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# Global Oncology FY20 Annual Report

## Executive Summary





Seattle's Fred Hutch 15-acre campus on South Lake Union.

## EXECUTIVE SUMMARY

Fred Hutch is a leading organization in the worldwide effort to reduce the growing cancer burden which threatens many communities in low- and middle-income countries. For over a decade, the Global Oncology program has advanced scientific research and conducted training efforts to develop the next generation of physician-oncologists in East Africa. The mission of the program is to conduct cancer research that has global impact and support the development of research capacity and clinical care to reduce the burden of cancer in low and middle-income countries.

This report highlights Global Oncology's scientific and programmatic accomplishments of fiscal year 2020, July 1, 2019-June 30, 2020, as well as the impact of the COVID-19 pandemic on our efforts.

Significant achievements of FY20: Global Oncology, together with its primary collaborator the Uganda Cancer Institute, launched two new clinical trials in Uganda — one focused on an all-oral chemotherapy regimen for breast cancer patients and another focused on a novel targeted treatment for adult and pediatric patients with lymphoma. The inaugural cohort of the Adult Hematology-Oncology Fellowship completed their first of two years. The program faculty secured an increase of 47% in grant funding through five new awards. Lastly, new initiatives were launched to strengthen the global cancer community in Seattle.

# THE COVID-19 PANDEMIC

As with nearly every organization and program worldwide, Global Oncology's operations have been impacted by the COVID-19 pandemic and will continue to require us to be nimble for the foreseeable future.

## Research and Operations

In March 2020, the Fred Hutch implemented a mandatory work from home policy and shortly after, the Government of Uganda instituted precautionary restrictions that necessitated most staff members in both countries to move to a telecommuting model. In line with restrictions, research and operations in Uganda were limited to developing and implementing preventive measures on campus and supporting two studies where participants were receiving an interventional treatment.

Recruitment on all other studies was suspended and operations were mostly limited to activities that could be performed from home. Nearly five months after the suspension of recruitment, there is hope that activity will resume again fully, with preventive measures that prioritize the safety of all participants and staff members in place.

## Training

The "East African Adult Hematology Oncology Fellowship," canceled in-person lectures and international travel for its inaugural cohort and scheduled their final exam virtually. Interviews for the next [2020] cohort of fellows will also be conducted virtually.

## Supporting the National Response

As threat of the global pandemic reached Uganda, members of the UCI-Fred Hutch Collaboration worked closely to develop response preparedness plans, including supporting the UCI's capacity to screen patients and staff. Working in partnership with the Ministry of Health of Uganda, the program laboratory staff at the UCI-Fred Hutch Cancer Centre are working towards conducting SARS-CoV-2 testing in the near future. Global Oncology recognizes the support and expertise of colleagues both at Fred Hutch and the University of Washington to help guide our response in Uganda. In partnership with Fred Hutch's Business Development & Strategy and Philanthropy teams, Andrea Towlerton, laboratory director,

Dr. Warren Phipps, medical director, UCI Fred Hutch Collaboration and associate professor, VIDD, and Dr. Hootie Warren, head, Global Oncology, secured a generous donation from BGI Americas. Thanks to relationships these teams have built with BGI Americas and Lynden International, a global logistics company, the team shipped RT-PCR test kits to the UCI-Fred Hutch Cancer Centre in June 2019. The goal is to conduct testing onsite to both better understand and respond to the SARS-CoV-2 virus and COVID-19 pandemic in sub-Saharan Africa.

# PUBLICATIONS

Five of the articles were independent research from a former or current fellow of the UCI-Fred Hutch Collaboration in Uganda (indicated by an asterisk\*).

