Global Cancer Research and Training Program

2024 Update

Memorial Sloan Kettering Cancer Center

ARGO
African Research Group for Oncology

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Letter from the Directors

Dear GCRT Friends & Colleagues,

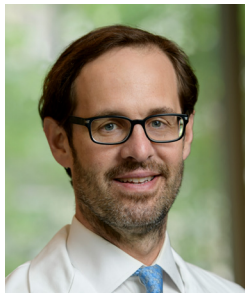
As we reflect on the past year, we are filled with gratitude to our team and partners around the world for all that we accomplished together to improve cancer outcomes in Low- and Middle-Income Countries (LMICs). As cancer care globally continues to grow as a public health priority, it is very meaningful to be involved in the conversation on how to improve cancer control. Our program continues to expand with new countries for partnerships and meaningful new research and education efforts. Much of our program is focused on collaborative research in Nigeria. This marks the 11th year of the African Research Group for Oncology (ARGO), an NCI-recognized consortium founded by MSK and Obafemi Awolowo University Teaching Hospital, led by Professor Isaac Alatise. ARGO has grown to now include 38 Nigerian institutions as well as six from North America. The annual ARGO symposium in September 2024 brought our multi-disciplinary international team together in Ile-Ife, Nigeria focused on "Strategies to Improve Oncologic Outcomes in Nigeria: Breast, Colorectal, Hepatobiliary and Cervical Cancers". Leaders in global oncology, including local Nigerian and international speakers, provided inspiring comprehensive global oncology lectures to 200 attendees.

Thanks to our multidisciplinary faculty and research team, our program continues to thoughtfully grow and expand in global oncology research, education and clinical care. This year provided opportunities for strategic planning as a team in person. We formally reviewed our program through an internal assessment which provided invaluable insights into areas of strength and opportunities for improvement.

In this annual report you will learn about GCRT's current and future research, including the launch of the first immunotherapy trial in Nigeria by our group. Our educational programs continue to flourish, with our Nigerian Cancer Research Training Program (NCAT) welcoming a 4th cohort of scholars. The GCRT research team continues to work closely with over 40 research assistants in Nigeria who are the backbone of our studies. GCRT has also built important collaborations in countries outside of Nigeria, such as Tanzania, and looks forward to growing these relationships and to nurture links across our collaborating sites.

Together with our international partners, we continue to address the challenges of cancer prevention, diagnosis, and treatment in LMICs. We work together to build capacity, knowledge, and skills that will result in robust health systems and meaningful clinical advances. We thank our partners, donors, and staff for their hard work and ongoing support without whom none of this is possible. We look forward to the years ahead as we continue to build partnerships and collaborations around the world to truly make an impact on global cancer care and the lives of patients.

In Partnership,



T. Peter Kingham, MD
Director, Global Cancer Research and Training Programs

Victoria Mango, MD
Assistant Director, Global Cancer Research and Training Programs

A Brief History of GCRT & ARGO

In 2009, Professor Olusegun Isaac Alatise, a Nigerian surgeon, came to Memorial Sloan Kettering Cancer Center (MSK) for clinical training and research education. Following the visit, MSK established a partnership with Obafemi Awolowo University Teaching Hospital Complex (OAUTHC) in Nigeria. As a result of the productivity of the research collaborations, Dr. Peter Kingham and Sir Murray Brennan founded MSK's Global Cancer Research and Training Programs (GCRT) to improve outcomes for cancer patients in low- and middle-income countries (LMICs).

Dr. Kingham and Prof. Alatise wanted to create a mechanism for multi-institutional cancer research and training in Nigeria so they founded the African Research Group for Oncology (ARGO) in 2013. With GCRT's mission to improve outcomes for cancer patients worldwide using collaborative research and training, the two programs are committed to combining research, training, capacity building, and education to support a long-term sustainable improvement in outcomes for cancer patients in LMICs.

ARGO is an NCI-recognized consortium that has grown to include 44 medical institutions, 38 from Nigeria and 6 from the US and Canada as well as a number of partner institutions. ARGO has established research and training infrastructure, with biobanks and local scientific partnerships for novel cancer research training and clinical studies. OAUTHC and the College of Medicine, University of Lagos/Lagos University Teaching Hospital serve as ARGO's research and training hubs. ARGO is supporting innovative research focused on generating data to inform regional evidence-based management recommendations, investigating prevention and early detection strategies, increasing access to cancer care, and improving cancer care training in rural and underserved communities.

Over the last 15 years, both the ARGO consortium and the GCRT program at MSK have grown. Faculty participation within GCRT now covers numerous disciplines, including epidemiology, medical oncology, nursing, obstetrics & gynecology, palliative care, pharmacy, pathology, radiology, and surgery. Global oncology is a growing field in medicine, and there is a need for training

opportunities for fellows and residents. GCRT is committed to supporting training in this growing field and in 2024 created a Global Trainee Track Program for fellows and residents at MSK.

In recognition of our teams commitment to collaborative research and training programs globally, GCDI is now known as the Global Cancer Research and Training (GCRT) program.

Program Highlights & Growth

Program Highlights & Growth

Expanding the ARGO Consortium

The ARGO consortium continues to grow each year to include more medical institutions in low and high-income countries. In 2024, we added 7 new sites in Nigeria: Federal Medical Center, Bida; Kwara State University; Federal Medical Centre, Gausau, Zamfara; Bayero University, Kano; Afe Babalola University Ado-Ekiti Multi-system Hospital, Ado-Ekiti; Irrua Specialist Teaching Hospital, Irrua/Ambrose Alli University and Marcelle Ruth Cancer Centre & Specialist Hospital. We also added 2 new sites in high-income countries: Wake Forest University Health Sciences in the United States and Princess Margaret Cancer Center in Canada. For the full list of ARGO member sites, please reference Appendix 1: Partner Institutions.

Expanding Research

Our portfolio of studies and projects over the past year has grown to over 100 studies, with 30 active NCAT studies and 77 active studies/projects within ARGO.

