeling mathematics by its different parts.

I had lunch with my colleague Mary Wheeler, on the entirely different end of the spectrum of mathematics than the one I sit in, and she agree very vociferously with me. Do you want her page of diatribe?

What do you want?

Mathematics, Combinatorics, Mathematical Biology, Computation, Engineering Mathematics and Statistics? What a name!

It is all mathematics. By adding the name statistics you imply it is not mathematics. I shudder to think what the world would be coming to that is even worse than where it is going if statistics were not mathematics.

By the way, \*\*\* gives me her permission to use her name.

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EMAIL Number 416

It is well known that a proper subset cannot equal the whole set.

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EMAIL Number 417

I oppose the proposed name change from the Division of Mathematical Sciences to the Division of Mathematical and Statistical Sciences. I believe that NSF should concentrate its limited resources on pure science research. This is the best long-term growth strategy for our country. There are many other funding sources available for applied research.

Besides, there are many important mathematical sciences, and it is wrong to single out statistics as uniquely important.

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EMAIL Number 418

I strongly oppose changing the name of the Division of Mathematical Sciences of the National Science Foundation to the Division of Mathematical and Statistical Sciences.

Please kindly read my comments added to the reasons listed by Professor Eric M. Friedlander, the President of the AMS.

1.) The mission of the NSF is to fund basic research. Much of mission-oriented Statistics is funded by other federal agencies, hospitals, industry, etc. This name change suggests a move within DMS to relax its focus on basic research.

Additional comment: Not only much of Statistics is funded by other federal agencies, but it derives income also from consulting, private enterprise, actuarial exam preparation courses, and other work unrelated to research. As some Departments of Mathematics and Statistics are overrun by non-science, practical statistics activities - mathematics is pushed aside. The same could happen within the DMS. Only truly mathematical statistics research should be supported by the DMS.

2.) The suggestion of "new resources to all core programs" is far different from any commitment to seek new resources to support the basic research of these programs.

I absolutely agree with the above statement.

3.) The current name (Division of Mathematical Sciences) was crafted to be inclusive. The inclusiveness of DMS has resulted in increased funding for many programs including Statistics. The Mathematical Sciences should work together, emphasizing commonality and presenting the best case for the importance of the Mathematical Sciences.

This is an extremely good point.

4.) Statistics is only one of 10 programs supported by DMS. In 2010, of the 2978 proposals submitted to DMS core programs, 242 were submitted to the Statistics program. It is natural to ask why Statistics appears to be uniquely selected by DMS for special emphasis.

Indeed, statistics is only a small fraction of mathematical research.

5.) The analysis of big data is indeed important, and the Mathematical Sciences will play an important role in developing fundamental concepts and approaches to manage the "data deluge" and extract useful content.

That said, National Science Foundation support of the Mathematical Sciences should energetically embrace basic research in all aspects of the Mathematical Sciences to advance fundamental knowledge and initiate unexpected revolutionary applications.

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EMAIL Number 419

As a former NSF program director (who shared proposal awards with Statistics -- back when the program was Statistics and Probability) and as a mathematician who has authored a number of papers jointly with a statistician, I want to endorse the comments in Eric's letter. The interactions between the program I directed and the Statistics Program were effective for both disciplines. The name change is unnecessary and portends the kind of budgetary shifts outlined in the letter. I am strongly against changing the name.

Thank you for calling this matter to the attention of the membership.

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EMAIL Number 420

For what it's worth, I view the proposed name change as divisive and thus a very bad idea. Mathematics has not been helped by the previous divisions; it won't be helped by this one either.

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EMAIL Number 421

I often found myself nodding in agreement while reading Prof. Pantula's letter, and I almost imagined hearing his voice, brimming with excitement over an up-and-coming paradigm in science and mathematics. While I share his enthusiasms about these developments, I do not support his idea of renaming the "Division of Mathematical Sciences" to "Division of Mathematical and Statistical Sciences". While some of my colleagues might object to this name change based on pride, or some ill-defined (and, in the long run, no doubt harmful) rivalry with statistics for attention and funding, the reason for my dislike is different and very simple: the "new" science and new opportunities sketched by Prof. Pantula are not statistics.

The art of finding structure in vast, quasi-structured data sets is not statistics. By that logic, Johannes Kepler, who around 1605 fitted an ellipse to Tycho Brahe's database of positions of celestial bodies, was a statistician.

