

# BHP THE BHP INSIDER

# NEWSLETTER **BHP Celebrates Graduates in** Research, Laboratory Sciences, and Residency Training



Dr. Bonolo B. Phinius and Dr. Kabo Baruti

Botswana he Harvard Partnership (BHP) proudly celebrates the graduation of nine dedicated research fellows, trainees, and students in 2024. The group, comprising doctoral, master's, and bachelor's degree holders, reflects BHP's commitment to advancing health research and clinical training in Botswana.

Two research fellows earned Doctor of Philosophy (PhD) degrees. Dr Kabo Baruti graduated from the University

of Botswana (UB) with a PhD in Biological Sciences. His thesis, was titled "Prevalence and Molecular Characterization of Hepatitis Delta Virus Among People Living with HIV in Botswana," and explores critical intersections in these common infectious diseases in Botswana.

Dr Bonolo B. Phinius, graduated PhD in Medical Sciences at UB, her research and thesis was on "Hepatitis B Virus Prevalence and Diversity Among People Living

#### with HIV in Rural and Peri-Urban Communities in Botswana."

BHP's Laboratory Scientists, Tsholofelo Mosielele for Phodiso Study and Nokuthula Ndlovu were also among the graduates, with Mosielele earning a Bachelor of Science (BSc) in Biological Sciences from UB, while Ndlovu achieved a Master of Science (MSc) in Biological Sciences and Biotechnology from the Botswana International University of Science and Technology (BIUST).

Several students doing their final year projects at the Botswana Harvard HIV Reference Laboratory (BHHRL) also marked this year's accomplishments. Thato Phenyo graduated with a BSc in Biological and Biotechnology from BIUST, while Florence Gaone Gaongalelwe, Lindiwe Ndlangamandla, and Shelsia De Carmen Langa received BSc degrees in Biological Sciences from UB. Blessing Ndhlovu completed a BSc in Cytotechnology and Histotechnology Sciences at UB.

Additionally, 2024 marks the inaugural graduation of the first cohort of Obstetrics and Gynecology (OBGYN) Residency Program at UB. Mentorship and training benefited from the BHP Clinical Capacity Building Initiative. This program is a collaboration between BHP, Beth Israel Deaconess Medical Center (BIDMC) and Oregon Health & Science University (OHSU), which provides comprehensive clinical training for University of Botswana medical students and residents. The program aims to enhance Botswana's healthcare system through clinical education, quality improvement, and focused research in obstetrics and gynecology.

Meanwhile, BHP Bioinformatician Dr Wonderful Tatenda Choga has successfully defended his PhD thesis in Medical Sciences with UB's School of Allied Health Professions and is scheduled to graduate in 2025. His research, titled "SARS-CoV-2 Evolution in Botswana," examines virology, bioinformatics, and genomics in the context of the COVID-19 pandemic.

These achievements highlight BHP's ongoing dedication to advancing research, capacity building, and clinical training, ensuring a brighter future for health research in Botswana.



**Tsholofelo Mosielele** BSc in Biological Sciences



Nokuthula S. Ndlovu **MSc in Biological Sciences** and Biotechnology



**BSc in Biological Sciences** 



**Thato Phenyo** 

and Biotechnology

Shelsia De Carmen Langa **BSc in Biological Sciences** 



**Blessing Z. Ndhlovu** BSc in Cytotechnology and **Histotechnology Science** 

Florence Gaongalelwe Lindiwe Ndlangamandla **BSc General** 



Obstetrics and Gynecology (OBGYN) Residency Program graduates with their supervisors and mentors

### Phodiso Study Team Makes Strong Impact at Immuno-Zambia 2.0



Phodiso study team, Prof. Catherine Koofhethile, Tsholofelo Mosielele, Patrick Mokgethi and Bonolo Molefe

The Phodiso Study team recently showcased their groundbreaking research at the Immuno-Zambia 2.0 Course, held in Lusaka, Zambia from 20th-22nd October 2024. The course which was themed "New Advances in the Immunology of Infectious Diseases in Sub-Saharan Africa," brought together researchers and postgraduate fellows from across Southern Africa to present, discuss, and collaborate on the immunology in relation to studies in various infectious diseases.