Expanding Faculty Participation/Partnerships

RAD-AID Learning Center Course: Introduction to Artificial Intelligence (AI) for LMIC Radiologists

GCRT partnered with RAD-AID International, a non-profit organization that seeks to bring radiology services to underserved areas of the world, to modify their Introduction to Artificial Intelligence course for LMIC Radiologists in Nigeria. The updated online course is being piloted through the RAD-AID Learning Center with 50 radiologists from OAU and LASUTH enrolled. Their feedback will be used to modify the course which will then be made more widely available to radiologists from other ARGO institutions in the future.

MSK-GCRT academic partnership with the Mexican National Cancer Institute (INCAN)

Dr. Rose Costas Muniz, Dept of Psychiatry and Behavioral Sciences, founded the Formacion de Investigacion Psicosocial Oncologica Latinoamericana (FIPOL), which is a consortium in Latin America centered around psycho oncology and palliative care. In 2024 Dr. Costas Muniz was awarded an NCI R01 with INCAN investigators focused on evaluating psycho oncology interventions at INCAN. Using this research project as the foundation of the relationship, INCAN and MSK aspire to formalize an educational and training partnership in 2025.

We look forward to the continued growth of these programs and partnerships in the coming years and welcome the expanding collaboration across institutions.

Multi-Institutional Global Oncology Lecture Series

GCRT continues to partner with global oncology teams at MD Anderson Cancer Center, Dana Farber Cancer Institute, Harvard T.H. Chan School Of Public Health, Massachusetts General Hospital, University of Pennsylvania, University of California San Francisco, Princess Margaret Cancer Centre and Indiana University Cancer Center to provide relevant lectures on global oncology every other month via zoom. Lecture details and recordings for each lecture are e-mailed to the GCRT and ARGO teams, all those interested are welcome to attend. Speaker suggestions for future sessions can be e-mailed to Dr. Mango.

11th Annual ARGO Symposium

The ARGO and GCRT Symposium at OAUTHC unites healthcare professionals each year from across West Africa to learn, share, and collaborate on oncology management practices and research. The theme for the 2024 ARGO Symposium was: “Strategies to Improve Oncologic Outcomes in Nigeria: Breast, Colorectal, Hepatobiliary and Cervical Cancers”. Nearly 200 participants representing 30 institutions across Nigeria, as well as 18 international faculty from MSK, Dalhousie University in Nova Scotia, Wake Forest University, Cornell University, and Northwestern School of Medicine, attended.

Program Highlights & Growth CONTINUED

Though initially focused on colorectal cancer, GCRT and ARGO have expanded to include many studies inclusive of breast, cervical, and other gastrointestinal tract cancers. Our work will continue to expand and grow as we address other cancer types that disproportionately affect populations in LMICs.

Strategic Planning

GCRT and ARGO held an annual Strategic Planning meeting in May. This was a hybrid meeting, with 43 faculty participating. MSK faculty joined in person, and we were delighted to host Dr. Isaac Alatise from OAUTHC; additional faculty from Nigeria and Canada joined via Zoom. GCRT's mission and vision were reviewed:

Mission:
Improve outcomes for cancer patients in low-and middle-income countries, using collaborative research and training programs.

Vision:

- Create a sustainable platform to consolidate regional cancer data
- Implement cost-efficient early-diagnosis methods and therapies
- Disseminate outcomes to other cancer communities
- Provide a path for promotion with education and training

The meeting focused on ongoing research studies, new research, and future directions. Breast and colorectal studies were presented and discussed as Dr. Mango, Assistant Director of GCRT, led an overview of studies related to breast cancer and Dr. Kingham, Director of GCRT, led a review on studies related to colorectal cancer. Following the research discussions, educational initiatives, capacity building, and infrastructure were reviewed. A full report on the Strategic Planning meeting is available through GCRT.

Breast Cancer Studies

Early Detection

- Triple mobile assessment and patient navigation model
- Primary school-based intervention pilot
- Addressing global inequities in breast cancer genetic testing
- Pt reported barriers to screening and early presentation of breast cancer
- Understanding the experiences, perceptions and health seeking behaviors of relatives of breast cancer patients at Obafemi Awolowo University Teaching Hospital Complex
- Delay in breast cancer presentation and treatment in Nigeria: Evaluating health systems and structures
- Integrating Cervical and Breast Cancer Screening into Family Planning Services in a Nigerian Suburban Population: A Pilot Study
- Impact of patient navigation in cancer patients

Radiology

- Ultrasound-guided core biopsy training program-> Validation expansion
- Artificial Intelligence Decision Support for Timely Breast Cancer Diagnosis in Nigeria
- Perceptions of Radiation Workers to Mammography Screening in Nigeria
- Mammography QA and ultrasound BIRADS Re-evaluation

Pathology

- Biomarker/IHC testing
- Breast pathology synoptic templates
- Global pathology academy: online fellowship
- Prevalence/magnitude of TILS
- Pathology perspective in early breast cancer diagnosis
- National snapshot of IHC in Nigeria
- Improving hormone receptor testing in Tanzania
- Pathology capacity building scoping review

Treatment

- Psychosocial barriers to BC surgery
- Improving adherence to BC guidelines
- Guideline Concordance Retrospective Analysis
- Post-mx prophylactic compression sleeve
- De-escalating mastectomy to facilitate breast conservation
- De-escalating axillary surgery
- Factors responsible for inadequate resection margins of mastectomies
- Mastectomy review/seroma
- QOL in elderly women with breast cancer
- Correlation between body composition and toxicity grading in chemotherapy
- Barriers to breast reconstruction in Nigeria: HCP and patients' perspective.
- Evaluating the Impact of Financial Navigation on Financial Toxicity and Treatment Adherence for Cancer Care: A Randomized Control Trial- COST-FIN

Colorectal Cancer (CRC) Studies

Epidemiology/Biology
Unknown what modifiable risk factors exist for Nigerian CRC pts

- Case-control study evaluating modifiable risk factors for CRC
- Determining sporadic and germline mutations Nigerian CRC
- Environmental risk factors for CRC in Nigeria
- Cryptosporidium association with CRC

