

AAAS Final Narrative Report on the WISC Program

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Summary

The Women’s International Scientific Cooperation (WISC) project (59-5133) was administered by the AAAS Office of International Initiatives from 2001 – 2003 and funded by \$1.4 million in grants from NSF. WISC increased international scientific research opportunities for women by providing travel support to 226 U.S. scientists from a wide variety of disciplines and enabling them to visit 220 research partners in 63 countries across the Americas, Africa, Asia, and Europe. WISC supported international scientific research activities and career advancement for a key demographic across many disciplines.

Introduction

The Women's International Scientific Collaboration program (WISC) provided travel grants for female scientists from the United States to travel to foreign countries to collaborate with foreign scientists. WISC, which operated over the course of 6 rounds from 2001 to 2003, was administered by AAAS using funding grants from the National Science Foundation. Total WISC funding amounted to \$1,414,730. WISC solicited proposals from scientists and awarded 193 travel grants, allowing over 200 scientists to travel to 63 foreign countries.

The WISC Program and Its Results

WISC began in August, 2000 when the National Science Foundation funded a grant proposal from AAAS in order to foster international collaboration in the sciences and to foster the participation of women and recent PhD. recipients in international scientific research. WISC awarded competitive travel grants to allow scientists from the United States, particularly female scientists who had recently received their doctoral degrees, to collaborate with foreign scientists. Additionally, male scientists from the United States were able to apply for WISC grants in order to collaborate with female scientists abroad.

The WISC program reviewed proposals and awarded travel grants from 2001 to 2003. Two rounds of grants were awarded in each year of the program. While the success rate of WISC applicants varied from round to round, an average of 30.1% of applicants received WISC travel grants over the course of the program. A total of 226 American scientists participated in the WISC program, 193 as PI's and 33 as co-PI's. Additionally, 220 foreign scientists from 63 foreign countries participated in the WISC program as collaborators. Including foreign collaborators, about 32% of WISC participants qualified as recent PhD. recipients, meaning that they had finished their PhD. within the previous 6 years of participating in the WISC program.

In 2001, each of the two WISC rounds encompassed only travel grants to Central and Eastern Europe, focusing on countries in the former Soviet Union. At the time, the purpose of the WISC program was to increase collaboration between American scientists and scientists from the former Soviet Union. In 2001, AAAS awarded 11 WISC grants for a total of 15 scientists from the United States, 11 PI's and 4 co-PI's, to visit various Central and Eastern European states. Subsequently, in 2002 and 2003, the NSF and AAAS expanded the WISC program to include additional geographic areas for scientific collaboration, adding the Americas, Africa, and Asia in 2002 and Western Europe in 2003. Considering the small extent of the program over its first two rounds, this report focuses primarily on analyzing the WISC grants awarded in 2002 and 2003. The expansion of the WISC program into other geographic areas coincided with the general expansion of the program to accommodate additional grants. By WISC's third year of operation, the program expanded to accommodate 51 approved grants in each round. The expansion of the WISC program can be seen in Charts 1 and 2.