**Menon M**, Orem J, **Adams S**, Bakenga A, Basemera D, Kasozi D, Quentin Konnick E, Mubiru K, Mulumba Y, Muwonge C, Okoche L, Pierce R, Gralow J, Niyonzima N. ER, PR, and HER2 expression in Ugandan breast cancer patients: An evaluation of in-country RT-PCR compared to IHC. *Journal of Clinical Oncology*, 2020 May 25; 38 Suppl 15. DOI: 10.1200/JCO.2020.38.15\_suppl.e19009

Mutebi M, Anderson BO, Duggan C, Adebamowo C, Agarwal G, Ali Z, Bird P, Bourque JM, DeBoer R, Gebrim LH, Masetti R, Masood S, **Menon M**, Nakigudde G, Ng'ang'a A, Niyonzima N, Rositch AF, Unger-Saldaña K, Villarreal-Garza C, Dvaladze A, El Saghir NS, Gralow JR, Eniu A. Breast cancer treatment: A phased approach to implementation. *Cancer*, 2020 May 15;126 Suppl 10, 2365-2378. <https://doi.org/10.1002/cncr.32910>

Ddungu H, Krantz EM, Kajja I, Naluzze S, Nabbanja H, Nalubwama F, **Phipps W**, Orem J, Wald A, Kiwanuka N. Transfusion Challenges in Patients with Hematological Malignancies in Sub-Saharan Africa: A Prospective Observational Study from the Uganda Cancer Institute. *Sci Rep*. 2020 Feb 18;10(1):2825. doi: 10.1038/s41598-020-59773-y.

Mayer BT, Krantz EM, Wald A, Corey L, Casper C, Gantt S, Schiffer JT. Estimating the Risk of Human Herpesvirus 6 and Cytomegalovirus Transmission to Ugandan Infants from Viral Shedding in Saliva by Household Contacts. *Viruses*. 2020 Feb 3;12(2). pii: E171. doi: 10.3390/v12020171.

# FY20 GRANTS & AWARDS

## • 1 NIH Award

NIH/NCI, R01 Characterizing the Determinants of Primary KSHV Infection Among Children and Adolescents in Uganda \$2,868,449 [PIs, Phipps, Orem [UCI], Schiffer [FH] [Q1]

## • 2 Fred Hutch Internal Awards

Public Health Sciences Pilot, \$78,397 [1 year] 7/1/2019-6/30/2020 [PI, Adams] [Q1]

Pathogen-Associated Malignancies Integrated Research Center Innovation Grant \$100,000 [PIs, Phipps, Koelle [UW], Warren] [Q2]

## • 2 Industry Awards

Celgene, Optimizing Nephroblastoma Treatment Outcomes in Uganda Children \$100,000 [PI, Uldrick] [Q1]

Celgene Cancer Care Links. East African Adult Hematology-Oncology Fellowship International Exchange Program [PI, Uldrick] [Q2]

# FINANCIAL OVERVIEW

## ANNUAL GRANT FUNDING

FY20

\$8.2 million

FY19

\$5.6 million

## TOTAL OPERATING EXPENSES

FY20

\$2.6 million

FY19

\$2.3 million

## ANNUAL GRANT FUNDING

By Funding Type, FY20 Q4

**NIH** - 11 awards

[includes subawards]

\$6.2 million

**Industry** - 3 awards

\$1.5 million

**Private** - 5 awards

\$0.5 million

## GLOBAL ONCOLOGY HIGHLIGHTS

- Two clinical trials in Uganda
  - The first trial aims to determine the feasibility an all-oral cancer regimen for breast cancer patients and is one aim of the ongoing study funded by GSK's Africa NCD Open Lab to define the molecular profile of breast cancer in Uganda and explore clinical implications, co-led by Dr. Manoj Menon (FH) and Dr. Jackson Orem (UCI).
  - The second clinical trial, in partnership with Roche and the UCI, is evaluating a novel-targeted treatment, Rituximab, that can be administered under the skin of both adult and pediatric patients with lymphoma. This trial is led by Dr. Thomas Uldrick, GO Deputy Head, and Drs. Henry Ddungu, Joyce Balagadde-Kambugu, and Jackson Orem of the UCI.
- Awarded two pilot grants to Fred Hutch faculty and their research teams as an initiative seeking proposals on next generation sequencing applications for prevalent solid and liquid tumors in low- and middle- income countries, which will utilize a newly installed, next-generation sequencing system installed at the laboratory at the UCI-Fred Hutch Cancer Centre, called a MiSeq system.
- Through NIH training grants, supporting five PhD candidates, peer-mentoring career development program, and various clinical care conferences and tumor boards.
- Held the first annual UCI-Fred Hutch Collaboration Faculty Retreat in Kampala, Uganda in September 2019
- Launched a new Internal Advisory Committee and External Advisory Board to guide the research and program strategy
- 50 faculty and researcher became the first Affiliate Global Oncology faculty and researchers