Sponsored by the <u>Immunological Society of Zambia</u> (ISZ), Immunological Society of Malawi (ISM), Centre of Excellence for Spatial Omics Research in Africa (CESORA), and <u>Sub Saharan Network on TB/HIV Research Excellence</u> (<u>SANTHE</u>), the course attracted participants from Botswana, South Africa, Malawi, Zambia, Lesotho, and beyond. The initiative was an invaluable opportunity for both early-career researchers and established scientists to present their immuological research findings and

engage with prominent immunology experts.

#### **Phodiso Study Team Highlights**

The course included several presentations by different attendees. Representing BHP, the Phodiso Study team delivered impressive presentations across a range of topics, receiving high praise for their work:

- Prof. Catherine Koofhethile, Phodiso Study Principal Investogator, led the team with her presentation on "Characterizing the Genetic Composition of Persistent Proviral Reservoir Cells in Adolescents from Botswana Living with HIV-1C Infection Following Long-Term ART and Viral Suppression." She received recognition as one of the conference's top three presenters, earning her a speaker award.

- Patrick Mokgethi presented a poster on his Ph.D. research, titled *"Major Drug-Resistant Mutations Detected in HIV-1 Proviral DNA Among Virologically Suppressed Individuals in Botswana."* He also received

an award as one of the top three poster presenters.

- Bonolo Rejoice Molefe showcased her MPhil proposal in a poster titled *"Evaluation of Neutralization Sensitivity in HIV-1C Envelope Clones Generated from Individuals Living with Chronic HIV-1C Infection in Botswana."* 

- Tsholofelo Kate Mosielele presented her research, "Characterization of T-cell Immunity Among Adolescents and Young People Living with HIV-1C Undergoing Long-Term ART for Over 15 Years." Africa's infectious disease immunology research landscape. These includes, HIV Prevention Strategies, HIV Cure Research, Technological Advances in African Science, HIV and Respiratory Diseease Research, TB Research, Spatial Biology and Omics, Virology and Immunology research of Infectious Diseases.

"Phodiso" is the setswana translation for "Cure" and is the name selected to represent the Prof Koofhethile led HIV cure research laboratory team of BHP scientists.

The course covered an array of topics critical to advance

### BHP, Bummhi, MoH Assess Regulatory Integrity in Botswana



Ngozana Seonyatseng BHP Regulatory Officer

Regulatory Officers from the Botswana Harvard Health Partnership (BHP), Botswana's Ministry of Health (MOH), and the Botswana–University of Maryland School of Medicine Health Initiative (Bummhi) have embarked on a comprehensive assessment of research integrity across the country's research landscape. This collaborative effort, led by researchers from the three entities, has identified key gaps and development of potential strategies to enhance the ethical foundation of research practices within Botswana.

In their abstract titled "Identifying Gaps and Mapping Opportunities for Fostering Research Integrity: An Assessment of Research Integrity in Botswana's Research Landscape," the authors examined researchers' understanding of core research principles such as peer review, authorship, and misconduct.

In an interview with one of the study co-authors, Ngozana Seonyatseng, a Senior Regulatory Coordinator at BHP said "We found that less than half of the participants, just 42%, fully understood the fundamentals of research integrity. This highlights the need for targeted interventions and capacity-building programmes to address the gaps."

He explained that the study administered an anonymous online questionnaire to 126 researchers and the questions covered various aspects of research ethics, including financial conflicts of interest and participant confidentiality. Analysis revealed some concerning trends.

#### "Only 36% of researchers knew the guidelines for authorship, while a staggering 89% lacked a solid understanding of the peer review process," explained Seonyatseng.

Further findings indicated that while 53% of respondents were aware of how to maintain participant confidentiality, only 13% reported knowledge of potential conflicts of interest in research funding. These gaps, according to Seonyatseng, present a significant challenge. Seonyatseng noted that the integrity of research impacts the wider public health policies implemented on the basis of research outcomes, hence the need by the scientific community to address these shortcomings in order to build trust in research outcomes.