Chart 1. WISC Grants Approved in Each Round of the WISC Program

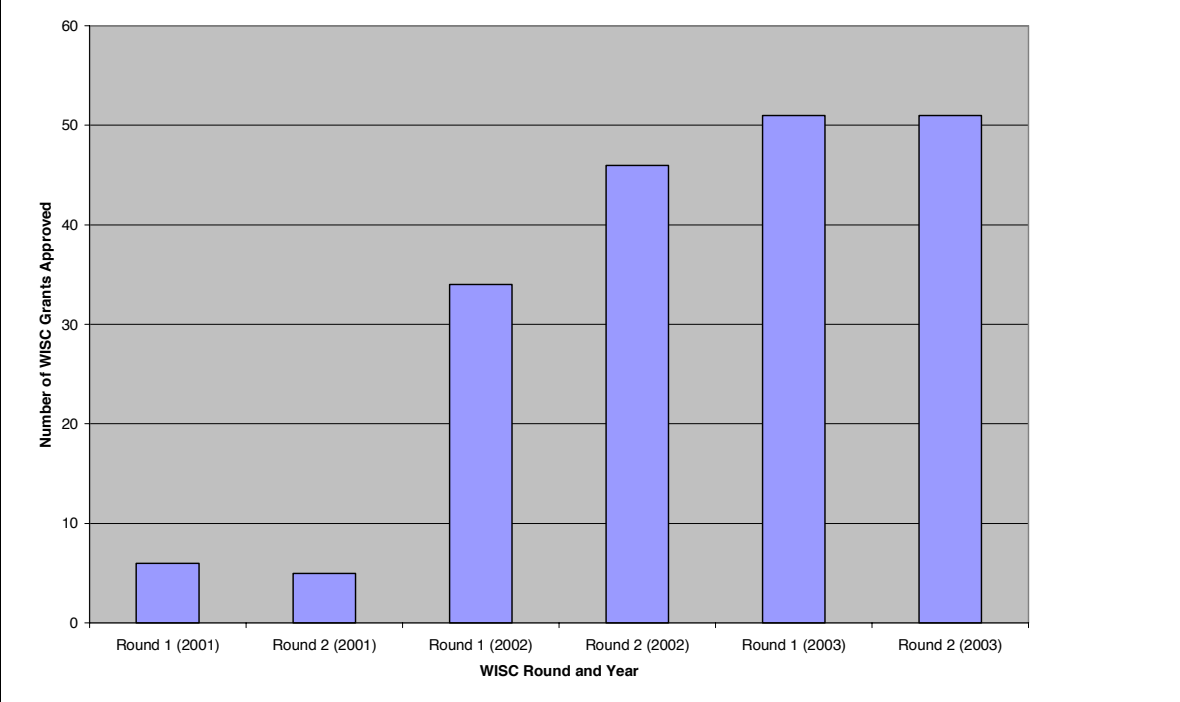
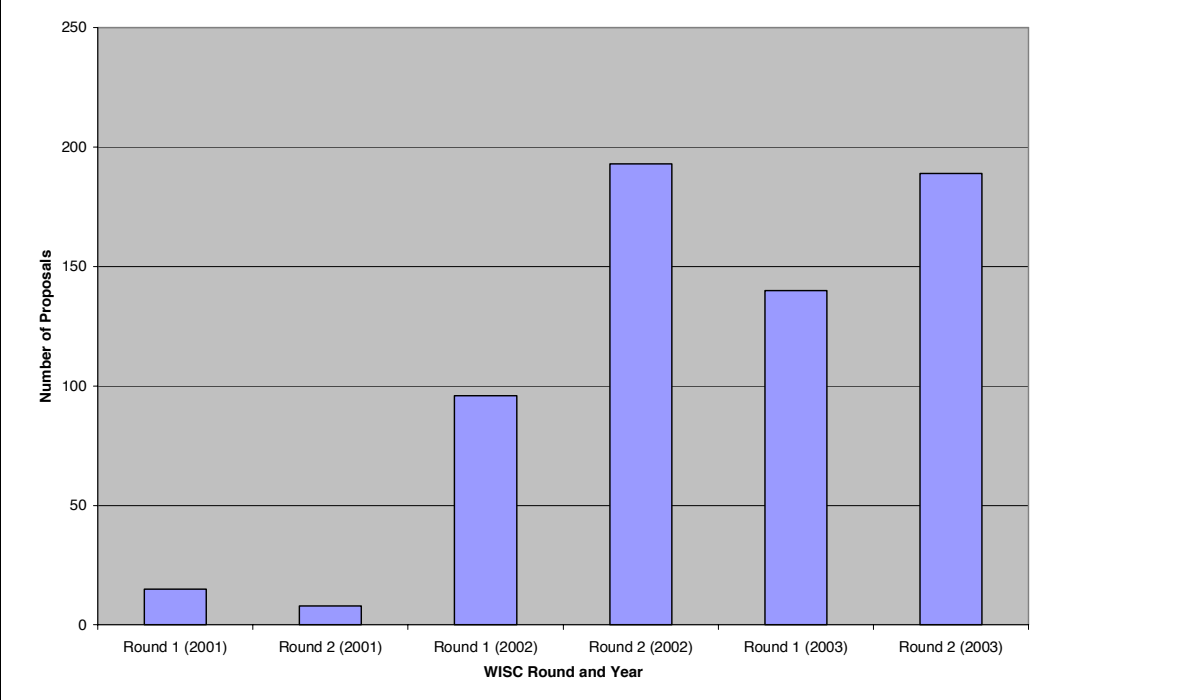


Chart 2. Proposals Received in Each Round of the WISC Program



WISC Funding and Budget

In order to accommodate the expansion of the WISC program into additional countries and geographic regions, the NSF appropriated additional funds to AAAS. NSF funds awarded to AAAS for the purposes of administering the WISC program and awarding the WISC travel grants totaled \$1,414,730. The NSF made grants to AAAS funding the WISC program from August of 2000 to August of 2002. These grants remain in effect until September of 2006. The original WISC grant from August 2, 2000 was amended 5 times to accommodate additional grants from the NSF and expansion in the regions and countries allowable for travel under the grant program. Table 1 shows each of the individual NSF grants which funded the WISC program, along with their dates and respective amounts. It should be noted that the fifth grant shown in Table 1 was a grant from the Department of Energy to AAAS directed at a separate project, ARSA, which was given to AAAS through the NSF WISC grant. Hence, the total amount of funding AAAS received from the NSF that was actually directed towards WISC was \$1,414,730.

In the original WISC grant, AAAS received \$132,757 for the purpose of awarding 20 travel grants over 3 program rounds. By the end of the program, WISC received approximately 10 times the amount of the original grant in total grants. Similarly, WISC awarded 10 times the number of travel grants submitted in the original proposal. Further, the proposed budget for the WISC program, as well as the actual budget, can be seen in charts 3 and 4, respectively. Chart 4 indicates that 13% of the WISC funds remain unspent. Further, Chart 4 shows that AAAS was over budget for total salary and benefits (which includes fringe benefits) and for other expenses (such as domestic travel and advertising for the WISC program). WISC was under budget for travel grant expenses.