Around 2000, two graduate students at Stanford faced the daunting task of algorithmically hierarchizing vast text corpora. Their solution relied on pointers between texts, mixed with ideas from linear algebra and finite Markov chains. They've built the most proficient manipulator of textual data yet in existence. Their method is notable for its lack of statistics. (If you don't know this story, try googling "PageRank".)

Since around 1970, a tremendous amount of sophisticated statistical research --- in the proper, strict sense of statistics --- has gone into processing data from financial markets. Among all time series available to mankind, I believe none have received closer scrutiny than those. All that statistical research has improved our understanding of financial markets by, in the first approximation, nothing. No convincing structural explanations of phenomena such as business cycles and panics are known, nor can such explanations emerge from statistics alone. What's missing is the mathematics and mathematical economics.

There are several hundred thousand proteins present in most living systems, interacting via complicated molecular pathways. At present, a few links in this system of dependencies are understood; past that, we are limited to looking at fragile and ad hoc statistical measures. In our lifetime --- if we are lucky --- systems of polypeptides will be much better understood. That progress won't come from statistics of data sets. The advance will come from disciplines called molecular biology, molecular evolution, and mathematics of complex systems.

Quite simply and straightforwardly: I dare Prof. Pantula name a single breakthrough in science that was fueled by statistics.

Prof. Pantula is right. There's a new paradigm emerging. Some of our prominent colleagues --- I believe I can name David Mumford, Yuri Manin, Barry Mazur among them --- have called this paradigm, or parts of it, "stochastic thinking"; "mathematics inspired by physics"; "experimental

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mathematics". The phrases "pattern recognition"; "machine learning"; "data mining" are also in currency. All these monikers seem, unfortunately, ill-fitting, temporary or narrow.

There's one term that covers them all: mathematics. Better yet, "Mathematical Sciences". Let's keep it. And ponder for a minute the meaning of mathematical \_science\_.

The root of the word "statistics", as fans of etymology no doubt know, is "state", as in nation-state, and for a good hundred years of its existence, its meaning was limited to "description of the state of affairs". Let's not waste the present wonderful opportunity to expand the depth and breadth of mathematical research by adjoining a 19th-century adjective to it.

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EMAIL Number 422

I could not have expressed the opposing view any better than you did in your letter. I, too, oppose this name change. Perhaps one generation or more ago, one could not be terribly surprised by the thought of such a name change, but, as we all have observed, statistics has shown itself to be just another branch of mathematics. As has already been expressed, the awarding of the 2007 Abel Prize to Varadhan (a probabilist/statistician) is a current and definitive sign that statistics is simply another branch of mathematics, not something "separate" from mainstream mathematics. As you expressed, I feel that this name change could be divisive, leading to a questioning of the motives of those advocating this name change.

Professor Friedlander, I am behind you 100%.

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EMAIL Number 423

Director Pantula, in his letter to Fred Roberts, makes clear that his motivation for pushing the name change is to position the division to seek new resources for the "union of two large but different communities." Although he claims that he does not "envision reducing funding for core areas of mathematics and statistics," he does appear to be advocating an enlargement of the scope of research pursued under the banner of the division. Unfortunately, there is no indication at all, either in his letter or in the information being circulated by the AMS and SIAM, that the purported new resources will be of sufficient magnitude to truly make the broadened research scope a win, in terms of resources, for both basic research in mathematics and mathematical statistics as currently pursued under the umbrella of DMS and the broad,



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multidisciplinary statistical research Director Pantula proposes to add to the division's purview. In conclusion, without further details about the implementation of the proposed shift in research scope, I am opposed to the proposed name change.

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EMAIL Number 424

I oppose this name change.

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EMAIL Number 425

The formula we get the result that I've Vtvansth Adadavl Vhds Gldbakh Karkrdym Adadavl Vhds Gldbakh need gives us time to work as a computer if you can call us, our goal is to cooperate scholarship

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EMAIL Number 426

I wish to record my opposition to the proposed name change for the Division of Mathematical Sciences to Division of Mathematical and Statistical Sciences.

I see no particular reason to single out Statistical sciences from some of the other areas that are supported by DMS. Clearly, statistics is an important subject (and indeed is supported by many other entities).

However, I am more concerned about the possible shift in funds to statistics from core areas supported by DMS; for some of the core areas, there are no or very few other sources.

This is a huge change and should not be undertaken lightly. I am strongly opposed.

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EMAIL Number 427

I strongly oppose by Sastry Pantula's proposed name change of the NSF Division of Mathematical Sciences.

