

**Evaluation of the
Fogarty International
Research Collaboration
Awards (FIRCA)
Program: Phase II
Outcome Evaluation**

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Foreword

As a prologue, it should be noted that the following report is a historical document pertaining only to the operations of the Fogarty International Research Collaboration Awards (FIRCA) and AIDS-FIRCA grants awarded between calendar 1992 and 2003. Several key changes have been made in both programs since 2003, many of which address the recommendations in this report and are as follows:

FIRCA

- In 2003, FIC asked the NIH ICs to consider helping to fund the successful FIRCAs from their grantees. Many of the ICs responded positively and provided significant co-funding. In 2005, many NIH ICs joined NIEHS (a partner since the 2002 PA) as FIRCA program partners, including: NCCAM, NEI, NIA, NIAAA, NIBIB, NIDCD, NIDCR, NIDA, NIEHS, NINDS, and OBSSR (beginning with the May 21, 2005 receipt for January 2006 council). The ICs signed onto the 2005 FIRCA PAs both to support their grantees' international collaborative research and encourage more international research collaborations related to the missions of their institutes or centers. The NIH ICs traditionally contributing the most parent grants to the FIRCA applications and awards did not sign on (NIGMS, NIAID, NHLBI, NCI, NICHD and NIDDK in order of their support of parent grants). However, those ICs that did not sign on may co-fund FIRCAs on an ad hoc basis.
- In 2005, in response to input from the FIRCA applicants, grantees and reviewers over the years, FIC revamped the FIRCA program to meet the evolving needs of the research community in the context of rising numbers of applications at a time of increasingly constrained FIC and NIH overall budgets.
 - ***The FIRCA program was broken up into two: a behavioral and social sciences FIRCA, and a basic biomedical FIRCA starting with the May, 21, 2005 receipt date (January 2006 council round).*** By the nature of the program the FIRCA applications had always covered the whole spectrum of NIH research areas, although the highest concentration of applications was related to infectious diseases and basic cellular/molecular and genetic research. FIC had long sought to increase the pool of behavioral and social science applications and the visibility of the FIRCA in the behavioral and social science research community. But the behavioral and social sciences were perceived to be at a disadvantage among the FIRCA pool of more basic biomedical research. A natural split therefore seemed to be between basic biomedical science areas and behavioral and social science related research areas.
 - ***Both programs allow/require the foreign collaborator to apply for a follow-up "renewal" FIRCA.*** The other major substantive change in the 2005 FIRCA PAs was the requirement for the one allowable follow-up FIRCA to be submitted by the FIRCA foreign collaborator with the former US PI as co-investigator. The intent is to allow successful and well-qualified FIRCA foreign collaborators, who are already conducting the bulk of the FIRCA research in their own countries and institutions, the opportunity to continue the work with a grant in their name. It is hoped this will help them when they seek non-FIC funding at NIH or elsewhere. In addition it allows their institutions the opportunity to become familiar with and work through the complicated NIH application review process.

- *IRC country eligibility was clarified by use of the World Bank criteria for low and middle income countries.* This allows “graduation” of a former IRC country out of FIRCA program eligibility when they become high-income countries theoretically better able to build their own national health research capacity.

Further changes will be considered as the results of the evaluation are processed and the recent program changes have time to bear results. In addition to providing important data and guidance for the future direction of the program, the evaluation represents an important baseline for future evaluations of a program that remains vital and in demand among the global research community.

AIDS-FIRCA

The program announcement for the Fogarty International Research Collaboration Award for HIV-AIDS (AIDS-FIRCA) was inactivated as of June 17, 2003 with the last date for applications of September 1, 2003. FIC did not accept, review, or fund new or re-competing AIDS-FIRCA R03 applications for the January 1, 2004 receipt date and beyond. The AIDS-FIRCA program was deactivated due to the low application response to the AIDS-FIRCA program over the last ten years, and particularly in the last five years, coupled with the increasing number of new opportunities for funding for international AIDS-related research that significantly altered the uniqueness of and need for the AIDS-FIRCA program. The last AIDS-FIRCA award was made in September 2004. There are currently 16 AIDS-FIRCA grants that are completing their funding.