<i>NSF Grant No.</i>	<i>Date Awarded</i>	<i>Start Date</i>	<i>End Date</i>	<i>Amount</i>	<i>Total Amount</i>	<i>Sources</i>
INT-0003057	August 2, 2000	October 15, 2000	September 30, 2002	\$132,757	\$132,757	NSF
INT-0003057 (Amendment 001)	August 15, 2001	August 15, 2001	September 30, 2002	\$80,000	\$212,757	NSF and DOE
INT-0003057 (Amendment 002)	September 18, 2001	September 18, 2001	September 30, 2002	\$32,000	\$244,757	NSF and DOE
INT-0003057 (Amendment 003)	September 28, 2001	September 28, 2001	September 30, 2002	\$450,757	\$695,514	NSF
INT-0003057 (Amendment 004)	June 4, 2002	June 4, 2002	September 30, 2002	\$99,809	\$795,323	NSF and DOE
INT-0003057 (Amendment 005)	August 1, 2002	August 1, 2002	September 30, 2005	\$719,216	\$1,514,539	NSF

Chart 3. Proposed WISC Program Budget

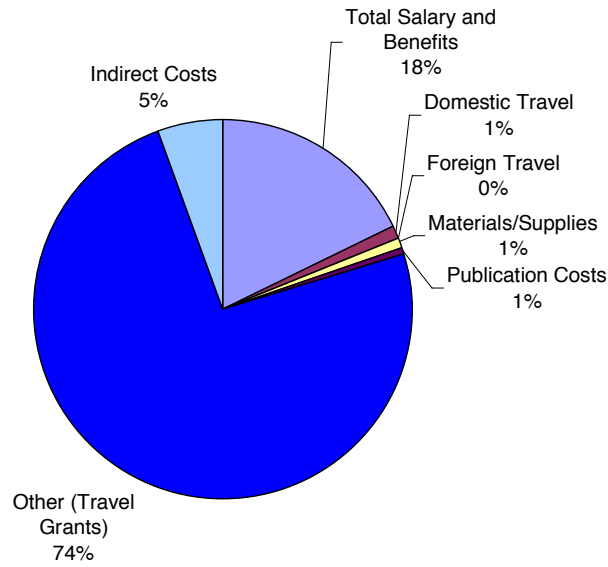
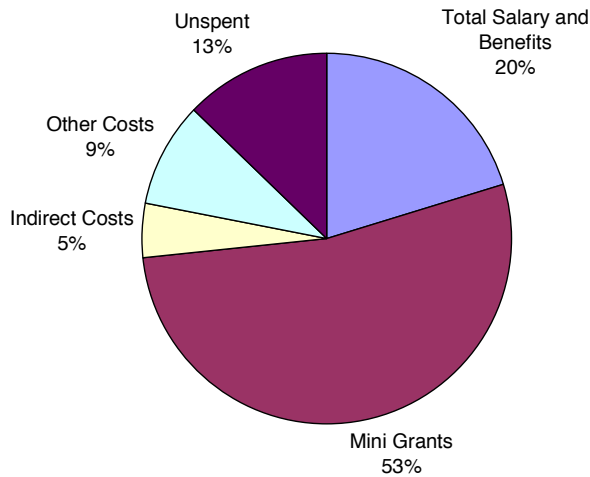


Chart 4. Actual WISC Program Budget



For its first year of operation, WISC awarded travel grants of \$4,000 for travel to countries in Central or Eastern Europe. In subsequent years, WISC travel grants varied in size from \$4,000 to \$5,000 depending on the country visited by each WISC participant. In particular, countries in Africa and Asia received grants closer to \$5,000, owing to the

increased expense in traveling to countries in Africa and Asia. WISC grants were given as reimbursements for travel expenses.

Geographic Distribution of the WISC Program

In using their travel grants, WISC participants visited a diverse group of countries. For administrative purposes, countries visited by WISC participants were grouped into one of eight geographical regions: Africa, the Americas, Central and Eastern Europe, Western Europe, the Middle East, the Near East, East Asia and the Pacific, and South Asia. Not every region was included in each WISC round. Specifically, the first year of the WISC program included only Central and Eastern Europe, whereas Western Europe was only included in the final year. The other WISC regions, Africa, the Americas, East Asia and the Pacific, the Middle East and the Near East were included in WISC rounds in 2002 and 2003. Additionally, WISC participants visited some regions more often than other regions, taken as a percentage of the total number of WISC grants in a given round. The regional distribution of all travel grants given during the WISC program can be seen in Chart 5. As Chart 5 indicates, the regions most often visited by WISC participants were the Americas, East Asia and the Pacific, and Central and Eastern Europe.

The least visited regions included the Near East, the Middle East, and South Asia, as well as Africa, to a lesser extent. The low number of visits to Western Europe is due to the fact that it was only included in the final year of the WISC program. Within the least visited regions, few countries within the region were included in the program. In the Near East and Middle East, only three countries were included in the WISC program, Israel, Turkey and Oman. Similar patterns occurred with WISC participants who visited Africa. While the African region encompassed the entire continent of Africa, the countries visited by WISC participants were mostly sub-Saharan. Most of the African nations visited by WISC participants were concentrated in Eastern and Southern Africa. Figure 1 shows a map of all countries visited by WISC participants.

The regional distributions of travel by WISC participants for the years 2002 and 2003, comprising the third through sixth rounds of the program, are included in Appendix A. Regional distribution varies from year to year due to the inclusion of new regions in successive years of the WISC program. However, the regional distribution tends to vary less within two rounds of the same year.

Scientific Disciplines in the WISC Program

In addition to traveling to a wide variety of countries, WISC participants represented a wide variety of scientific disciplines. The distribution of WISC grants by scientific discipline for all rounds of the WISC program can be found in Chart 6. Chart 6 shows that the distribution of scientific disciplines among WISC participants was not uniform: in particular, biology constituted, by far, a plurality of the disciplines of WISC participants.