Early Detection
75% of patients present with stage III or IV colorectal cancer

- Urine metabolite point-of-care test
- FIT stool testing
- Early diagnosis bowel cancer project
- Point-of-care methylation blood test for CRC in high-risk patients
- Delays in diagnosis for GI cancers

Diagnosis

- Capacity building for colonoscopy skills
- Establishing the feasibility of a deep-learning imaging classification network

Treatment

- Phase II immunotherapy trial for MSI-H colorectal cancer
- Improving outcomes in CRC cancer treatment: SCAMPS

Additional Highlights

International Presence of GCRT Leadership

Dr. Kingham represented MSK as a Commissioner on the 2025 Lancet Oncology Moonshot 2.0 Commission focused on the cancer workforces in Africa and Latin America. The Commission is evaluating how national cancer control plans account for cancer workforce expansion and training and what barriers cancer workforce members have in treating patients and career advancement.

Dr. Kingham will also be representing MSK along with Dr. Vickers, President and CEO of MSK, in a stakeholder group to build a global fund for cancer control. This initiative launched in 2024 and their work continues into 2025. The group involves global cancer stakeholders including the WHO, World Bank, ASCO, American Cancer Society and AACR.

Educational Initiatives

GCRT continues to prioritize the educational needs of trainees and healthcare workers in LMICs.

New Staff & Visiting Scholars

- Dr. Catherine Zivanov, a third-year general surgery resident from Washington University School of Medicine, was appointed to the MSK Stern Fellowship in Global Oncology Research, dedicated to training current residents or recent graduates of US or Canadian residency programs or PhD students in global oncology research. She joined the team in July and spent a few months at MSK integrating into the GCRT program prior to transferring to OAUTHC. Dr. Zivanov is working on studies related to breast and colorectal cancer treatment and outcomes, and several evaluations/needs assessments in biostats training and breast pathology.
- Dr. Erica Mann, a second-year general surgery resident from Lankenau Hospital, was appointed to the GCRT Global Oncology Fellowship. Dr. Mann spent three months in the US working with MSK's research team and then transitioned to Nigeria to complete the remainder of her one-year appointment. She was welcomed by the ARGO team in Ile Ife, Nigeria, and is currently working on studies related to breast and colorectal cancer outcomes, and several evaluations/needs assessments in biostats training, palliative care and breast pathology.

NIH International Research Training Grant

In 2022, GCRT received a D43 international training grant, "Expanding cancer research capacity in Nigeria using team science" which includes post-doctoral training for PhD-level scientists. GCRT welcomed three post-doctoral Fellows in 2023 in the areas of nursing and epidemiology, and all successfully completed their one-year mentored research training at MSK. GCRT was pleased to welcome two more D43 post-doctoral Fellows in the areas of psycho-oncology and epidemiology in 2024:

- Dr. Jacob Mobolaji joins GCRT from Obafemi Awolowo University in Nigeria, where he is a Senior Lecturer in the Department of Demography and Social Statistics. While at MSK, he is working under the mentorship of Dr. Mengmeng Du, Associate Attending within the Department of Epidemiology.
- Dr. Joyce Terwase joins GCRT from Benue State University in Nigeria, where she is a Senior Lecturer within the Department of Psychology. While at MSK, she is working within the Department of Psychiatry & Behavioral Sciences under the mentorship of Dr. Jamie Ostroff, Chief of the Behavioral Sciences Service and Dr. Smita Banerjee, Associate Attending Behavioral Scientist.

GCRT Clinical Training Programs

The Mammadi Soudavar Memorial Fellowship

This three-month Fellowship was established in The New York Community Trust in 1981 by Fereidoon and Shamsi Soudavar as a memorial to their son, Mammadi. The Soudavar Fellowship allows international physicians to study and observe at MSK and apply the knowledge gained when they return to their home country. MSK has hosted over 24 Soudavar Fellows from Africa. This year we welcomed Dr. Nneka Iloanusi, a Consultant Radiologist and

Senior Lecturer from University of Nigeria Teaching Hospital; Dr. Gilbert Nkya, a Medical Specialist (Pathologist) from the Department of Pathology at Kilimanjaro Christian Medical Center (KCMC), Tanzania; and Dr. Bogale Akale, head of Hawassa University Comprehensive Specialized Hospital Cancer Treatment Center in Ethiopia.

International Surgical Oncology GCRT Fellowship

This one-year fellowship, supported by internal MSK funding, is a clinical program for North American surgeons to receive advanced training in global cancer care and research. To date, four physicians have participated in the fellowship. In 2024, GCRT welcomed Dr. Alex Doyle, a general surgeon experienced in the management of patients with various types of cancer, including breast, stomach, and colon. After spending a few months on clinical rotations at MSK, Dr. Doyle transitioned to OAUTHC in Ile Ife, Nigeria. He's since returned to MSK to complete a surgical oncology fellowship.

MSK Stern Fellowship in Global Oncology Research

This one-year fellowship, supported by the Stern Fund, invites applicants who are current residents or within two years of completing a residency training program or PhD program in the US or Canada. Fellows spend an initial few months at MSK and complete the remaining nine months in Nigeria at OAUTHC. Dr. Catherine Zivanov, a third-year general surgery resident from Washington University School of Medicine, was appointed as our second Stern Fellow in 2024.

The GCRT Global Oncology Fellowship

This one-year fellowship, supported by the Oak Fund, invites applicants who are currently in or recent graduates of North American residency programs in surgery, medicine, radiology, pathology, psychiatry, or gynecology. Fellows begin at MSK for three months and complete the remaining nine months in Nigeria at OAUTHC. The fellowship aims to train leaders in multidisciplinary cancer care and research in high and low-income countries. Dr. Erica Mann, a second-year general surgery resident from Lankenau Hospital, was appointed as our first GCRT Oncology Fellow in 2024.