On assuming the role of "Division Head?" of DMS, Pantula assured the mathematical sciences community that he did not intend to make any policy changes favoring statistics to current funding within DMS. How quickly he has changed his mind. This is a blatant attempt to change policy without discussion of policy. One reason that the National Science Foundation has succeeded where other foreign science funding bodies have failed is that it sets its policy in consultation with the eminent scientists and scientific societies. This policy change could be advantageous for the mathematical sciences and for the nation, but it should be discussed and vetted, not attempted through a single-handed power grab.

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EMAIL Number 428

Since my undergraduate days, I have taken an interest in noticing when those working in another discipline do something in a mathematical style or use mathematical information to make progress. There is usually something besides mathematics that is required to solve the problem. It seems fair to say that the work uses mathematics but is an achievement in the other discipline. In some cases, the needs of the other discipline provide motivation for further developments in mathematics, perhaps even a new area of mathematical research. At times there is a collaboration between one or more mathematicians and one or more researchers in another discipline. Almost any mathematician could name a number of examples of an area of mathematics motivated by another discipline as well as a number of examples of collaboration. (My own favorites are physics and signal processing.)

To me, the current name announces a readiness to participate in interactions between mathematicians and researchers in other disciplines. It also recognizes that the other disciplines have their own knowledge and needs that may not be mathematical in nature. (If we want to work with them we probably need to learn beyond the boundaries of mathematics.)

In my opinion, mathematics needs its own home in the NSF. In the end that will be better both for mathematics and for all the many disciplines who find mathematics to be friendly to their enterprises. I don't see a real benefit to singling out statistics among those other disciplines.

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EMAIL Number 429

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I strongly oppose the name change primarily due to the many reasons already well explained by others.

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EMAIL Number 430

I very strongly oppose to the name change, and completely agree with the view expressed in the letter of Eric Friedlander, the President of AMS.

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EMAIL Number 431

I am responding to Eric Friedlander's letter, encouraging us to send our views to this e-mail address. The proposal to change the name from DMS to DMSx (Division of Math Sciences and x) is an interesting one, but I oppose the choice x=Statistics for the same reasons that I would oppose x=Finance. Possibly renaming it would result in the DIVISION getting more money, but it would result in a mission-change, and it is probable that it would result in fewer resources going to what is currently the mission of DMS. For example, if it were "Math and Business" then the Math end would be overwhelmed by the "Business" part of the mission. Replacing "Business" by "Statistics" would only be less overwhelming, but still a diversion of resources. Those (pure) statisticians currently supported by NSF funds would be joined by a large group of business-oriented statisticians who are currently funded by businesses, and also by health-industry oriented statisticians currently funded by NIH.

If the NSF wants to focus on "Big Data" then a more appropriate name might be x=Computational Sciences: Division of Mathematics and Computational Sciences. However, I understand from \*\*\* that this is not going to happen.

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EMAIL Number 432

I concur with the statement below and therefore oppose the proposed change.

Others, including the three prior directors of DMS, have argued against the change. Briefly, the primary arguments that have been made against the change are:

The name change suggests that statistics is not a mathematical science and implies diminished relevance of the mathematical sciences to data. This violates common usage and the inclusive view of the mathematical

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sciences successfully advocated by DMS for many years. The proposed name is preferential to one sub-area, and will provoke discord in the community. Some feel it may portend a been discussed or justified.

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EMAIL Number 433

I oppose the name change.

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EMAIL Number 434

I concur with President Eric Friedlander's comments opposing the change of name of the Division of Mathematical Sciences at the NSF.

The term "Mathematical Sciences" encompasses Statistics so it is difficult to imagine the motivation for this name change other than to shift the mission of DMS toward a greater emphasis on Statistics and away from the support of core and applied mathematics. Statistics has long enjoyed respect and success in DMS, and there are numerous avenues for support of the more applied research in Statistics both inside and outside the NSF. Moreover I have to express my disappointment with this venture by my friend Sastry Pantula. Directors of the divisions should not use that position to advocate their own field but should be a general advocate for all the Mathematical Sciences.

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EMAIL Number 435

I am not in favor of changing the name of the DMS to Division of Mathematical and Statistical Sciences. Statistics is but one area of Mathematics. At this point statistics is a "hot" area but I have seen "hot" areas cool down and other areas take their place.

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EMAIL Number 436

I strongly support keeping the name even before reading your cogent email. I agree with all the reasons listed there.

