# **Building Capacity to Study the Molecular Basis for Colorectal Cancer in Northern Tanzania**

Ayesiga M. Herman<sup>1,2\*</sup>, Martha J. Shrubsole<sup>3</sup>, Blandina T. Mmbaga<sup>2</sup>, Ken Lau<sup>4</sup>, M. Kay Washington<sup>3</sup>, Frank Revetta<sup>3</sup>, Robert J. Coffey<sup>3</sup>, Alexander T. Hawkins<sup>3</sup>

<sup>1</sup>Kilimajaro Christian Medical Centre, <sup>2</sup>Kilimanjaro Clinical Research Institute, <sup>3</sup>Vanderbilt University Medical Center <sup>4</sup>Vanderbilt University

\*Email: ayesigaherman@gmail.com

### **BACKGROUND**

- Colorectal cancer (CRC) is the third leading cause of cancer deaths globally with a mortality rate of about 4 per 100,000 in Tanzania<sup>1,2</sup>.
- The incidence of CRC, especially Early Onset CRC (EOCRC), is increasing globally, particularly in low and middle income countries (LMICs)
- There are few molecular epidemiologic studies in LMICs due to limited cancer research capacity and training, which hamper control efforts.
- Prevalence of genetic syndrome is unknown
- We developed a mentored research program to address these gaps in collaboration with Kilimanjaro Christian Medical Center (KCMC) and Vanderbilt University Medical Center (VUMC).

## **EVALUATION METHODS**

- Biweekly virtual meetings between sites
- Weekly meeting of the local team

## **APPROACH**

We constructed a mentored research program with the following objectives:

- 1. To enhance local research skills in particular study design, hypothesis testing, instrument design and data collection skills.
- 2. To build capacity to study the molecular basis of colorectal cancer in Northern Tanzania.
- 3. To assess the feasibility for the establishment of a prospective molecular data collection infrastructure.



Fig. 1 Map of Tanzania in the Eastern region of Africa

#### **MILESTONES** Capacity Capacity Building Building Mentee visited collaborating centre, • Established a database Mentee formed a local Ongoing weekly VUMC, to learn the team of researchers for CRC cases and mentee-mentors IHC techniques and involving histocommenced implementation research skills and retrospective technicians, pathologists, meetings currently back enrolment of patients genomic technicians and Started processes for implementing research assistants immunohistochemistry staining Capacity Building Skills transfer

# **EXPECTED OUTCOMES**

On completion of this program,

Fig. 2 Project milestones

- The mentee will be an independent researcher and able to acquire future grants to advance CRC research in Tanzania
- The results will form the basis for cancer control activities such as screening, genetic counseling and guide treatment strategies
- Strengthen research capacity at KCMC and enhance and optimize a CRC registry for planned and future CRC research
- Program will shed light on the molecular characteristics of the tumors and answer some questions regarding EOCRC in Tanzania

# **FUNDING**

This research Is supported by the national Cancer Institute of the National Institute of Health under Award Number P50CA236733. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institute of Health

## REFERENCES

<sup>1</sup>Center MM, Jemal A, Smith RA, Ward E. Worldwide variations in colorectal cancer. Vol. 53, Diseases of the Colon and Rectum. 2010. p. 1099.

<sup>2</sup>Graham A, Adeloye D, Grant L, Theodoratou E, Campbell H. Estimating the incidence of colorectal cancer in Sub-Saharan Africa: A systematic analysis. J Glob Health. 2012;2(2).