Virtual Breast Pathology Fellowship

This program was launched in 2022 and is supported by the GCRT program and the Department of Pathology targeting general surgical pathologists from LMIC to provide training in breast oncologic pathology with consideration of local settings. It mirrors breast pathology fellowships offered in high-income countries by supporting regular, frequent one-on-one interactions between fellows and faculty. Three physicians successfully completed the Fellowship in 2024: Dr. Luisa Jamisse, a pathologist from Maputo Central Hospital, Mozambique; Dr. Omolade Adegoke, a pathologist from University College Hospital, Ibadan, Nigeria; and Dr. Peter Ologunagba, a pathologist from the Federal Medical Center, Owo, Ondo State, Nigeria. For the '24-25 class we have welcomed 4 pathologists: Dr. Abba Zarami Bukar, from the University of Maiduguri Teaching Hospital and the University of Maiduguri, Nigeria; Dr. Dolapo Akinjo from Lagos University Teaching Hospital, Nigeria; Dr. Atuganile Edward Malango, a pathologist at Muhimbili National Hospital in Tanzania; and Dr. Ivo Jone from Hospital Central da Beira, Mozambique. 2023 Fellows Dr. Omolade Betiku and Dr. Oluwatosin Omoyiola, along with 2024's Dr. Adegoke, have also joined the Fellowship as faculty.

Derek Harwood Nash RSNA International Fellowship

GCRT breast radiologists serve as hosts for selected international fellows through this competitive Radiological Society of North America (RSNA) fellowship program. RSNA supports radiologists from LMIC spending 2-3 months as observers at North American Institutions. We are delighted that Dr. Ngozi Dim from the University of Nigeria

Teaching Hospital in Enugu was selected for this fellowship and spent eight weeks at MSK in the fall of 2024 with the MSK breast radiology group.

Breast Working Group

The Breast Working Group was created to bring together a multidisciplinary group of research collaborators with wide representation of different areas of expertise. It functions as a mechanism to present early-stage ideas for feedback and identification of possible collaborators and/or additional ideas for secondary projects and the maximization of resources. It is a forum for discussion to help strengthen proposals before submission to funding agencies and to increase awareness of projects related to breast cancer so that new efforts can be synergistic and non-competing. The Breast Working Group met throughout 2024 and brought together over 60 physicians and health professionals in person at its September meeting during the ARGO Annual Symposium in Nigeria.

GYN Didactic Lectures

Dr. Alexia Iasonos (MSK), Dr. Ibraheem Awowole (OAUTHC), and Rivka Kahn (MSK) organized, facilitated, and moderated Gynecologic Didactic Training Lectures between ARGO, GCRT, MSK, and OAUTHC.

The lecture series, led by Nadeem R. Abu-Rustum, MD & Ahmed Al-Niaimi, MD., features video illustrations and covers a range of topics.

In Fall 2024, seven lectures were delivered, addressing subjects such as:

- Radical Abdominal Hysterectomy for Cervical Cancer: Anatomy & Classification
- Advanced Ovarian Cancer and debulking surgeries

Lecture topics were determined through collaborative meetings between Dr. Awowole, the gynecologic team in Nigeria, and the MSK team to identify key areas of need. The target audience includes practicing gynecologists in Nigeria, as well as ministers of health and medical trainees.

Biostatistics Training Program

Dr. Alexia Iasonos (MSK), Dr. Arije (OAUTHC) and Matteo DiBernardo (MIT) developed a Biostatistics Training Curriculum in conjunction with the Institute of Public Health (IPH), OAU, GCRT and ARGO. Attendees are required to have an undergraduate degree in a health-related field.

Cohort 1 of the program consisted of two phases:

- Phase 1 (Spring 2024): 26 lectures delivered over 13 weeks by faculty and research fellows from MSK/GCRT, ARGO, and IPH.
- Phase 2 (Fall 2024): Hands-on training for 26 weeks.

This pilot program aims to provide valuable data and needs assessment, informing the development of a formal, funded cancer-specific biostatistics training program in Nigeria.

The goal is to cultivate a group of biostatisticians for future collaborations with cancer researchers who can serve as key faculty members for a future clinical trials course in Sub-Saharan Africa. To achieve this, we will develop a comprehensive course in cancer-related biostatistics, covering key biostatistical concepts and techniques, as well as statistical software applications. This course will provide a solid foundation for biostatisticians to drive progress in cancer research and clinical trials in the region.

New Colonoscopy Training Program

Dr. Isaac Alatise and Dr. Shilpa Murthy collaborated to build a program to increase colonoscopy capacity in Nigeria. This is vital as we perform more early diagnosis studies and identify patients who need colonoscopies. The program included a randomized study comparing low- and high-fidelity colonoscopy training models in

2024. Dr. Greg Knapp led additional faculty from Dalhousie University and Dr. Alex Doyle led additional faculty from Barbados. The training program, funded by Dalhousie University, will continue with in-person training exercises in 2025.

Project ECHO (Extension for Community Healthcare Outcomes)

GCRT-ARGO continued to implement the ECHO model, utilizing technology and the Zoom platform to bring together interdisciplinary teams virtually to discuss maximizing scarce resources and share best practices. Throughout 2024, Breast, Colorectal Cancer Management, Histology, Pathology, and a Radiology-Pathology (RADPATH) ECHOs continued. Additionally, a Portuguese Language-Pathology ECHO, hosted in partnership with Sociedade Brasileira de Patologia, continued in 2024. A survey was conducted to evaluate the RADPATH ECHO, assessing learning impact, participation, and areas for improvement. The results are currently undergoing analysis and will inform strategies to strengthen the ECHO programs going forward.

GCRT Programmatic Meetings

GCRT continues to hold monthly programmatic meetings, bringing together a wide variety of health professionals, including physicians, nurses, medical students, and research staff. Meeting topics vary from reviews of ongoing or planned research studies to guest speakers on relevant research and best practices. This year featured speakers including Dr. Gary Rodin, Professor of Psychiatry and Director of the Global Institute of Psychosocial, Palliative and End-of-Life Care (GIPPEC) University of Toronto and Director of Cancer Experience Program at Princess Margaret Cancer Centre University Health Network-Toronto, Canada discussing "Biomedicine vs The Soul of Medicine A Global Perspective on the Management of Advanced Cancer" and Ms. Jennifer Dent, President and CEO of BIO Ventures for Global Health (BVGH), discussing "African Access Initiative: Building Cancer Care, Delivering Access and Catalyzing Research". A complete list of presentations from 2024 can be found in Appendix 2.