Chart 5. Regional Distribution of WISC Travel Grants for All WISC Rounds

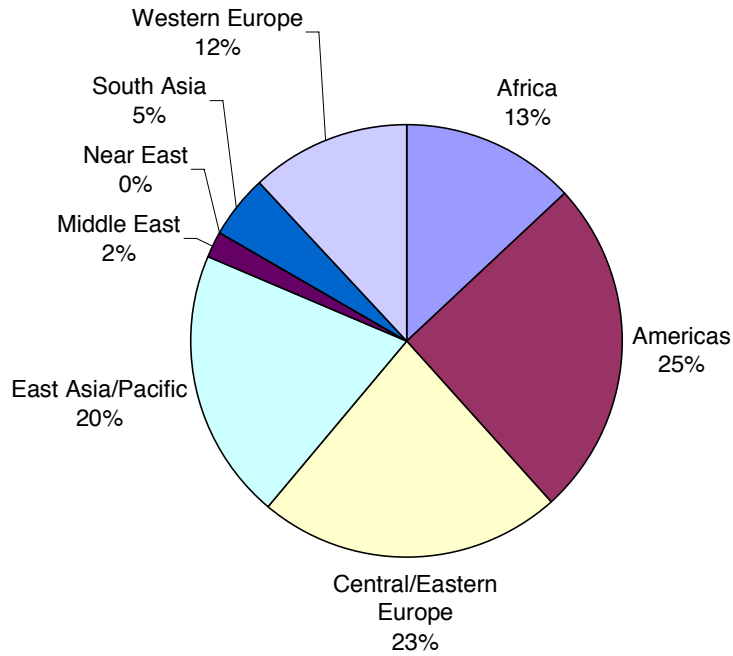


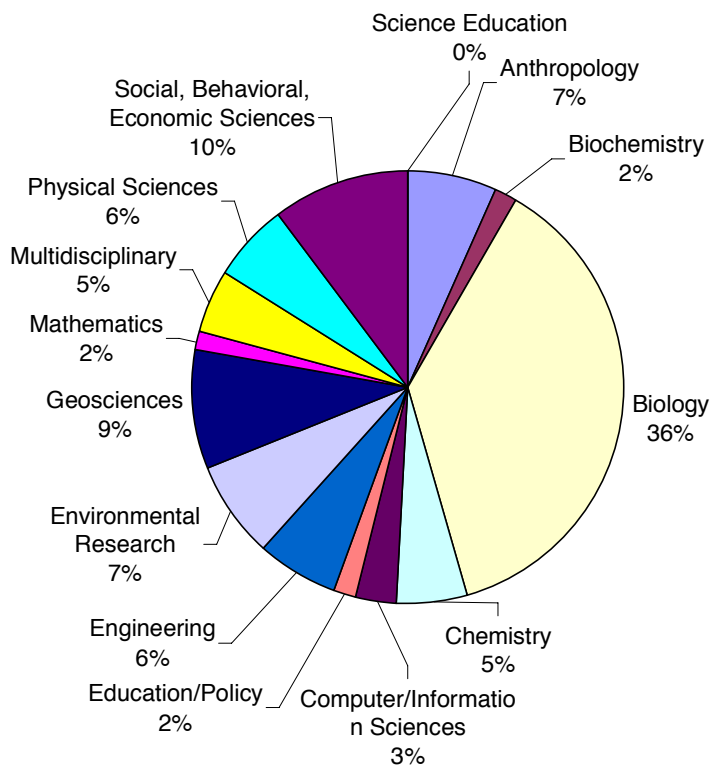
Figure 1. Map of All Countries Visited by WISC Participants (shown in red).



Whereas the regional distribution of WISC participants tended to vary only slightly from round to round within the same year, the distribution of scientific disciplines varied considerably from round to round with the exception that biology was always the largest

discipline represented by WISC participants. Several disciplines were frequently underrepresented in WISC participants, particularly biochemistry, mathematics, and science education and policy. Other disciplines were represented on a relatively consistent basis, including anthropology, geosciences, environmental research, and social, behavioral and economic sciences. The representation of the remaining fields, such as chemistry, computer and information science, engineering, and the physical sciences varied considerably from round to round.

Chart 6. Distribution of WISC Grants by Scientific Discipline for All Rounds.



There are several possible reasons for the significant discrepancy between biology and all other scientific disciplines represented by WISC participants. These discrepancies may be caused by a bias in the distribution of women in scientific fields. This is to say that if women in science were more likely to focus in biology rather than physics, for example, the skewed distribution of WISC grants would follow. If such a biased distribution of female scientists were the cause of the skewed distribution of WISC grants, WISC could serve as an element of a larger effort to bolster the number of female scientists in disciplines where they are underrepresented. Additionally, the discrepancy may simply be the result of the large number of sub disciplines covered by biology. While it is certainly the case that each of the scientific disciplines identified by the NSF encompasses a broad field of study, this notion is particularly true of biology. Given the immense number of sub-fields within biology, it is possible that there is greater diversity in scientific fields among WISC participants than appears at first.

The distributions of WISC participants by scientific discipline for the years 2002 and 2003, comprising the third through sixth rounds of the program, are included in Appendix B.