EMAIL Number 437

I agree with the concerns expressed about the proposed name change of NSF Division of Mathematical Sciences. Even if the intention is for this change to be policy neutral (as Director Pantula says), in the longer term it seems certain that the change in title will have a policy impact. For one thing, after the name change, practitioners of non-mathematical statistics would very reasonably object to the "Division of Mathematical and Statistical Sciences" only funding projects in mathematical statistics.

For a long time now, there seems to have been a trend both at universities and at the NSF away from funding pure mathematics. (For evidence of this trend at universities, compare the number of job advertisements in applied mathematics with the current fraction of mathematicians would call themselves applied mathematicians.) By and large, this trend seems to be pushed by administrators who do not understand either field, but think that the word "applied" is necessarily a superlative. The proposed name change for DMS seems like another step in this direction.

More broadly, mathematics holds a unique place in the sciences. Many ideas which may work well in other sciences---like promoting extensive undergraduate research, or judging research proposals on certain kinds of broader impacts---have limited applicability to mathematics. DMS is already doing far too little to distinguish mathematics from other sciences in these respects. The name change seems like a step in the wrong direction in this regard, as well.

In sum, I strongly oppose the proposed name change for DMS.

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EMAIL Number 438

I have reviewed NSF Division Director Sastry Pantula's letter and AMS President Eric Friedlander's letter addressing the proposed name change from the "Division of Mathematical Sciences" to the "Division of Mathematical and Statistical Sciences". I strongly support President Friedlander's major points suggesting that such a name change is not in the best interest of the core basic research mission of the ten programs in the Division of Mathematical Sciences.

I am disappointed that Dr. Pantula would use his position as the Division Director to egregiously promote his own personal and professional interests. As a director of ten programs he has singled out his own and

## Responses from AMS Members

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made non-compelling arguments that the statistics component of DMS will be the one leading the wave of future 21st century research.

I have seen this "tactic" used on more than one occasion at the university level:

(i) Departments change their names from the "Department of Mathematics" to the "Department of Mathematics and Statistics": all of a sudden the small group of statisticians in the department believe they are entitled to one half of the new and replacement positions.

(ii) A department head, chair or dean whose research interests are only applied uses their position of authority to dictate the hiring directions of the mathematics department: this often happen under the guise of reallocating resources into joint hires with other departments, and attempts to strength only areas with "immediate applications".

I would hope that in the future the National Science Foundation would choose division directors with the integrity and genuine interest to promote both basic and applied research. The type of political maneuvering that Dr. Pantula advocates will ultimately lead to distrust among members of a community that should be working together for the advancement of science.

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EMAIL Number 439

I would like to submit my opinion on the proposed name change of the DMS. As an active member of the AMS, MAA, and IMS, as well as a professor of mathematics at Purdue University, this proposed name change will affect me. I am opposed to the name change for the following reasons.

The DMS currently funds only Mathematical statistics - other types of statistics are funded elsewhere. Mathematical statistics can properly be thought of as a field of mathematics (much as topology or algebra are fields of mathematics) and is thus appropriate for funding in the DMS. The proposed name change could in the future be interpreted to mean that the division could also fund the less mathematical parts of statistics.

A large part of the justification seems only to be that "we can get more money." While this may be true, it does not seem to be a proper justification in my opinion, especially when the budget for the federal government is tight. Since it is unlikely that in these times the overall money spent funding research is unlikely to dramatically increase, any increase in funding for the DMS would be at the expense of something else (like the NIH). Shifting where those statistics projects are funded might make the directors of the DMS to look good (bringing in more money) but doesn't essentially improve the scientific research in this country. Please keep the focus on funding good research and not on shifting the money around.

EMAIL Number 440

I do NOT support the name and focus change from the Division of Mathematical Sciences.

The suggestion is to emphasize some of the possible applications of statistics in "areas such as sustainability, energy, massive and complex data, economic development, health, environment and security" and hoping thereby to attract more funding. A name change would perhaps benefit projects in those areas.

But the proposal does not make clear how chasing after "new resources in this era of large data" is going to "help increase funding for ALL core programs", as claimed in the proposal, unless the notion of "core programs" is REDEFINED to comprise precisely those which manage to somehow increase funding.

This may be a rare opportunity to lay claim to research for many important statistical applications; whether it is a rare opportunity to lay claim to additional money needed for those applications is much in doubt in my mind. Is it not much more likely to be a mechanism to shift attention, and therefore what money we now have for the core mathematical sciences, into the areas Pantula mentions?