Seonyatseng stated that there is a clear opportunity to establish robust infrastructure within these three research entities, to foster an environment that not only upholds but enhances research integrity principles. The study concludes with a call for strategic interventions to promote research ethics training and resources in Botswana's academic and research institutions.

### BHP Hosts Breast Cancer Awareness Talk



#### **Tumor Board Meeting**

s part of Breast Cancer Awareness Month, the Botswana Harvard Health Partnership (BHP) organized an impactful Breast Cancer Awareness Talk on October 25, 2024, inviting staff to learn about prevention, early detection, and the realities of living with cancer. Attendees were encouraged to add a touch of pink to their outfits in support of the cause, creating a visibly united atmosphere at the BHP conference room.

The event began with a presentation on the "Pathophysiology of Breast Cancer" by BHP Cancer Studies Coordinator Isaac Nkele, who broke down the complex processes of cancer development within the body.

Following Nkele's presentation, the main talk was led by Principal Registered Nurse Tebogo Letlhoma from Princess Marina Hospital. Letlhoma addressed the critical topics of breast cancer risk factors, signs and symptoms, cancer staging, and the significance of selfexaminations. "Breast cancer diagnosed early is much more treatable, that is why we advocate for regular selfexams and screenings," she emphasized.

To give staff a practical perspective, a video demonstrating breast self-examination techniques was played, guiding attendees on how to carry out this essential health check. "Breast self- examination is a very important step toward early detection," Letlhoma added.

The highlight of the event was a testimony from breast cancer survivor Betty Mbaembae, who shared her personal journey from diagnosis to recovery. Mbaembae recounted her shock at first noticing unusual signs, her devastating stage-three cancer diagnosis, and the difficult decision to undergo a mastectomy.

"It was a journey I never expected to take," Mbaembae reflected. "But I'm here today to tell you that cancer can be arrested and that early detection saves lives." Mbaembae now dedicates her time to spreading awareness, encouraging regular screenings, and inspiring those fighting cancer to remain hopeful. "It is not an easy road, but with support and awareness, we can make a difference," she told the audience.

The event concluded with a question and answer session, where staff were able to ask questions about breast health, support systems, and preventive measures.

BHP's Breast Cancer Awareness Talk was part of the organization's broader efforts to promote health and wellness among its staff and the community. BHP encourages all staff to participate in screenings, practice self-exams, and support others on the journey toward health and awareness.

....

5

### Pastor Calls for Integration of Spirituality in Cancer Care at BHP Tumor Board



#### Pastor Moses Ramohube

Pastor Moses Ramohube from The Light of Christ Apostolic Church Zion, Metsimotlhabe Branch, delivered a thought-provoking presentation at a BHP Tumor Board meeting on October 15, 2024, where he advocated for the integration of spirituality into healthcare for cancer patients.

The Tumor Board, held at the BHP Conference Room, focused on the holistic management of a breast cancer patient with an ulcerative mass, prompting the pastor's unique perspective on the role of spiritual care.

Invited to provide insight into the church's role in cancer care, Pastor Ramohube emphasized that addressing spiritual well-being alongside medical treatment can lead to improved patient outcomes. "Spiritual care is an essential element in patient care," he stated, noting that spiritual distress can adversely impact both quality of life and health outcomes. "Patients endure not only physical but also spiritual pain, especially those with life-threatening illnesses such as cancer," he added, underscoring the need for a holistic healthcare approach. Pastor Ramohube shared that his church actively supports members by encouraging both spiritual healing and medical care. "We believe in empowering individuals to make wise health decisions," he said. "While we perform spiritual healing, we also urge our members to seek medical attention. Our focus is on supporting the whole person." He further clarified that his church's approach contrasts with that of some churches that discourage medical treatment, reiterating that health empowerment is essential.

Pastor Ramohube pointed out a gap in health systems, which often address physical and psychological suffering but neglect spiritual needs. "Suffering is experienced by a person, not merely their body," he explained. "For true holistic care, healthcare systems must integrate spiritual support, to address all aspects of patient well-being."

