



Evaluation of the Fogarty
International Center's
International Research Scientist
Development Award (IRSDA)
Program
1999-2016

Executive Summary

By investing in outstanding early career United States (U.S.) investigators, the John E. Fogarty International Center (FIC) at the National Institutes of Health (NIH) is developing future global health researchers that will advance scientific discovery, while improving the health of populations worldwide. The *International Research Scientist Development Award* (IRSDA) program provides early career U.S. investigators the opportunity to conduct mentored research in a low- or middle- income country¹ (LMIC) to better understand the diverse health challenges and opportunities of working in low-resource settings. This support affords early career scientists the experience and skills to help launch their careers in global health research.

This report describes the results of the IRSDA program evaluation, describes select outputs of the IRSDA program in comparison to other NIH K Awardees, and documents characteristics of applicants and awardees of the IRSDA program from its start in FY1999 through FY2016 to understand the impact of program participation on awardees' careers in research and in global health.

The Program

Since 1999, the IRSDA program has supported qualified advanced postdoctoral research scientists and recently-appointed junior faculty to prepare for independent research careers in global health. Specifically, the objective of the program is to provide salary and research project support for a sustained period of mentored and protected research time with the expectation that awardees will pursue independent global health research careers, continue to collaborate with LMIC scientists, and become competitive for future research funding. Unlike most NIH K Awards, the IRSDA program has an in-country requirement that emphasizes the value of on-the-ground research experience that cannot be recreated or taught in a U.S. lab or classroom.

The IRSDA program has invested funds totaling over \$34.72 million dollars since 1999. Over the course of the program's 17-year history, it has collaborated with National Institute of General Medical Sciences (NIGMS), National Cancer Institute (NCI), National Heart, Lung, and Blood Institute (NHLBI), National Institute on Minority Health and Health Disparities (NIMHD), National Institute of Environmental Health Sciences (NIEHS), National Institute on Aging (NIA), National Institute of Nursing Research (NINR), Office of the Director's Office of Dietary

¹ The World Bank. (FY2017). *World Bank Country and Lending Groups*. [Webpage]. Retrieved from <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519-world-bank-country-and-lending-groups>.

Supplements, *Eunice Kennedy Shriver* National Institute of Child Health and Human Development (NICHD), Office of the Director's Office of AIDS Research, and the U.S. Department of State's Biosecurity Engagement Program.

With the support of these contributing NIH Institutes and Centers (ICs), the IRSDA program has funded 75 individuals as they engaged in international research in 33 countries across six regions of the world. Most projects (52%) were in sub-Saharan Africa (SSA), and in particular, Malawi, Kenya and South Africa.

IRSDA awardees have pursued a wide range of scientific fields, including infectious disease, non-infectious disease and the behavioral health sciences. Most projects were related to an infectious disease (64%) and, in particular, 32% had some association with HIV research. Over the last 15 years, awardees pursuing non-communicable disease or implementation science research have increased.



The Awardees

The IRSDA program ensures that U.S. early career scientists and clinicians have opportunities to engage in international research projects at a formative stage in their careers. FIC has funded a relatively gender-balanced proportion of early investigators in their mid-thirties (56% female; 44% male). The median age for the funded applicants is 36, which is consistent with the fact that the program is targeted to junior faculty, postdoctoral researchers and post-residency

clinicians. The data also show a balanced proportion of awardees with Doctors of Philosophy (PhDs) and Doctors of Medicine (MDs) (41% and 47% respectively).

Given the distribution of applicant degrees, the IRSDA program is unique from the NIH K01, which mostly attracts PhDs pursuing basic science (Appendix A). Overall, the IRSDA program appears to be attracting the types of applicants that the IRSDA Funding Opportunity Announcements (FOAs) seek to attract. IRSDA applicants tend to be early-career, varied in scientific interests (as indicated by their professional degrees) and balanced between genders.

The Alumni

The success of this program is built on the scientists who have participated in the program and the research-related careers they go on to pursue. This evaluation highlights and compares the program outcomes for four global health, K-Award cohorts (K01, K08, K23, IRSDA) in terms of scientific productivity (publications), success in obtaining subsequent NIH funding, and employment in global health. Findings from the evaluation suggest that IRSDA awardees are comparable to their counterpart NIH global health K-Awardees with respect to scientific productivity, a sustained global health research career, and success in securing future NIH funding.

Publications: To date, IRSDA alumni have published over 1566 peer-reviewed publications in a wide range of biomedical fields, the most common fields being infectious disease, immunology, and environmental occupational health. IRSDA scientific productivity was comparable to other NIH K awardees and most comparable to the K23 cohort.

Subsequent Funding: IRSDA awardees have been successful in obtaining subsequent NIH research funding in the role of principal investigator (PI), co-PI or multiple PI (MPI). Forty-three percent of IRSDA awardees obtained subsequent NIH funding. Of those grantees who received

Examples of Current Research of IRSDA Alumni

- A Systems Biology Approach to HIV-associated Neurocognitive Impairment: Role of Drug Abuse and Neuroinflammation (Murdoch, R01DA043241)
- Immune Responses to *Vibrio cholerae* infection and vaccination in Haiti (Harris, R01AI099243)
- Safety and Acceptability of Two IUDs among Cape Town HIV-positive Women (Todd, R01HD071804)
- Molecular profiling of HIV-associated lymphoma in the US and Malawi (Gopal, R21CA180815)
- Translating Molecular Diagnostics for Cervical Cancer Prevention into Practice (Paz-Soldan, R01CA190366)
- Using Behavioral Economics to Promote Exercise among Inactive Overweight Adults (Galarraga, R03CA188473)

additional NIH support, 80% received major research awards (R01, U01 or P01 mechanisms²). On average, it took an IRSDA awardee six years after their IRSDA was awarded to receive a NIH award (any funding mechanism) and an additional year (seven years) to receive a R01, U01, or P01. While IRSDA awardees were comparable to their NIH-K Awardee cohorts in terms of percentage receiving subsequent funding, IRSDA awardees took, on average, an extra year to receive their first subsequent award and two years for a subsequent R01, U01, or P01.

Global Health Pipeline: Training the next generation of researchers in global health is the core mission of the IRSDA program. The program has demonstrated important successes in this regard with over 85% of IRSDA alumni currently in a global health research career. Both the NIH K01 and K23 awardees were similar, retaining 85% and 82% respectively in global health careers. The in-country time requirement promotes regular collaborations with LMIC partners and demonstrates to the home (U.S.) institution that on-the-ground experience is integral to building global health research capacity. Many of the IRSDA awardees build lasting professional relationships with their U.S. and LMIC mentors and continue to collaborate with them later in their global health research careers. Case studies in this evaluation illustrate the long-lasting relationships fostered by IRSDA awardees and their mentors.

Through the IRSDA program, FIC has built a community of U.S. global health researchers who are committed to confronting global health challenges, who understand the realities of conducting research in resource-limited settings, and who have formed long-lasting collaborative relationships with scientists around the world.

² An R01 mechanism supports an investigator in his or her discrete research project. A U01 mechanism is a cooperative agreement grant between an institute or individuals in the academic field. The U01 supports a number of projects by multiple investigators in a specific research area, usually across multiple sites. A P01, in contrast, is a program project grant that involves multiple research projects (and the respective investigators) who share knowledge and resources as they strive towards a well-defined research program goal.