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EMAIL Number 441

I do not support the proposed name change. The Mathematical Sciences are already widely understood to include statistics, so there is no extra inclusivity that is achieved by this name change. The reasons given by Director Sastry focus on giving the NSF a better chance to attract funding for large scale projects related to data.

Unfortunately, I think that this is a misplaced priority. The NSF's most effective programs are those that support individual research; this is the heart of the mathematical sciences. I recognize that the GAO has pressured the NSF to develop more large scale programs, since it views individual math grants as small and therefore expensive to administer compared to experimental science. However, in larger scale efforts, the NSF has tended to focus funds on highly ranked departments independently of whether this ranking is related to current strength or past glory (rankings are famously slow to respond to departmental changes).

As such, it has not served the mathematical sciences very well, and it has allowed these large grants to detract from the focus on individual research. This at the very time that highly influential researchers are being dispersed more widely than ever before (cf. the lower turnover at

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top departments due to the lack of a retirement age). I see this name change as part of a process that will accelerate the de-emphasis on individual grants, and a name change that has no intellectual merit whatsoever, and accordingly I am strongly against it.

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EMAIL Number 442

I am sure people more coherent and knowledgeable than I can write more (and better) words about this than I can come up with. However, in case you are planning to tabulate how many responses you got to your e-mail, I wanted to respond to at least contribute to that count in opposition to the proposed name change.

Indeed, the main argument for changing the name is that mathematics is very important in studying large data sets, which partially falls under the DMS purview. However, that exact same argument can be made for many, many other areas of science the MPS funds. The choice is to either lengthen the acronym to include cryptography, mathematical physics, engineering applications, etc., or just simply to keep it as it is -- in concert with the unifying power mathematics has across such a broad spectrum of applications. Would the implication of such a name change then be that no other areas have interesting mathematics applied to them?

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EMAIL Number 443

I am forwarding to you a letter I have just sent to the President of the IMS-Professor Ruth Williams. I am a member of both the AMS and the IMS. It does not seem necessary that I write a separate letter addressed to you on this. But if you feel otherwise, I will be happy to send the same letter, but addressed to you.

\*\*\*\*

Professor Ruth Williams, President  
October 23, 2011  
Institute of Mathematical Statistics  
University of California, San Diego  
Dear Ruth,

This is in response to your letter of October 12, 2011, to IMS members. I am someone who has devoted a great deal of time and effort to research in both statistics and probability, and I probably have a reasonably educated perspective on the subject of changing the name of the Division of Mathematical Sciences at the NSF to Division of Mathematical and Statistical Sciences. The importance of data mining or developing new methodologies and computational techniques for dealing with massive data that are now routinely made available via the internet



or by other means is undeniable. Also, the great recent advances in computing-both in speed and in the development of new algorithms- have been nothing short of amazing, and there is a lot more to come. However, it should not be forgotten that most of the recent breakthroughs in applied statistics, including the bootstrap and the analysis of microarray data, have come from theoretical statisticians, the kind of work the NSF in its present format is best suited to promote. Advances in computing have been made possible through basic research such as that giving rise to the MCMC, and also by computer scientists. A change of name of the DMS as proposed would send the wrong signal, namely, that the basic research in statistical theory and related fields, as presently supported by the NSF, is not well suited for the advancement of modern statistical applications.

It may be noted that the NIH provides substantial support specifically for some of the most important areas of applications of statistics, namely, those in biological and health sciences. If it is felt that there are certain areas of "big data" analysis and data mining that are not adequately addressed presently either at the NSF or at the NIH, perhaps one may consider creating another well thought out program under the DMS for that purpose. But given the current state of federal support for basic research at the NSF, one may only hope that even such a step will not undermine research in more fundamental aspects of statistics and their applications.

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EMAIL Number 444

I write as a mathematical scientist who cares deeply about the NSF and DMS. I owe a great deal to the Foundation and the Division in their support of my research and career, and I have also served them in variety of ways, including serving on the MPSAC. I take a broad view of the mathematical sciences, and strongly agree with Sastry Pantula and Ed Seidel on the high and increasing importance of data and of the tremendous opportunities this opens to the Division. I believe that statistics has been a vital part of the mathematical sciences and this part could increase in the near future. I am also a three-decade member of AMS.

However, I STRONGLY OPPOSE the proposal to change of name of the Division of Mathematical Science.

