The Society for Integrative and Comparative Biology
1313 Dolley Madison Boulevard, Suite 402, McLean, VA 22101
703/790-1745 • 800/955-1236

March 14 2011

Dr. Subra Suresh, Director
National Science Foundation
4201 Wilson Boulevard
Arlington, VA 22230

Dear Dr. Suresh,

We were very disappointed to hear that NSF is not planning to continue the Graduate Science, Technology, Engineering and Mathematics (STEM) Fellows in K–12 Education (GK-12) Program in the Division of Graduate Education. The amount of research, education and outreach that happens because of this program is very impressive. Graduate fellows are supported and their teaching and outreach skills are enhanced, teachers become more familiar with the science, and high school students get excited about STEM careers. A large number of the GK-12 Fellows and programs are in the areas represented by the Society for Integrative and Comparative Biology (2500 members), at many of the nation's top universities. They are also very much in evidence at several of our field stations and marine laboratories.

Graduate students supported through GK-12 are conducting research, often associated with NSF-funded projects with their mentor as PI. In effect, this is a way to train one more graduate student in a research lab, for one to two years. Faculty rarely have enough funding in any NSF grant to fund more than one grad student as an RA, so others serve as TAs in the university departments. This program has provided another option, and one that has helped local teachers, K-12 students, as well as the fellows themselves. The teaching and presentation experience in this program goes far beyond the training that a TA usually gets in the university.

GK-12 fellows complete their advance degrees as rapidly as do other graduate students, based on the evaluation of the GK-12 Program. One criticism I have heard is that the graduate students are not doing as much research during a year as a fellow, as they would if they were an RA, or had a NSF Graduate Research Fellowship or IGERT support. That may be true, given the 15 hours

required in the schools each week, but the fellows are gaining other important skills. They are certainly getting as much or more time for research compared to being a TA for undergraduate courses, the other common path for science grad students. Plus, the number of RA positions is very limited in any lab or department, and there are extremely few GRF and IGERT slots nationwide.

GK-12 not only helps produce more PhD level scientists, but ones who are better teachers and who have a larger "broader impact" on society (an NSF criterion). If NSF were to put the same amount of money into funding more RA and GRF positions, it is possible more research would get done, but all those other benefits would not accrue, including the effects on teachers and K-12 students. Also, to encourage graduate training, such a program would have to protect the funding so that it is really used for graduate students and not for technicians or other priorities. That is something GK-12 does extremely well.

We are very aware of the impact of the GK-12 program on graduate education and research, and on the K-12 schools, students and teachers involved. For a very modest cost per student/teacher pair (under $50,000/year), this program is delivering quite a lot. Also, the program as it exists has always been experimental, with each program developing something altogether unique. I would like to see the most successful of these programs become models for a permanent GK-12 type program that is spread widely to more and more schools throughout the country.

We all want a permanent pipeline from K-12 schools, to universities, to STEM careers. Unfortunately, university professors do not have the time to interact with K-12 schools at anywhere near the level needed to make this happen; graduate students (needing support) do. That is the critical finding of GK-12, which should now be incorporated into K-12 science education nationwide. If it is not possible to continue the program, there should be a very extensive analysis of all the individual programs supported by GK-12 to see what worked, and how it can be incorporated into a future GK-12 type program at NSF; there really is no other program that makes this type of strong university-school connection, and it should not be dropped. We need a way to connect the "ivory tower" with the real world of K-12 on a permanent basis, and GK-12 has pointed the way.

Sincerely,

Kenneth P. Sebens, President, SICB
and Professor, Department of Biology, University of Washington
Professor, UW School of Aquatic and Fisheries Sciences
Director, UW Friday Harbor Laboratories

Cc: Dr. James H. Lightbourne, Dr. Sonia Ortega, Dr. David Conover, Dr. Joan Ferrini-Mundy