American Statistical Association

Promoting the Practice and Profession of Statistics

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Francis Collins, MD
Director, National Institutes of Health
31 Center Drive
Bethesda, MD 20892

Dear Director Collins:

I write to you as president-elect of the American Statistical Association (ASA); as program director for an NIH T32 predoctoral biostatistics training program and undergraduate Summer Institute for Training in Biostatistics (SIBS) program, both supported by the NHLBI; and as a principal investigator for a multi-institutional NCI P01 program project, "Statistical Methods for Cancer Clinical Trials." The ASA is the world's largest community of statisticians, with more than 18,000 members, headquartered in Alexandria, Virginia. The association supports excellence in the development, application, and dissemination of statistical science; publishes several leading journals; organizes the annual Joint Statistical Meetings; and promotes the discipline through education and advocacy.

As you know, recent reports continue to highlight the severe shortage of PhD and master's-level quantitative scientists, including biostatisticians and bioinformaticians, at a time when the volume of vast, complex data is expanding at unprecedented rates. The highly regarded 2011 McKinsey Global Institute report, "Big Data: The Next Frontier for Innovation, Competition, and Productivity," projects U.S. demand for individuals with "deep analytical skills" to exceed the supply by 140k to 190k positions by 2018, with many of these in the health sciences. Indeed, the NIH Advisory Committee to the Director (ACD) Biomedical Research Workforce Working Group Report underscores the serious lack of quantitative scientists in biostatistics and bioinformatics in biomedical research. The 2012 Institute of Medicine report, "Evolution of Translational Omics: Lessons Learned and the Path Forward," calls for biostatisticians and bioinformaticians to be part of all translational research projects as true collaborators to ensure proper design, analysis, validation, and implementation of genomic predictors for disease diagnosis and treatment. The full potential of the rich data resources being generated by basic and translational scientists can only be realized through significant involvement of quantitative scientists, making the shortfall of highly skilled individuals with this training a national crisis.

I am aware that the Data Informatics Working Group (DIWG) Draft Report to the ACD urges building quantitative science work force capacity through increased NIH funding for a serious and substantial training grant program and an enhanced peer-review process involving experts in specialized biostatistics and bioinformatics training. My experience from the vantage point of the ASA, in guiding predoctoral biostatistics trainees, and in encouraging U.S. undergraduates to pursue graduate training in biostatistics in nine years of directing a SIBS program, lead to my strong support for these recommendations. A targeted NIH training model to address the gap between supply of and demand for quantitative scientists with the skills to contribute to biomedical research will have a profound impact. Moreover, the opportunities presented by such training will be a potent motivator to draw more U.S. students to these disciplines, in which they have long been underrepresented.

I would like to offer my assistance and that of the ASA as you consider these recommendations. We are available to discuss the broader context that inspired them, provide information about the unique features of and challenges facing quantitative science training, and serve on an ad hoc peer-review study section called for in the DIWG report. Please do not hesitate to contact me at your convenience.

Sincerely,

Marie Davidian, PhD
William Neal Reynolds Professor of Statistics, North Carolina State University
President-elect, American Statistical Association

cc: Lawrence Tabak, DDS, PhD