Many arguments have been put forth on both sides, generally with some merit. However, I feel that the arguments against the change are far more convincing. To me, the most persuasive of these are:

Statistics is an integral part of the mathematical sciences. This is common sense, long expressed both inside and outside of statistical community, and an important part of the message that the mathematical sciences community and the DMS have delivered consistently for decades. Suddenly implying the opposite sounds like doublespeak and suggests to

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members of the community that there must be hidden agendas and manipulation.

The name change implies preferential treatment for one subfield in the Division. The fact the field represents about one tenth the activity of the Division, but is proposed to be half the name, again excites undesirable suspicions. There have been no convincing arguments proposed for why such special treatment is appropriate for statistics more than it would be for numerous other subfields, such as applied mathematics, computational mathematics, mathematical biology, quantitative finance, operations research, etc.

Finally, while the proposal was presented as an attempt to bring together the community, it is clear that it is accomplishing the opposite. If this change is made, it will certainly do major damage to the relations between statistics and the rest of the mathematical sciences community, and I believe it will hurt statistics for years to come.

I urge the NSF leadership to withdraw this proposal as soon as possible. This will create an opportunity to join together with members of the community to repair the damage that has been done, and return to addressing the challenges that face the math sciences and, indeed, the nation.

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EMAIL Number 445

This is a quick response to AMS President Eric M. Friedlander's message regarding Sastri's move to rename DMS.

I agree with the arguments presented against such a move, and I do not agree with Sastri's arguments. I have little to add about that. What disturbs me more is the fact that a public servant seems to attempt to use his hold on the purse to effect change without due consultation.

This incident is in stark contrast with an action we took at Boston University while I was on faculty there. At the time the department was named "Department of Mathematics", and was chaired by a pure mathematician. The statistics group brought up a proposal to change the name to "Department of Mathematics and Statistics". The statistics group detailed their request before the faculty, there was a thorough discussion, and the whole department agreed to the move on its merit.

The case at hand suggests that Dr. Sastri has taken the position for the sake of power and specific agenda rather than for public service. We all know to avoid electing department chairmen of that nature, and if the situation is as I fear, and Dr. Sastri proceeds to bully the mathematical community, we might need to move in all available channels to bring to his removal.

EMAIL Number 446

In the early 90's I was Chair of a department of mathematics which had a statistics subgroup of 10 tenure stream faculty out of the department total of 46. This group asked the Dean to form a separate statistics department. I did not oppose this request, because I felt that most of them (9/10) approached research differently from most of the non-statisticians in the department.

One of the arguments they gave is that this was a trend, with many statistics groups around the country forming separate departments. I believe this was true to some extent, at least. Now it appears that the statisticians want to have their cake (separate departments) but eat it too (have access to more of the funding of DMS). Beyond this, I agree with the other considerations raised in the email from AMS about this issue.

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EMAIL Number 447

I send you (attached) my opinion for the President call about comments of the NSF intention to change the name of the Division of Mathematical Sciences.

\*\*\*\*

I support two solutions, with the previous clarification that I am Physicist working in Applied Mathematics. One alternative is to denominate the Division 'Division of Theoretical and Applied Mathematics'. Statistics could be include into the second group, and if the project is strictly Theoretical within the first. The other solution is to decline the new name and keep the things as they are. I do not have preference for any of them, although the first seems to me something more logic and with fear funding assignation, given the progressive extension of the Mathematics towards other multidisciplinary fields. These new fields have a significant research and industrial impact

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EMAIL Number 448

If it is not too late for my input already, here are a few thoughts.

I am strongly opposed to the name change from "mathematical sciences" to "mathematical and statistical sciences". While I do appreciate the

intention by the NSF to facilitate the funding, I question the rationale of doing so with an unfortunate choice of name change. Statistics IS a mathematical science, even though many practitioners of it may not need much of it to do it, but statistics is written and expressed in mathematical language, period. The proposed name change appears to unjustifiably elevate a mathematical subdiscipline to the level of an equal partner discipline. I see only problems that it may create in the long run, not an improvement.

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EMAIL Number 449

I hope that it is not too late for me to comment upon the proposal to change the name of the National Science Foundation's Division of Mathematical Sciences. I apologize for not getting my message to you before the December 1 target date (an especially embarrassing lapse, since I am on the AMS Science Policy Committee). My only excuse is the usual one of too many classes to teach and too many papers to grade.