GloCal Grant Mentorship

Dr. Dianna Ng continues to mentor several early-career pathologists in Tanzania. Over the last 5 years, Drs. Asteria Kimambo, Atuganile Malango, and Caroline Ngimba have been awarded GloCal Health Fellowships. The fellowship is a 12-month, mentored research program managed by the University of California Global Health Institute and sponsored by the NIH Fogarty International Center and aims to prepare the next generation of global health researchers. Their projects explore the potential use of new technologies, such as molecular testing and digital pathology, to target gaps in diagnosis for breast, brain, and cervical cancer.

GCRT Global Oncology Track for Trainees at MSK

In 2024, GCRT received approval to begin the first Global Oncology Track for Trainees at MSK to prepare MSK training program graduates to be collaborative leaders in global oncology. The program will allow MSK clinical trainees (residents and fellows) to formally incorporate global health education, training, and research into their MSK training through the GCRT program. This will run concurrently with their clinical training program.

We have selected our pilot group of trainees to start January 2025 and we anticipate accepting applications for our next group late Spring 2025. Interested applicants can reach out to Dr. Mango.

Our first class for the GCRT Global Oncology Track for Trainees includes:

- Edward Christopher Dee, MD (Radiation Oncology)
- Layal Al Mahmasani, MD (GI Oncology)
- Sara Moufarrij, MD (Gynecologic Oncology)
- Fatemeh P. Parvin-Nejad, MD (Breast Surgical Oncology)
- Ya Haddy Sallah, MD (Hematology Oncology)

Research Capacity Building

The GCRT and ARGO research teams look forward to building on the achievements of 2024 and collaborating closely to drive meaningful advancements in cancer care and treatment for patients in Nigeria and other low- and middle-income countries (LMICs).

Nigerian Cancer Research Training (NCAT) Program & Team Science

The NCAT Program, funded by philanthropic support from the Oak Fund and our D43 training grant, entered its third year. The ultimate programmatic goal is to create a cohort of highly skilled investigators able to lead independent oncology research programs, bolster research capacity in Nigeria, and establish long-term research partnerships between Nigeran and North American cancer researchers. After a competitive selection process, scholars are selected to participate in online and in-person training developed by GCRT and ARGO.

Over the three-year period of this program, 46 health professionals have participated, representing multiple disciplines, including anesthesiology, histopathology, hematology, obstetrics and gynecology, oncology, nursing, public health, radiology, and surgery. Many of our scholars are involved in ongoing ARGO research studies, nine have been awarded pilot grants to support their own research, and many having published work related to their areas of research.

Our first three cohorts of scholars have successfully completed the virtual Harvard University's Principles and Practice of Clinical Research Course and our newly selected fourth cohort will begin the course in March 2025.

Additionally, NCAT scholars from our first two cohorts and our D43 post-doctoral scholars are currently participating in the Team Science curriculum which focuses on research that is conducted in interdisciplinary groups and at its core highlights the interdependent nature and relationships within the team. The scholars and post-docs have established research teams and worked together over the year to identify a research question, generate a grant proposal, and submit for pilot funding. GCRT and ARGO are proud of all the NCAT scholars have accomplished and look forward to supporting them as they grow in their careers and lead oncologic research in Nigeria.

Pilot Grants

GCRT and ARGO, together with our North American partner, Dalhousie University, provide pilot grants to Nigerian physicians to conduct research on cancer prevention, diagnosis, treatment, and outcomes. Approximately 22 research pilot grants have been awarded over the last six years. Studies selected this year include:

Effect of educational video on the severity of side effects (SE) and psychosocial distress in breast cancer patients receiving chemotherapy

Dr. Sharif Folorunso, Obafemi Awolowo University Teaching Hospital Complex, Ile Ife, Nigeria

Community Participation to Design Culturally Tailored Tools for Enhanced Cervical Cancer Screening among Women in Northwest Nigeria

Dr. Anita Yafeh Mfuh, Ahmadu Bello University, Zaria, Kaduna State, Nigeria.

Integrating Cervical Cancer Screening into Existing Healthcare Services at University of Abuja Teaching Hospital: A Pilot Study

Dr. Habiba Ibrahim Abdullahi, College of Health Sciences, University of Abuja

Building Institutional Research Capacity

The GCRT-MSK clinical research team traveled to Nigeria in May 2024 to conduct the third annual "Capacity Building Research Training" workshop at OAUTHC. The ARGO program has grown in personnel and expanded to more sites in Nigeria. Forty-three research assistants, representing 11 different hospitals, traveled from across Nigeria to participate along with the team of ARGO program managers. In the previous two years, research trainings focused on the early and middle stages of protocol development and management. Therefore, the theme of the training this year focused on the middle to late stages of protocol management, specifically Quality Assurance (QA) and an introduction to Biostatics and Epidemiology.

In 2024, GCRT partnered with TransforME Now, a consulting company specializing in inclusive, collaborative, and cross-cultural training, to hold an in-person Cross Cultural Communication Workshop for the MSK GCRT and ARGO research teams. Forty-three Nigerian participants attended and five Americans. Together, they explored how to navigate intercultural experiences and build stronger teams. Feedback shared indicated improved understanding, value in teambuilding, and bonding among participants from the different study teams.

New Studies & Research Progress

In 2024, the GCRT-ARGO research teams significantly expanded collaborations both within MSK and across North America, Nigeria, and Sub-Saharan Africa. Partnerships within MSK have grown to include multiple departments such as Nursing, Pathology, Psychiatry and Behavioral Sciences, Radiology, Medical Oncology, and Palliative Care. In North America, collaborations have been strengthened with leading institutions including Johns Hopkins University, Duke University, Mount Sinai, Northwestern University, Dalhousie University, University of Alberta, Einstein, and UCSF. In Nigeria, the network has expanded to include sites nationwide, spanning from the North to the South. Additionally, our collaborations in Sub-Saharan Africa have extended to institutions in East Africa, with partners in Mozambique and Tanzania.