Wu ES, Urban RR, Krantz EM, Mugisha NM, Nakisige C, Schwartz SM, Gray HJ, Casper C. The association between HIV infection and cervical cancer presentation and survival in Uganda. *Gynecol Oncol Rep.* 2019 Nov 19;31:100516. doi: 10.1016/j.gore.2019.100516. eCollection 2020 Feb. Review.

Bender Ignacio R, Ddungu H, **Uldrick TS**. Untangling the Effects of Chemotherapy and HIV on CD4 Counts-Implications for Immunotherapy in HIV and Cancer. *JAMA Oncol.* 2019 Dec 5. doi: 10.1001/jamaoncol.2019.4634. [Epub ahead of print]

Downing J, Niyonzima N, Guma S, Batuli M, Kiwanuka R, Atuhe I, Nalukwago Z, Mwesiga M, **Phipps W**, Ddungu H. Towards universal coverage-highlights from the 2nd Uganda Conference on Cancer and Palliative Care, 5-6 September 2019, Kampala, Uganda. *Ecancermedicalscience.* 2019 Nov 19;13:976. doi: 10.3332/ecancer.2019.976. eCollection 2019.

McGoldrick SM, Mutyaba I, **Adams SV**, Larsen A, Krantz EM, Namirembe C, Mooka P, Nabakooza S, Ndagire M, Mubiru K, Nabwana M, Nankinga R, Gerdt S, Gordon-Maclean C, Geriga F, Omoding A, Sessle E, Kambugu J, **Uldrick TS**, Orem J, Casper C. Survival of children with endemic Burkitt lymphoma in a prospective clinical care project in Uganda. *Pediatr Blood Cancer.* 2019 Sep;66[9]:e27813. doi: 10.1002/pbc.27813.

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Murphy KJ, Conroy AL, Ddungu H, Shrestha

R, Kyeyune-Byabazaire D, Petersen MR, Musisi E, Patel EU, Kasirye R, Bloch EM, Lubega I, John CC, Hume HA, Tobian AAR. Malaria parasitemia among blood donors in Uganda. *Transfusion.* 2020 Apr 13. doi: 10.1111/trf.15775. [Epub ahead of print]\*

Okunade K, Bashan Nkhoma K, Salako O, Akeju D, Ebenso B, Namisango E, Soyannwo O, Namukwaya E, Dandadzi A, Nabirye E, Mupaza L, Luyirika E, Ddungu H, Chirenje ZM, Bennett MI, Harding R, Allsop MJ. Understanding data and information needs for palliative cancer care to inform digital health intervention development in Nigeria, Uganda and Zimbabwe: protocol for a multicountry qualitative study. *BMJ Open.* 2019 Oct 31;9[10]:e032166. doi: 10.1136/bmjopen-2019-032166.\*

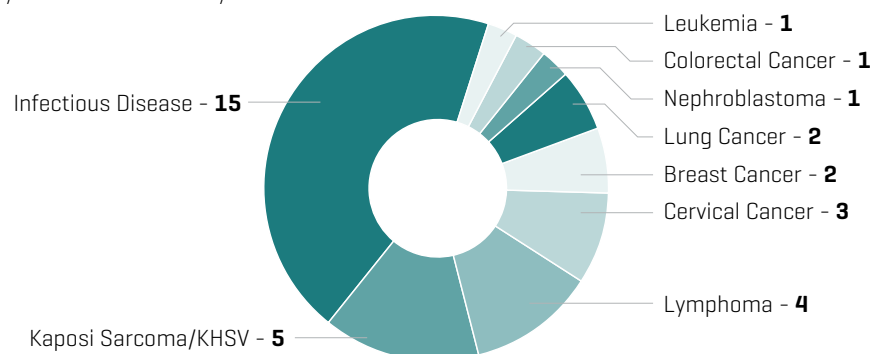
Ekdahl Hjelm T, Matovu A, Mugisha N, Löfgren J. Breast cancer care in Uganda: A multicenter study on the frequency of breast cancer surgery in relation to the incidence of breast cancer. *PLoS One.* 2019 Jul 11;14[7]:e0219601. doi: 10.1371/journal.pone.0219601. eCollection 2019.\*