Acceptance Rates of Applicants to the WISC Program

The average acceptance rate of proposals to the WISC program, taken over all three years of the program’s operation, was approximately 30%. Specifically, different regions and scientific disciplines had differing rates of acceptance for the program. Furthermore, the acceptance rates for various regions and scientific disciplines would vary from year to year. The acceptance rates of WISC proposals by region for the 2002 and 2003 rounds can be found in Chart 7. The relative distribution of WISC grants by region, seen in Chart 8, also varied, though to a lesser extent than regional acceptance rates. The acceptance rates of WISC proposals by scientific discipline over the course of the course of the entire program can be seen in Chart 9. The relatively consistent distribution, in light of varying acceptance rates, especially for underrepresented regions such as Africa and South Asia, demonstrates that the WISC grant process was not biased for or against any region in its selection process. Effectively, WISC attempted to maintain regional diversity while distributing grants to the best candidates from each region.

Chart 7. Acceptance Rates of WISC Proposals for 2002-2003 by Region

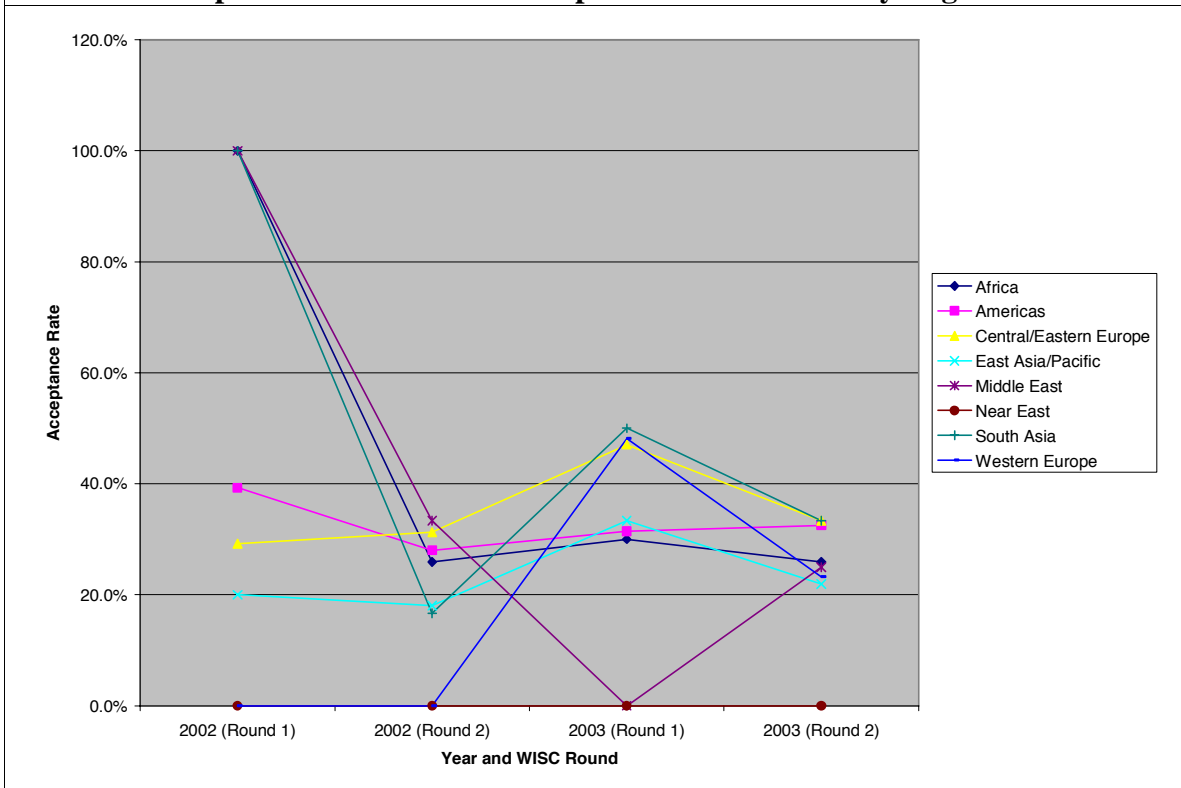


Chart 8. Regional Distribution of WISC Grants from 2002-2003

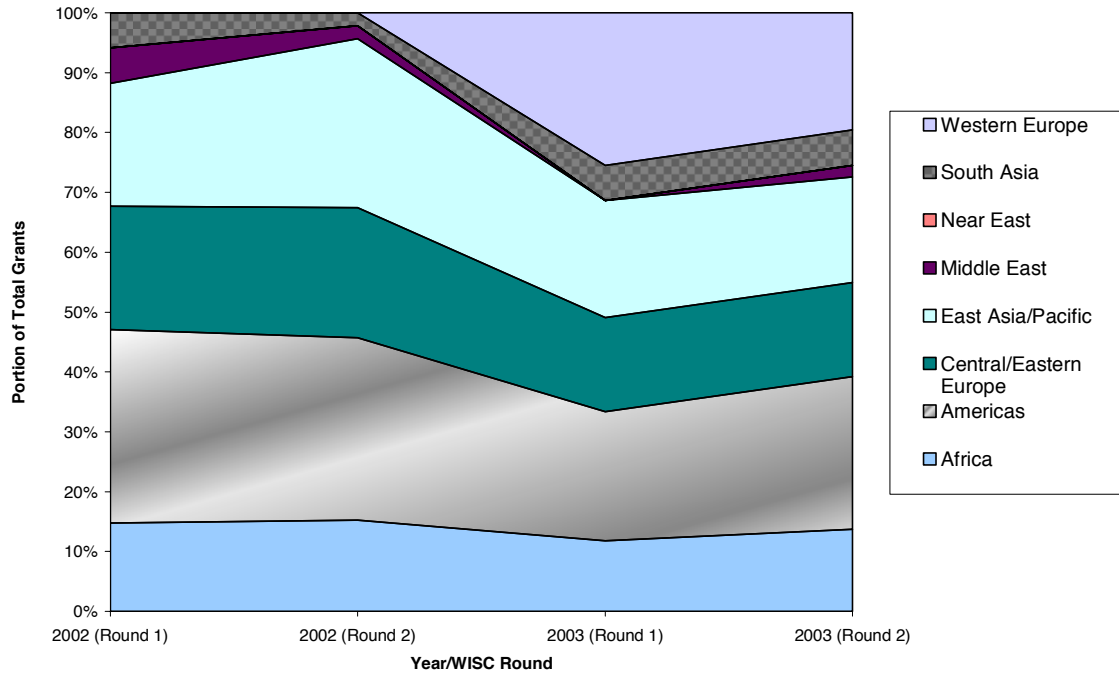
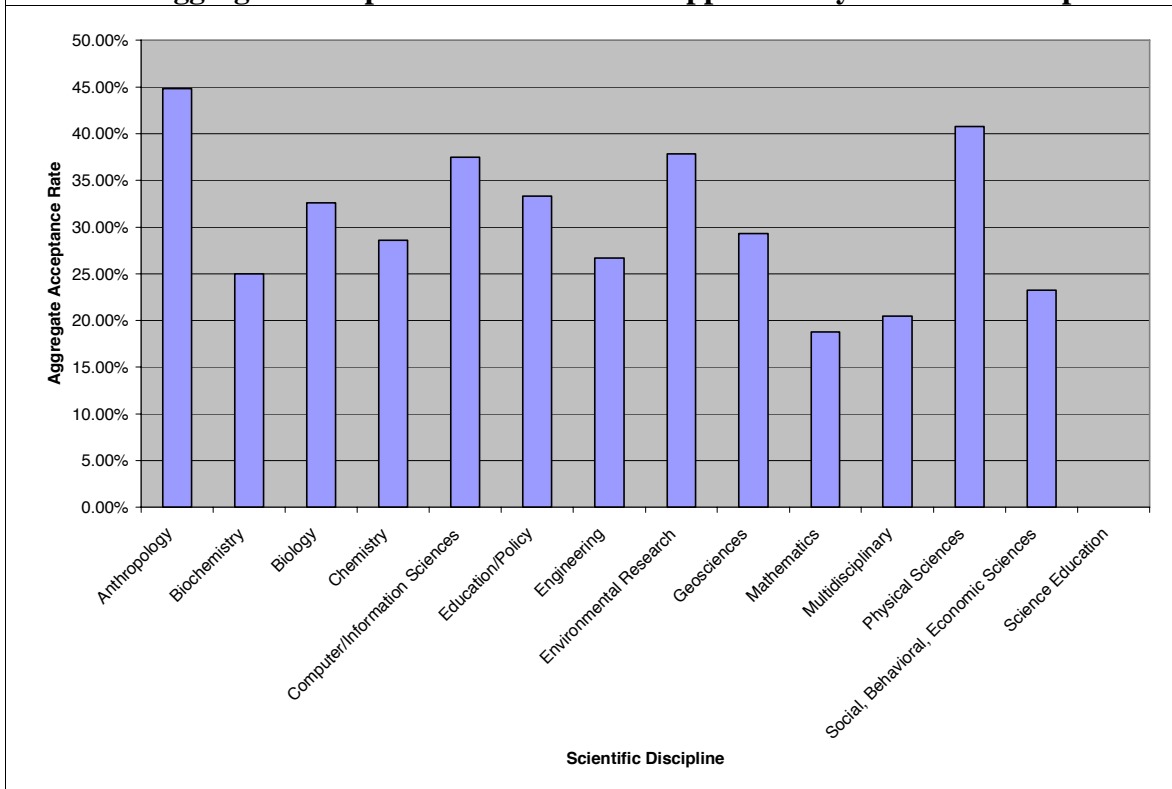


Chart 9. Aggregate Acceptance Rate of WISC Applicants by Scientific Discipline



Reactions to the WISC Program

Based on a survey of WISC recipients by AAAS staff reaction participants to the program was very positive. One of the goals of the WISC program was that the participants, through their collaborations, would produce ideas for future investigations and research which they could then submit to the NSF or another funding organization. In many cases WISC was able to meet this goal. Several WISC participants received significant amounts of funding for proposals created as a result of collaborations during the WISC program. Several participants, such as Liz Walsh and Robert Wallace, expressed the sentiment that, had it not been for the funding they received through WISC, their subsequent proposals would never have received funding. Other participants, such as Carol James, noted that their experiences in the WISC program helped advance their careers in science and academia. In her particular case, Carol James noted that her WISC experience contributed to her being awarded tenure at Sam Houston State University. Another participant, Lisa Curran of the Yale School of Forestry and Environmental Studies, noted that the WISC program gave her an opportunity to change the focus of her studies within an already established academic career. Almost all other respondents had very positive statements to make about WISC in general.