Our studies have focused on improving access to breast cancer screening, diagnosis, and treatment in Nigeria, while also investigating the factors contributing to delays in breast cancer presentation, treatment, and surgical decision-making. To support these efforts, GCRT-ARGO developed a comprehensive, multi-institutional breast cancer database that includes data from seven institutions across Nigeria. This innovative database is being used to collect patient data, enhance our understanding of the breast cancer burden and the care provided across the country. The data are also being utilized to develop interventions to improve breast cancer outcomes and track improvements.

Research Capacity Building CONTINUED

Additionally, our research has:

- Explored colorectal cancer risk factors in West Africa and examined the use of silicone wristbands to measure chemical exposures in Nigeria.
- Developed a comprehensive early diagnosis program for bowel cancer in Nigeria, aiming to improve outcomes by increasing public awareness, enhancing access to care, and reducing delays in diagnosis and treatment.
- Worked on developing a point-of-care, real-time urine metabolomics test for diagnosing colorectal cancers and polyps, specifically designed for low- and middle-income countries.
- Launched a prospective longitudinal randomized controlled trial for newly diagnosed patients with breast, colorectal, or prostate cancer to evaluate the impact of routine financial navigation on reducing catastrophic health expenditures for these patients.
- Initiated a study to assess the accuracy of breast ultrasound AI decision support, paired with tablet-based ultrasound, in a LMIC setting. This study aims to inform future breast cancer trials, improve timely diagnosis, and reduce the burden of advanced breast cancer in resource-limited settings.

Outcomes and analysis of these various studies are being shared through publications in various medical journals and presentations at international meetings. Appendix 3 includes a list of publications.

In 2025, ARGO is set to make significant strides in cancer research and treatment, with a focus on enhancing care in Nigeria. Key initiatives include:

- **First Immunotherapy Study in Nigeria:** ARGO will begin its first PD-1 blockade study in patients with mismatch-repair deficient colorectal cancer in Nigeria, exploring immunotherapy's potential in this setting.
- **Immuno-Oncology Center:** A dedicated center will be established to further advance immuno-oncology research and patient care in Nigeria.
- **Multidisciplinary Tumor Board (MDT) Program:** A MDT program will be initiated, bringing together experts from various specialties to create individualized, evidence-based treatment plans for cancer patients. The program aims to standardize care, improve outcomes, and overcome the challenges that currently hinder MDT implementation in many LMIC, such as healthcare workforce shortages, infrastructure limitations, and difficulties with coordination. Breast cancer, a major concern in Nigeria, will benefit greatly from this collaborative approach.
- **Cancer Databases:** ARGO will launch specialized databases for Sarcoma and Gynecologic cancers, facilitating data collection, research, and treatment protocols.

We will also continue to work on the many ongoing ARGO projects, some of those including:

- The development of an automated, point-of-care DNA methylation cartridge blood test for colorectal cancer detection.
- The use of tablet-based AI decision support alongside mobile tablet-based breast ultrasound for the timely diagnosis of breast cancer.
- Addressing global inequities in breast cancer genetic testing, counseling, and management among breast cancer patients in Nigeria.
- De-escalating axillary surgery after neoadjuvant chemotherapy in node positive breast cancer patients in Nigeria.
- De-escalating mastectomy to facilitate breast conservation in Nigerian women using wire localization.

Research Capacity Building CONTINUED

- Understanding and addressing the barriers to Breast Cancer Reconstruction in Nigeria
- Understanding the barriers to and facilitators of palliative care provision in the Nigerian cancer care setting.
- Tablet-Based Mobile Health Ultrasound for Point-of-care Breast Cancer Diagnosis in Nigeria.
- Evaluating the Impact of Financial Navigation on Financial Toxicity and Treatment Adherence for Cancer Care
- Continued work on our comprehensive multi-institutional breast and colorectal cancer databases addressing multiple areas including determining the risk factor profile and biology of colorectal cancer in Nigeria and improving guideline-concordant breast cancer treatment and quality oncology care delivery in Nigeria
- A second cohort of our comprehensive colonoscopy training program in Ile Ife for senior resident doctors and junior consultant attendees from across Nigeria.

GYN Protocol and Proforma

Dr. Alexia Iasonos (MSK) and Dr. Ibraheem Awowole (OAUTHC) are co-leading the development of a gynecological research program focused on cervical cancer, a collaborative effort between ARGO and GCRT. A significant milestone was achieved with a gynecology-focused session at the ARGO symposium in September 2024, featuring presenters from both MSK and Nigeria. The team is currently working on building a gynecology protocol and proforma database, aiming to present the initial data at the 2025 ARGO symposium. The goal of this research initiative is to establish a comprehensive cervical cancer database, integrating clinical, demographic, treatment, and outcome data from Nigerian tertiary institutions. This database will support research and enhance clinical decision-making for patients diagnosed with cervical cancer.

Financial Support

Grants

Several competitive US grants have been obtained by the GCRT-ARGO team to support our research efforts. Those received in 2024 are in bold.

- **NIH P20 "Addressing cancer disparities in Nigeria through Immuno-oncology Research – The NOLA Program"**

  PI: Kingham/Vega Sanchez/ Alatise. 2-year grant. $781,222 total costs; start 4/1/2024.

- **D43 supplement "Administrative supplement to expand clinical trial capacity in sub-Saharan Africa"**

  PI: Kingham/Alatise. 1-year grant; $88,400 total costs; start 8/1/2024.

- **The Prevent Cancer Foundation "Artificial Intelligence Decision Support for Timely Breast Cancer Diagnosis in Nigeria"**

  PI: Mango/Omisore. 1-year grant. $95,000 total costs; start 1/2024.