I am deeply concerned by the proposed re-titling of DMS as the Division of Mathematical and Statistical Sciences. Changes in name are never insignificant -- not for people, and not for organizations. The proposed change would have profound implications for funding patterns in mathematics, in statistics, and throughout the Directorate for Mathematical and Physical Sciences, and those implications need to be carefully thought through before any action is taken.

Let me begin by affirming that statistics is a discipline that is distinct from mathematics. Some aspects of statistics are mathematical in nature, and others are not. Currently the mathematical aspects of statistics fall under the purview of DMS (which is, I would note, the Division of Mathematical Sciences, not just the Division of Mathematics). Re-naming DMS would reflect a new mission for DMS, in which new research areas -- including those parts of statistics that are not mathematical -- would be added to the Division's funding portfolio. To me, the key issue is the budgetary and programmatic impact of these expanded responsibilities on DMS.

Would the Division's total budget be increased, for example, in order to reflect its new responsibility for research areas that are statistical (but not mathematical) in nature? If not, then the change clearly threatens the level of NSF support for basic research in mathematics, including those areas of mathematics that support statistics. That would gravely undermine the NSF's mission to support fundamental research.

From a programmatic perspective, the proposed new name suggests equivalence between "mathematical sciences," on the one hand, and "statistical sciences," on the other. Would half of the re-named Divisions' attention be devoted to mathematics, and half to statistics? If so, then the attention given to mathematics, which is fundamental to

**Responses from AMS Members**  
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research in all the sciences, would inevitably be diluted. This, too, would undermine the NSF's mission to support basic research.

Indeed, although there are clearly aspects of statistics that are non-mathematical, I have to wonder whether they really belong in the same division as mathematics, or perhaps even anywhere in the Directorate of Mathematics and Physical Sciences. If there is a need to coordinate research in various aspects of mathematical and non-mathematical statistics, then that might be better achieved through some sort of cross-cutting initiative at NSF.

Thus I am opposed to the proposed change in the name of the Division of Mathematical Sciences. It would serve neither statistics nor mathematics well, and it will encourage both mathematicians and statisticians to focus on the things that divide them, rather than on the ideas, techniques, and issues that they have in common.

Thank you for the opportunity to contribute my opinion to this discussion.

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EMAIL Number 450

Because of the exemplary research done in statistics led by R.A.Fisher, P.C.Mahalanobis and C.R.Rao in the last century, some universities in India did have two separate Department of Mathematics and Department of Statistics running in parallel. But now, I think, the concept has become obsolete in India, with mathematics subsuming statistics. My opinion is that it would be a folly for the NSF to revert back to the old bifurcation, which India has discarded.

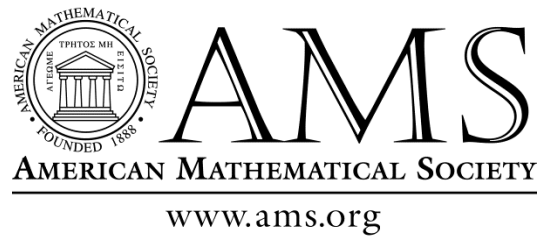
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EMAIL Number 451

Sorry for not getting this in sooner, but I did want to add my support to the AMS attempt to stop the DMS name change. I think the name change is a very bad idea. The name change either indicates (1) that Statistics is not a part of Mathematics (which I believe to be an unhealthy attitude) and/or (2) that Statistics is somehow a more important part of Mathematics than other areas (an even more unhealthy attitude). I am also concerned that the "Sciences" part in the phrase "Statistical Sciences" in the new proposed name will open the door for people looking for funding in an allied science to apply to the DMS. The NSF has separate divisions for the other sciences and while it is great that there is collaboration between the divisions, it would be terrible for the very limited funding Mathematics already receives to be distributed to other areas where the mathematical aspects may be secondary. (Notice that in

the phrase "Statistical Sciences", Statistical is an adjective modifying the noun Sciences. Thus indicating the Sciences part has precedence not the Statistical/Mathematical part.)

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**Presentation by AMS President, Eric Friedlander,  
at the Joint Policy Board for Mathematics Meeting**

**October 31, 2011**

NSF's Division  
of  
Mathematical  
Sciences

American  
Mathematical  
Society (Eric  
M.  
Friedlander)

Importance

Preserve DMS  
name and  
mission

AMS  
Response

Quotes

Quotes

# NSF's Division of Mathematical Sciences

American Mathematical Society (Eric M. Friedlander)

**RETAIN** the **name** and the **mission!**



# Importance

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of  
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- I am enormously grateful for **personal** funding.
- The **AMS** and the **NSF** work well together to build programs which support mathematics, for example the Mathematics Research Communities.
- The National Science Foundation is by far the **most important** source of funding for basic research for core mathematics.
- The NSF commands great **gratitude** and **respect** throughout the mathematical sciences community. The NSF is the **best** of federal agencies, with the most dedicated and fair-minded staff.