As healthcare continues to evolve toward holistic models, Pastor Ramohube's message advocates for an approach that recognizes the mind, body, and spirit as integral to a patient's healing process.

### IT Department Launches Information Security Awareness Campaign

n a proactive move to build a cyber-savvy culture and to strengthen cybersecurity across the organization, the Botswana Harvard Partnership (BHP) IT department, under the leadership of IT Manager Thuso Mokane, has launched a Cyber Awareness Program aimed at educating staff on emerging cyber threats and best practices for online safety.

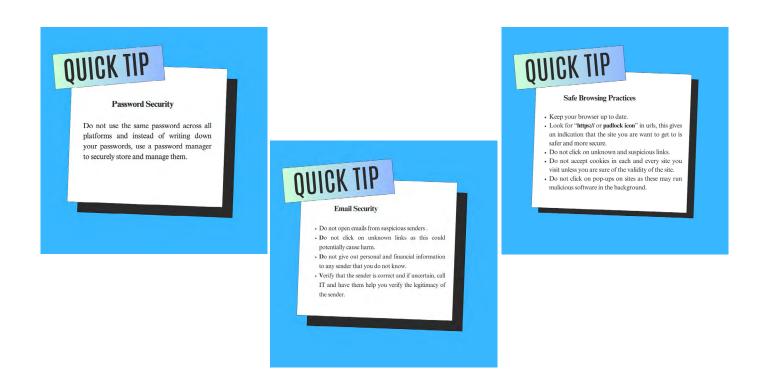
The initiative comes as cyber attacks continue to evolve, with ever increasing sophistication, targeting both organizations and individuals. "Our goal is to equip everyone at BHP with the knowledge and tools they need to protect themselves and the organization against potential cyber threats. Cybersecurity is not just the responsibility of IT, it is a shared responsibility across the entire organization," said Mokane.

The program, which began on October 21, 2024, takes the form of weekly "Cyber Tips" emails sent to all BHP staff. Each tip focuses on a specific area of information security, such as safe browsing, email security, and password protection, protecting personal data, and reporting suspicious activity, providing employees with simple, actionable advice.

According to Mokane, these weekly emails are designed to be concise and easily digestible, making it simple for staff to incorporate safe practices into their daily routines. As part of the campaign, the IT department encourages staff to reach out with questions or concerns about information security.

The campaign aligns with BHP's commitment to safeguard its research data and ensuring compliance with global data protection standards. "At BHP, data security is central to our mission, and creating a cyberaware culture is key to keeping our information secure," said Mokane.

As the campaign progresses, Mokane and his team are hopeful that these proactive steps will help BHP staff feel better prepared to handle the ever-changing landscape of cybersecurity.



### **Human Resources updates**

Welcoming New Employees effective October 2024.



Dr Swetha Jammalamadugu Study Physician (Hope II)



Dr Kesaobaka Molebatsi Biostatistician



Precious Antonio Research Nurse (Motheo / MRI)



Keatlaretse Tebele Cleaner (Tshireletso)

## **Publications**

1. Infectious Morbidity and All-cause Mortality of Infants HIV-exposed Uninfected Compared to Infants <u>HIV-unexposed Uninfected in Botswana.</u> Dubois MM, Jao J, Sun S, Legbedze J, Schenkel S, Mmasa N, Kgole SW, Masasa G, Happel AU, Iwase SC, Haghighat R, Moyo S, Sharma TS, Edlefsen PT, Shao D, Jaspan H, Powis KM. Pediatr Infect Dis J. 2024 Oct 31. doi: 10.1097/INF.000000000004603. Online ahead of print. PMID: 39486012.

2. <u>Use of an Ethinyl Estradiol/Etonogestrel Vaginal Ring Alters Vaginal Microbial Communities in Women with HIV.</u> Tobin NH, Brooker SL, Li F, Coombs RW, Cohn SE, Moran L, Leon M, Chotirosniramit N, Jalil E, Chakalisa UA, Scarsi KK, Zorrilla CD, Godfrey C, Aldrovandi GM. J Infect Dis. 2024 Oct 31:jiae524. doi: 10.1093/infdis/jiae524. Online ahead of print. PMID: 39479902.