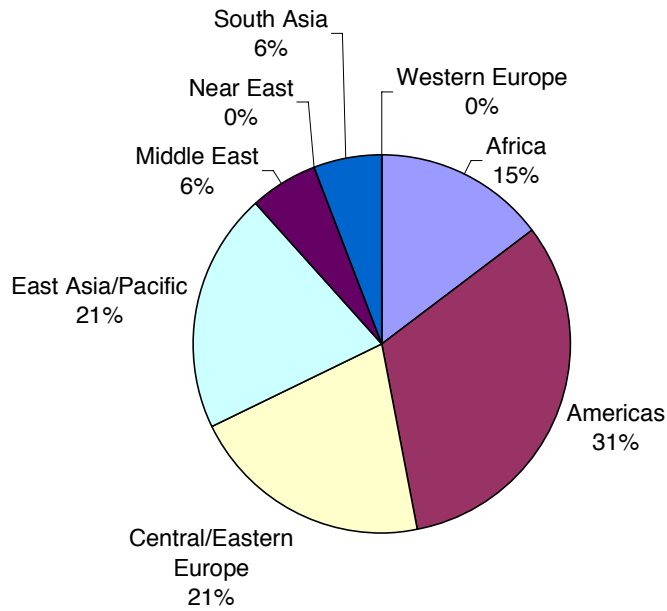
Recommendations and Conclusions

Any future versions of the WISC program would benefit by maintaining participation in frequently visited regions, increasing participation in infrequently visited regions, and improving the diversity of countries visited within given regions. The particular inclusion of additional Middle Eastern nations, as well as the nations of Sub-Saharan Africa, should be a particular goal of any future program similar to WISC. Further, addressing the discrepancy in the distribution scientific disciplines could form a goal of any future programs similar to WISC, though the cause of the discrepancy is likely more than a single program would be able to counteract.

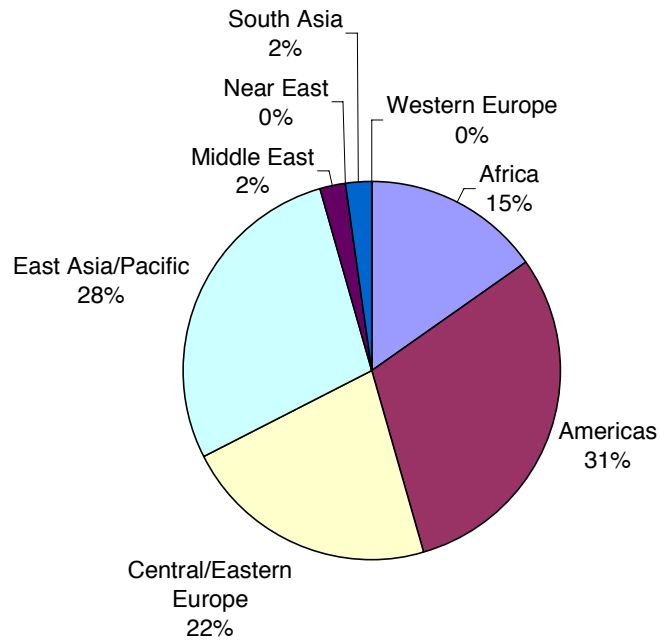
Overall, the WISC program successfully scaled its distribution of travel grants to its increases in funding from the National Science Foundation. A tenfold increase in WISC funding from the NSF led to a tenfold increase in the number of travel grants distributed from the original WISC proposal to the end of the program. In total, WISC made a positive impact on the careers of nearly 450 scientists, consisting of 226 American WISC participants along with 220 foreign collaborators. As the reactions of WISC participants show, the travel grants provided by WISC, in lieu of grants for research, served a valuable role to advance the careers of female scientists in the United States and abroad.

Appendix A – Geographic Distribution of the WISC Program for 2002 and 2003

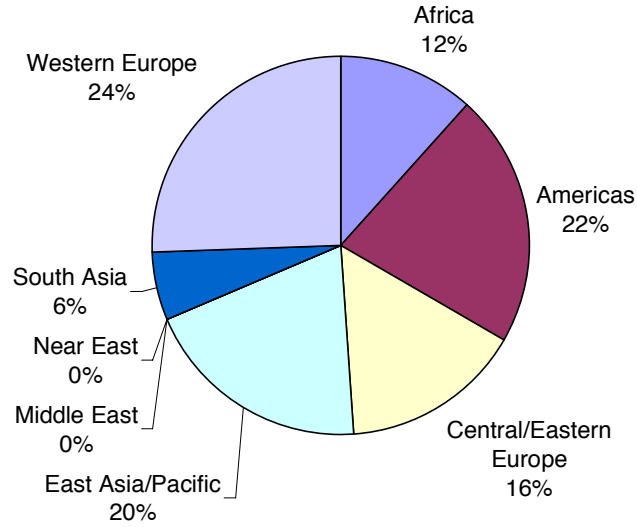
Regional Distribution of WISC Travel Grants (Round 1, 2002)