- NIH R01 "Development of an automated, point-of-care DNA methylation cartridge blood test for colorectal cancer detection in LMICs-an academic-industrial partnership"

  PI: Sukumar/Kingham/Alatise. 5-year grant. $564,357 total costs; start 6/6/2023.

- NIH D43 "Expanding cancer research capacity in Nigeria with team science"

  PI: Kingham/Alatise; 5-year grant; $1,344,046 total costs; start 3/2022

- R01 Supplement "Collecting whole genome sequence data to enhance the value of the first multi-center study of colorectal cancer risk factors and biology in Nigeria"

  PI: Du; 1-year supplement; $195,604 total costs; start 9/1/2022

- R01 Supplement "Mentoring a Nigerian junior investigator with a mixed-methods analysis of barriers to colorectal cancer presentation in Nigeria"

  PI: Kingham; 1-year supplement; $124,999 total costs; start 9/1/2022

- American Society of Clinical Oncology (ASCO) Young Investigator Award "Improving guideline-concordant breast cancer treatment and quality oncology care delivery in Nigeria"

  PI: Romanoff; 1-year grant; $50,000 total costs; start 1/2022

- NIH P30 (Cancer Center Support Grant) Supplement: "Empathic Communication Skills Training to Reduce Lung Cancer Stigma in Nigeria"

  PI of Supplement: Banerjee/ Ostroff; 1-year supplement; $213,550 total costs; starts 9/1/2021

- American Society of Clinical Oncology (ASCO) Conquer Cancer Innovation Grant "Assessment of diagnostic accuracy of AI in the assessment of lesions on breast ultrasound"

  PI: Ndumia/Mango; 1-year grant; $20,000 total costs; start 10/2021

- NIH K08 "A multi-faceted intervention to promote Breast Cancer Hormone Receptor Testing in Tanzania"

  PI: Ng; 5-year grant; $1,259,171 total costs; start 9/2021

- Pfizer grant "Improving Access to Breast Cancer Screening and Treatment in Nigeria: The Triple Mobile Assessment and Patient Navigation Model"

  PI: Omisore/Mango (OAUTH prime); 2-year grant; $150,000 total costs; start 1/2021

- NIH R01 "Determining the Risk Factor Profile and Biology of Colorectal Cancer in Nigeria"

  PI: Kingham/Alatise/Du; 4-year grant; $1,459,136 total costs; start 8/2020

- Oak Fund "Nigerian Cancer Research Training (NCAT) Program"

  PI: Kingham; 3-year grant; $499,510 total costs; start 7/2021

- NIH UH3/UG3 "Point of care, real time urine metabolomics test to diagnose colorectal cancers and polyps in low-and middle-income countries"

  PI: Kingham/Alatise; 3-year UH3 phase; $2,273,622 total costs; start 4/2020

- The Prevent Cancer Foundation "Efficacy and Feasibility of Fecal Immunochemistry for Colorectal Cancer Screening in Nigeria"

  PI: Kingham/Alatise; 2-year grant; $75,000 total costs; start 1/2020

- The Prevent Cancer Foundation "Feasibility of breast cancer screening in high-risk Nigerian women using a novel low-cost device"

  PI: Mango/Olasehinde; 1-year grant; $100,000 total costs; start date 1/2019

- NIH /NCI R21 "Tablet-based mobile health ultrasound for point-of-care breast cancer diagnosis in Nigeria.

  PI: Sutton; 2-year grant; $389,005 total costs; start date 7/2019

Financial Support CONTINUED

Philanthropic Support

The Thompson Family Foundation has continued to provide annual support for the GCRT Program and renewed its commitment to support our work in the planned immunotherapy trial in 2024.

Oak Fund contributed support to the Nigerian Cancer Research Training Program.

Other Support

Additional financial support has been provided by MSK's office of the Physician-In-Chief, MSK's Dept. of Surgery, MSK's Dept. of Radiology and Sir. Murray Brennan, Senior Vice President for International Programs.

For a list of individuals who have supported GCRT's work, please see Appendix 4.

Support Us

Please consider a tax-deductible donation to help end global cancer disparities:

mskcc.convio.net/goto/GCRT

Digital Resources

GCRT is pleased to share the links below to our websites and social media platforms. We would like to particularly thank Ms. Donna Gibson, Director of Library Services at MSK, Ms. Johanna Goldberg and Ms. Celine Soudant, Research Informationists, at MSK, who have graciously provided various training sessions to our NCAT scholars and D43 Fellows and who have built our GCRT library home page that allows us to share our lectures, events, manuscripts, and a recommended reading list.

1. ARGO Website
2. GCRT on MSK.org
3. ARGO Newsletter
4. ARGO on LinkedIn
5. ARGO on X (Twitter)
6. GCRT resources from the MSK Library
7. ARGO-GCRT Video

Appendix 1: Partner Institutions

Nigerian Members

Obafemi Awolowo University Teaching Hospitals Complex, Ile-Ife, Osun State

University of Ilorin Teaching Hospital, Ilorin, Kwara State

University College Hospital, Ibadan, Oyo State

Federal Medical Center, Owo, Ondo State

UNIOSUN Teaching Hospital, Osogbo, Osun State

Surgical and Trauma Centre, Ondo City, Ondo State

Lagos University Teaching Hospital (LUTH), idi-Araba, Lagos State

Lagos State University Teaching Hospital (LASUTH), Ikeja, Lagos State

Ahmadu Bello University Teaching Hospital, Zaria, Kaduna State

University of Maiduguri Teaching Hospital, Maiduguri, Borno State

Babcock University Teaching Hospital, Inisa-Iremo, Ogun State

Federal Medical Centre, Abeokuta, Ogun State

Ekiti State University Teaching Hospital, Ado-Ekiti, Ekiti State

Federal Medical Centre, Owerri, Imo State

Federal Teaching Hospital, Ido Ekiti

University of Calabar Teaching Hospital, Calabar, Cross-River State

Ladoke Akintola University of Technology (LAUTECH) Teaching Hospital, Ogbomosho, Oyo State