# DMS name is appropriate

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of  
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- Breadth of DMS's 10 programs, one of which is Statistics: algebra & num thy, analysis, applied math, combinatorics, comp. math, foundations, geom analysis, math bio, probability, statistics, topology (that's 11 programs!).
- Explicit inclusiveness on the name "DMS"
- Common use of terms "Mathematical Sciences" and "Statistics"

# DMSS name is inappropriate

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of  
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- WHY single out a single program which currently constitutes roughly 10% of DMS?
- Proposed name change is divisive (see comments below).
- Likely tendency to isolate Statistics if name is changed is **detrimental** to the mission of DMS.

# Relative sizes

NSF's Division  
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Sciences

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Mathematical  
Society (Eric  
M.  
Friedlander)

Importance

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mission

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## ■ “Core” proposals received & funding rates

### Statistics/DMS:

'08:  $213/2589 = 8.2\%$                       38 %/ 36 %

'09:  $242/2732 = 8.9\%$                       46%/ 40 %

'10:  $242/2978 = 8.1\%$                       37%/ 32 %

(e.g., in FY2010, 90 Statistics proposals funded out of 961 proposals funded in “core areas”)

### Journal articles: CIS-ED\* /MathSciNet

'08:  $7740/78,369 = 9.9\%$

'09:  $7608/77,969 = 9.8\%$

\* Current Index of Statistics Extended Data Base  
(Statistics, Probability, and related fields)

# Basic Research Mission

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- **NSF's Mission:**

Discovery for progress

Imagination and creativity

Breadth and bridges

- Committee of Visitors: **Emphasize the Core**

- Future innovations involve unexpected partnerships and inputs!

# AMS Response

NSF's Division  
of  
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- Personal communications:  
with AMS Executive Committee, Board of Trustees, Policy  
Committee Chairs, AMS Council
- approximately 50 additional mathematical scientists (e.g.,  
Peter Bickel, David Siegmund, Ed Waymire).
- Count of comments: **20 in favor, 339 against**  
**94.4 % AGAINST**  
(includes comments from some statisticians)

# Quotes 1 & 2

NSF's Division  
of  
Mathematical  
Sciences

American  
Mathematical  
Society (Eric  
M.  
Friedlander)

Importance

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mission

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Changing the name of DMS affects far more than merely the National Science Foundation. It risks destabilizing a half-century-long effort to bring together many areas under a common name.... Dismissing that name because someone claims it is not inclusive is both ahistorical and foolhardy.

\*\*\*\*\*

I had lunch with my colleague Mary Wheeler, on the entirely different end of the spectrum of mathematics than the one I sit in, and she agree[d] very vociferously with me. ...

Mathematics, Combinatorics, Mathematical Biology, Computation, Engineering Mathematics and Statistics? What a name! ... It is all mathematics. By adding the name statistics you imply it is *\*not\** mathematics. I shudder to think what the world would be coming to—that is even worse than where it is going—if statistics were not mathematics.

# Quotes 3 & 4

NSF's Division  
of  
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Friedlander)

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mission

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Response

Quotes

Quotes

The current name is an inclusive one, emphasizing a broad area of fundamental research. Adding "Statistical Sciences" to it is a very bad idea because it singles out one of the many areas within it for special treatment, and I can not think of anything more divisive and destructive than this.

\*\*\*\*\*

As a former Division Director of DMS, I also would argue against the proposed name change ... Like many mathematicians, I have also been involved in research, applications and teaching of statistical methodology. From personal experience, I have found it difficult to accept the argument that Statistics is not a mathematical science (which I have heard for years from many friends and colleagues in statistics).



# Quotes 5 & 6

NSF's Division  
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Sciences

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Mathematical  
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Friedlander)

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If the name change is intended to presage a shift of funding or emphasis, then the discussion should be about *\*that\**, rather than about an apparently-symbolic change such as the name of the division. If the goal is to attract new funding through new initiatives involving Statistics, then the focus should be on formulating those initiatives not changing the name of DMS.

\*\*\*\*\*

The proposed name change is a truly terrible idea. It is difficult to believe that it would be advocated by anyone .