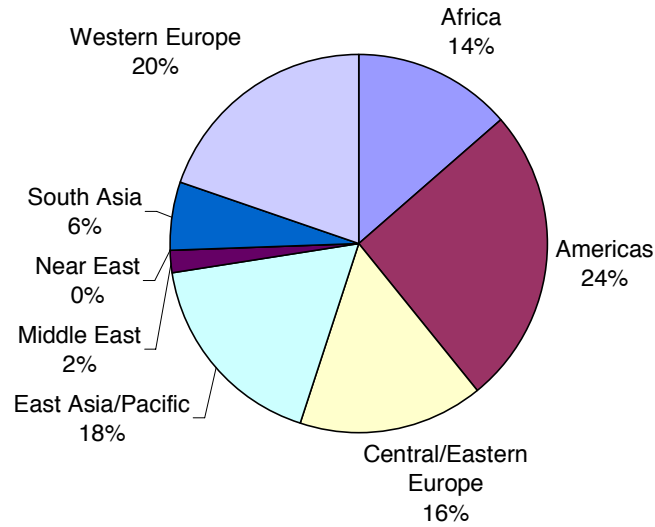
Regional Distribution of WISC Grants (Round 2, 2002)



Regional Distribution of WISC Travel Grants (2003, Round 1)

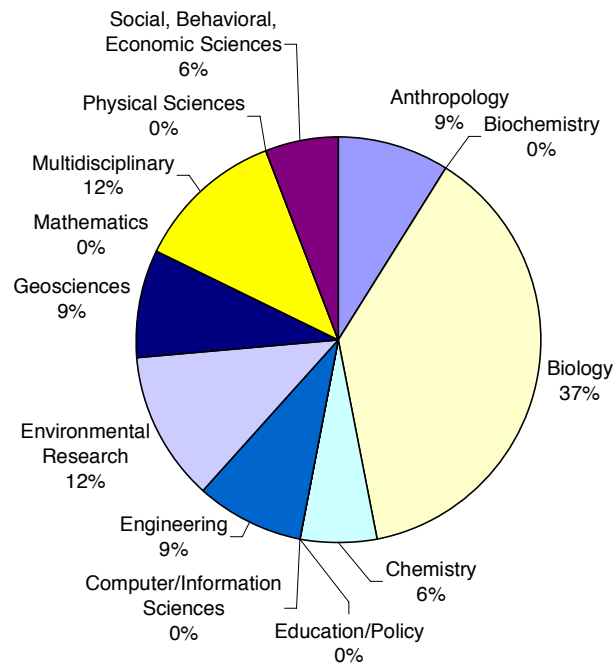


Regional Distribution of WISC Travel Grants (2003, Round 2)

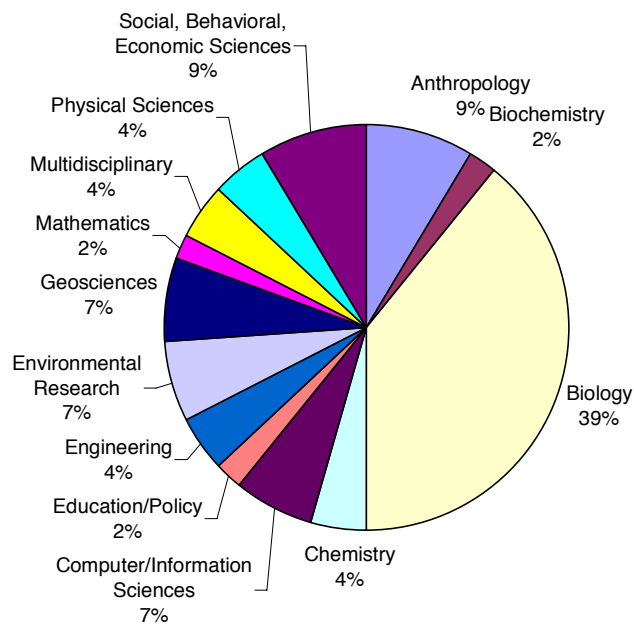


Appendix B – Scientific Disciplines in the WISC Program for 2002 and 2003

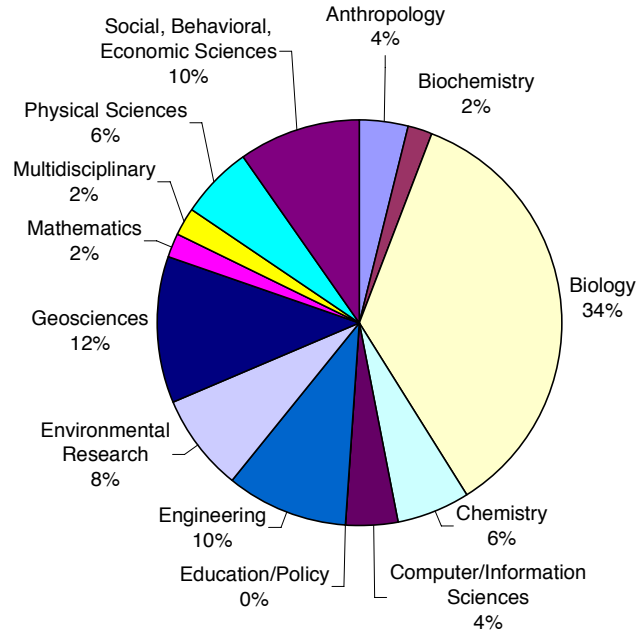
Distribution of Scientific Disciplines in WISC Grants (2002, Round 1)



Distribution of Scientific Disciplines in WISC Grants (Round 2, 2002)



Distribution of Scientific Disciplines in WISC Grants (2003, Round 1)



Distribution of WISC Participants by Scientific Discipline (2003, Round 2)