Jatho A, Bikaitwoha ME, Mugisha NM. Socio-culturally mediated factors and lower level of education are the main influencers of functional cervical cancer literacy among women in Mayuge, Eastern Uganda. *Ecancermedicalscience.* 2020 Jan 21;14:1004. doi: 10.3332/ecancer.2020.1004. eCollection 2020.\*

Mwaka AD, Mangi SP, Okuku FM. Use of traditional and complementary medicines by cancer patients at a national cancer referral facility in a low-income country. *Eur J Cancer Care [Engl].* 2019 Nov;28[6]:e13158. doi: 10.1111/ecc.13158. Epub 2019 Aug 23.\*

## GLOBAL ONCOLOGY AREAS OF RESEARCH FOCUS

By number of studies by focus



Several GO studies include more than one cancer or disease area

## GLOBAL ONCOLOGY FY20 MILESTONES

JULY 2019 ▶ **Public Health Sciences Pilot Award**  
[PI: Scott Adams, Staff Scientist, VIDD & GO]

AUGUST/SEPTEMBER ▶ **Marc Stewart, Medical director, SCCA, visit to and lectures in Kampala for AHO fellowship focused on “Building a Great Cancer Center”**

SEPTEMBER ▶ **NIH/NCI, RO1** [“Characterizing the Determinants of Primary KSHV Infection Among Children and Adolescents in Uganda”, PIs: Phipps, Orem, Schiffer]  
▶ **Celgene Award, “Optimizing Nephroblastoma Treatment Outcomes in Uganda Children”** [PI: Uldrick]  
▶ **1st UCI-Fred Hutch Collaboration Faculty Retreat** [Kampala]

OCTOBER ▶ **Roche / Subcutaneous Rituximab Trial Launched**  
▶ **Dr. William Harris and Dr. Tom Uldrick give lectures in Uganda for Adult Hematology-Oncology Fellowship**

DECEMBER ▶ **2019 Global Oncology Pilot Recipients Awarded**  
▶ **1st Internal Advisory Committee Meeting Held**  
▶ **GO enhances social media presence by launching a Twitter handle, @FredHutchGO**  
▶ **Inaugural Global Cancer Community in Seattle event held**

JANUARY 2020 ▶ **Pathogen-Associated Malignancies Integrated Research Center Innovation Grant** [PIs, Phipps, Koelle [UW], Warren]  
▶ **HCRI-Ug All-Staff Retreat** [Kampala]

FEBRUARY ▶ **50 new Global Oncology Affiliate Faculty and Researchers joined**  
▶ **Ground-level construction of the UCI-Fred Hutch Centre begins with estimated completion of Nov. 2020** [went on hold during initial pandemic; resumed in May 2020]

MARCH ▶ **Celgene International Exchange Program** [PI: Uldrick]  
▶ **New UCI-Fred Hutch COVID-19 Incident Command Team Created and Discussions with Uganda Ministry of Health on SARS-CoV-2 Testing**

JUNE ▶ **Ministry of Health Site Inspection – UCI-Fred Hutch Cancer Centre Received Highest Rating out of 12 Labs in the Country**

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Desire Asimwe shows a sigh of relieve after hearing the good prognosis from Dr. Henry Ddungu at UCI-Fred Hutch Cancer Centre. She is suffering from acute myeloid leukemia. Photo by Jiro Ose