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Executive Summary

The Fogarty International Research Collaboration Awards (FIRCA) program was initiated in 1991 by the Fogarty International Center (FIC) to foster international research partnerships between NIH-supported US scientists and their collaborators in countries of the developing world. The program funds 3-year research partnerships between practicing scientists and physicians in the United States and their counterparts abroad. Following the completion of the first decade of FIRCA operations in 2002, FIC initiated an independent program evaluation of FIRCA to document the performance of the program, examine its overall operations as they have evolved over time, and make recommendations concerning the future of FIRCA.

The evaluation proceeded in two phases. An initial Feasibility Study collected program data, produced a draft logic model, and pilot-tested potential survey questions and interview protocols. A full Outcome Evaluation, the results of which are presented in this report, began in 2004. Both phases of the evaluation used FIC's standardized evaluation framework that highlights four elements of evaluation: Program planning; Program management; Partnerships and communication; and Results. The evaluation framework was used as part of a retrospective evaluation design that aimed to answer the question of how FIRCA influenced the career trajectories of its investigators (e.g., regarding collaboration between U.S. Principal Investigators (USPIs) and International Research Collaborators (IRCs), the effects on USPIs' international research interests and effects on IRCs' careers) as well as broader influences on capacity building at the institutional and national level. The full Outcome Evaluation described in this report primarily considers FIRCA program activities and outcomes between 1992 and 2003, while AIDS-FIRCA program activities and outcomes are secondarily included in the Outcome Evaluation.

The *original* FIRCA program goal was to “facilitate collaborative research efforts between US and foreign scientists that will expand and enhance the NIH-supported research program of the US Principal Investigator, while at the same time benefiting the scientific interests of the collaborating foreign scientists.” This goal of collaboration has remained a constant throughout the life of the FIRCA program, although it was modified slightly in 2002 to emphasize the high quality of collaborative research. In 1998, a *second* program goal of “increasing the capacity of the foreign investigator and institution for sustained and productive research and research collaborations” was added.

Six main data collection methods were integrated as part of this Outcome Evaluation:

- Administrative data collection and review
- Interviews with program stakeholders.
- Census surveys of the USPIs and IRCs
- Publication information
- Bibliometrics, and
- Site visits

Collaboration

Assessment of the program's collaboration goal began with the creation of a publication database that merged MEDLINE records with listings of publications from surveys and grant progress reports in

order to assess the extent of pre-award collaborative publication between USPIs and IRCs, the extent of collaborative publication during the award, and the identification of continuing collaborative publication after award close. Bibliometric data provided insight into the quality of those collaborative publications relative to field norms. Survey responses and site visit interviews provided breadth of detail regarding the origin, nature, and success of collaborations from the perspective of both the US investigator and the foreign collaborator.

Findings regarding collaboration include:

- ***Many grantees began their collaboration before receiving their first award.*** Nearly half of grantees (46% of FIRCA researchers, and 43% of AIDS-FIRCA researchers), had had at least one previous collaborative publication. The large majority of survey respondents – USPIs or IRCs, FIRCA or AIDS-FIRCA awardees – indicated that they had begun their collaborations (regardless of whether or not they had published together) before receiving an award.
- ***Collaborations generally were successful in producing international-quality science.*** Approximately three-quarters of USPI-IRC pairs have produced one or more peer-reviewed journal publications that appeared in MEDLINE searches, surveys, or grant reports. For both FIRCA and AIDS-FIRCA, grantees produced an average of just over three collaborative, attributable publications per collaboration, with nearly ten percent of FIRCA collaborations resulting in ten or more collaborative publications subsequent to award. Bibliometric analysis suggests that the quality of the funded science met international norms.
- ***Collaborations were between scientific peers.*** Both USPI and IRC survey respondents saw the roles of the two collaborators as equals. The USPIs surveyed reported that they generally played a co-equal role with their IRCs, while the IRCs surveyed reported that they were generally equals as well, though a minority indicated that that the developing-country scientists played the predominant role in the collaboration.
- ***Collaborations between USPIs and IRCs continue after the award itself concludes.*** Approximately ninety percent of survey respondents whose grants have ended – whether USPIs or IRCs, FIRCA or AIDS-FIRCA – are continuing their collaboration in some form. More than thirty percent of grantees whose awards ended five or more years ago have continued to co-publish.
- ***While FIRCA and AIDS-FIRCA have on the whole been successful in promoting sustainable research collaboration, there are variations in the extent of that success:***
 - USPI-IRC pairs whose collaboration preceded the award tended to collaborate more strongly during the award period and have a more sustainable relationship afterwards.
 - IRCs from certain regions (e.g., Latin America, Eastern Europe, Former Soviet Union) tended to collaborate more strongly during the award period than those from other regions (e.g., Africa, Asia, Western Europe); collaborating pairs whose IRCs hail from countries classified as “middle-income” tended to collaborate more strongly than those from either “high-income” or “low-income” countries.