Abia State University Teaching Hospital, Aba, Abia State

Aminu Kano Teaching Hospital, Kano, Kano State

University of Abuja Teaching Hospital, Gwagwalada, FCT, Abuja

Barau Dikko Teaching Hospital, Kaduna, Kaduna State

Federal Medical Center, Birnin-Kebbi, Kebbi State

Onabisi Onabanjo University Teaching Hospital, Sagamu, Ogun State

University of Port-Harcourt Teaching Hospital, Port-Harcourt, Rivers State

Federal Medical Center, Yola, Adamawa State

University of Benin Teaching Hospital, Benin City, Edo State

National Hospital, Abuja

Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State

Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi State

Lakeshore Cancer Centre, Ikeja, Lagos State

University of Nigeria Teaching Hospital (UNTH), Enugu state

Federal Medical Center, Bida

Kwara State University, Ilorin, Kwara State

Federal Medical Centre, Gausau, Zamfara

Bayero University, Kano

Afe Babalola University Ado-Ekiti Multi-system Hospital, Ado-Ekiti; Ekiti State

Irrua Specialist Teaching Hospital, Irrua/Ambrose Alli University, Ekpoma

Marcelle Ruth Cancer Centre & Specialist Hospital, Lagos State

North American Members

Memorial Sloan Kettering Cancer Center, New York, USA

Dalhousie University, Halifax, NS, Canada

Albert Einstein University, New York, USA

Icahn School of Medicine at Mount Sinai, New York, USA

Princess Margaret Cancer Center, Toronto, Canada

Wake Forest University Health Sciences, North Carolina, USA

Partner Institutions in Kenya

Agha Khan University Hospital, Nairobi

Partner Institutions in Tanzania

Muhimbili National Hospital

Aga Khan Hospital

Bugando Medical Center

Kilmanjaro Christian Medical Centre

Mbeya Zonal Regional Referral Hospital

Ocean Road Cancer Institute

Additional Partner Institutions in North America

Brigham and Women's Hospital, Boston, MA, USA

University of California, San Francisco, CA, USA

Duke University, Durham, NC, USA

Johns Hopkins University, Baltimore, MD, USA

Appendix 2: GCRT Program Presentations 2024

Biomedicine vs. The Soul of Medicine. A Global Perspective on the Management of Advanced Cancer

Gary Rodin, MD, FRCPC

Professor of Psychiatry and Director, Global Institute of Psychosocial, Palliative and End-of-Life Care (GIPPEC), University of Toronto and Director, Cancer Experience Program, Princess Margaret Cancer Centre, University Health Network-Toronto, Canada

Treating Mismatch-repair Deficient Colorectal Cancer in Nigeria with PD-1 Checkpoint Blockade Therapy

Fiyinfolu Balogun, MD, PhD

Assistant Attending Physician, Gastrointestinal Oncology, MSK & Sharif Folorunso, MD, Consultant Clinical and Radiation Oncologist, OAUTHC, Nigeria

African Access Initiative: Building Cancer Care Capacity, Delivering Access, and Catalyzing Research

Ms. Jennifer Dent

President and CEO, BIO Ventures for Global Health (BVGH)

Improving Breast Cancer Care Delivery in Nigeria

Anya Romanoff, MD

Assistant Professor, Arnhold Institute for Global Health, Mount Sinai and Global Cancer Disparities Scholar, MSK

My Baby Steps into Cancer Epidemiology

Adeleye Adeomi, MBBS, MPH, PhD

Department of Community Health, Obafemi Awolowo University, D43 Post-Doc, Department of Epidemiology, MSK

ACTION Study (Addressing global inequities in breast cancer genetic testing, counseling and management among breast cancer patients in Nigeria)

Funmilola Wuraola, MD

Lecturer I, Department of Surgery, Obafemi Awolowo University Teaching Hospital, Ile Ife, Nigeria

Ethical and Practical Considerations Related to Genomics Data from U.S. Indigenous Populations

Dr. Krystal Tsosie

Assistant Professor, School of Life Sciences; Associate Director, Biodiversity Knowledge Integration Center, Arizona State University

Ongoing Epidemiologic efforts to Understand Colorectal Cancer in Nigeria

Margaret Du, ScD, MSc

Associate Attending, Dept of Epidemiology & Biostatistics-MSK

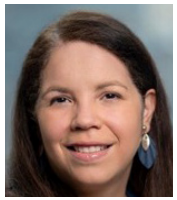
Noah Peeri, PhD, MPH

Research Scholar, SKI-Epidemiology-Biostatistics

Adeleye Adeomi, MBBS, MPH, PhD

Department of Community Health, Obafemi Awolowo University, D43 Post-Doc, Department of Epidemiology, MSK

FIPOL: Capacity Building in behavioral oncology research for Latin America



Rosario Costas-Muñiz, PhD

Associate Attending Psychologist; Director, Global Psycho-Oncology Laboratory (GPOL); Director, Latino Comprehensive Psychosocial Oncology Program (LACOP), MSK

Development of a multidisciplinary team care for breast cancer patients, National Cancer Center of Mongolia's experience

Batsukh Pushkin MD

Chief, Breast Center, National Cancer Center, Ulaanbaatar, Mongolia

Appendix 3: Publications

1. Abate M, Alatise OI, Omisore AD, et al. Unique microbial biomarkers identified in Nigerian patients with colorectal cancer. Published online 2023.
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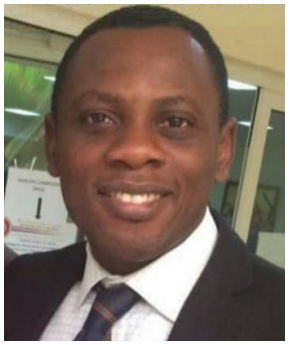
Olusegun Isaac Alatise, MBChB

Anna Dare, MD

Greg Knapp, MSc, FRCSC



Olalekan Olasehinde, MBChB

Kathleen Lynch, MS, MPH

Chizoma Millicent Ndikom, PhD

Appendix 3: Publications CONTINUED

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Appendix 4: Individual Supporters to GCRT

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Future Focus

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