Capacity-building

Assessment of capacity-building relied primarily on survey responses to characterize the breadth of the program’s capacity-building influences. Site visit interviews provided rich detail regarding both individual-level and institutional capacity-building, albeit for a small minority of grantees. Administrative records – both from NIH and other biomedical research funding sources – were

collected to further explore the extent to which the program contributed to IRCs' success in receiving future internationally-sponsored awards.

Findings regarding capacity-building include:

- ***The program has been highly successful in developing the potential of the individual international investigator.*** The career benefits of the program are manifest for FIRCA and AIDS-FIRCA researchers alike at all career stages and from all regions of the world. The benefits are both immediate in terms of prestige and long lasting in terms of international credibility-building. For junior researchers, it acts to help launch careers, often for scientists who have just returned from graduate study or postdoctoral fellowship in the United States; for more senior researchers, the program allows sustainability of high quality research, especially in countries where local funds for research are limited. The program provides researchers with the opportunity to receive equipment and consumable materials often unavailable locally.
- ***Awards are not only beneficial to individual IRCs, but they also impart “second generation” effects to students through training, travel, and education opportunities.*** The majority of IRCs used funds to train students and to send them abroad to the USPI laboratory. In many cases students were the primary carriers and diffusers of new techniques or methods from the USPIs' laboratories to IRC laboratories and institutions – a key capacity-building effect.
- ***Programmatic influence often extended to the institutional level.*** An important facet of capacity building lay in the learning and development of new techniques that diffused throughout individual labs, departments, and institutions; at many sites, equipment and consumables were also shared institutionally. Evidence of capacity building, however, tended to be greatest at institutions where researchers had multiple sources of international funding – although at such institutions, FIRCA or AIDS-FIRCA funding was one of the first sources of international funding that was secured. The program appears to have catalyzed the formation of several large-scale research networks in which former IRCs who have “graduated” from the program play key roles.
- ***Funded science tends toward basic research, though there are examples of IRCs who pursue translational research or policy impact, depending on the inclinations and abilities of the individual investigator.*** Many researchers praised the program for allowing them the freedom to pursue pure, basic research in environments where they are usually pressured to produce applied, tangible results. There were several examples, however, of IRCs translating research into clinical practice or into public policy.

Program Planning, Management, and Partnerships

Assessment of program planning, program management, and partnerships relied on administrative data review, interviews with program stakeholders, survey responses, and site visit interviews. While these are not “outcomes” of the program, strictly speaking, understanding these processes helps both to explain program results and to suggest potential future enhancements.

Findings regarding program planning, management, and partnerships include:

- ***Changes in program management have been responsive to the needs of participants.*** Examples include the evolution of the allowable expenditure rules to include salary support for the IRC, administrative costs at the IRC institution, and travel to international scientific conferences. Many IRCs believe that the program should, however, include mechanisms for them to apply directly as principal investigators.
- ***Complications associated with transfer of equipment from the US to the IRC country and funds from the USPI institution to the IRC represented the most frequent, severe, and multi-faceted set of challenges with respect to grant management.*** Specific challenges have included substantial administrative time investment at both ends, variable levels of administrative expertise and flexibility at USPI institutions, significant time lags for reimbursement, excessive taxation in the IRC country, and customs and shipping delays.

Recommendations

Recommendations for program management at FIC stemming from the Outcome Evaluation build on the key findings:

- Retain both collaboration and capacity-building goals, despite the potential tensions between the two and the complexity of the sustainable research capacity building goal.
- Retain the breadth of research topics and geographic scope.
- Should FIC create FIRCA-like programs targeted toward specific research topics or geographic areas, embed performance measurement strategies into these new programs to discern whether such new programs meet the level of quality of the parent program.
- Support IRCs in developing a viable “exit strategy.”
- Should FIC allow IRCs to apply as principal investigators, it may be necessary to create separate review criteria for such situations, or even a separate competition for FIRCA applications.
- Establish a direct and formal relationship between FIC and foreign collaborators.
- Consider allowing still more flexible spending of grant funds.
- Disseminate management “best practices” to USPIs, IRCs, and their institutions.