3. <u>High-grade cervical disease and cervical cancer in women aged 50 years and older compared with</u> younger women: examining prevalence by HIV status in two large prospective cohorts in Botswana. Luckett R, Zhang BX, Gompers A, George J, Modest A, Bazzett-Matabele L, Vuylsteke P, Kula M, Monare B, Botha MH, Shapiro RL, Ramogola-Masire D, Grover S. BMJ Open. 2024 Oct 29;14(10):e089375. doi: 10.1136/bmjopen-2024-089375. PMID: 39477271.

4. <u>Patterns of HIV-1 Drug Resistance Observed Through Geospatial Analysis of Routine Diagnostic Test-</u> <u>ing in KwaZulu-Natal, South Africa.</u> Gounder L, Khan A, Manasa J, Lessells R, Tomita A, Pillay M, Manyana SC, Govender S, Francois KL, Moodley P, Msomi N, Govender K, Parboosing R, Moyo S, Naidoo K, Chimukangara B. Viruses. 2024 Oct 19;16(10):1634. doi: 10.3390/v16101634. PMID: 39459966.

5. Integration of genomic and pharmacokinetic data to predict clinical outcomes in HIV-associated cryptococcal meningitis. Stott KE, Mohabir JT, Bowers K, Tenor JL, Toffaletti DL, Unsworth J, Jimenez-Valverde A, Ahmadu A, Moyo M, Gondwe E, Chimang'anga W, Chasweka M, Lawrence DS, Jarvis JN, Harrison T, Hope W, Lalloo DG, Mwandumba HC, Perfect JR, Cuomo CA; AMBITION Study Group. mBio. 2024 Oct 16;15(10):e0159224. doi: 10.1128/mbio.01592-24. Epub 2024 Aug 27. PMID: 39189739.

8

6. <u>High-risk human papillomavirus diversity among indigenous women of western Botswana with nor-mal cervical cytology and dysplasia.</u> Rantshabeng PS, Tsima BM, Ndlovu AK, Motlhatlhedi K, Sharma K, Masole CB, Moraka NO, Motsumi K, Maoto-Mokote AKT, Eshetu AB, Tawe L, Gaolathe T, Moyo S, Kyokun-da LT. BMC Infect Dis. 2024 Oct 15;24(1):1163. doi: 10.1186/s12879-024-10058-z. PMID: 39407130.

7. <u>Hepatitis Delta Virus Clade 8 Is the Predominant Clade Circulating in Botswana amongst People Liv-ing with HIV.</u> Baruti K, Choga WT, Motshosi PC, Phinius BB, Phakedi B, Bhebhe LN, Mpebe GGA, Tsayang CD, Ratsoma T, Gaolathe T, Mosepele M, Makhema J, Shapiro R, Lockman S, Moyo S, Jongman M, Anderson M, Gaseitsiwe S. Viruses. 2024 Oct 4;16(10):1568. doi: 10.3390/v16101568. PMID: 39459902.

8. Effect of antenatal Chlamydia trachomatis and Neisseria gonorrhoeae screening on postdelivery prevalence and vertical transmission in Gaborone, Botswana: findings from an exploratory study. Mussa A, Wynn A, Ryan R, Babalola CM, Hansman E, Simon S, Bame B, Moshashane N, Masole M, Wilson ML, Klausner JD, Morroni C. Sex Transm Infect. 2024 Oct 4:sextrans-2023-055965. doi: 10.1136/sextrans-2023-055965. Online ahead of print. PMID: 39366745.

#### 9. Markers of Maternal Bone and Renal Toxicity Through 50 Weeks Postpartum: IMPAACT 2010 (VEST-

<u>ED) Trial.</u> Masheto G, Brummel SS, Ziemba L, Shepherd J, Mbengeranwa T, Igawa L, Coletti A, Mukura D, Rossouw L, Theron G, Krotje C, Jean-Philippe P, Chakhtoura N, Cassim H, Mathiba SR, Maena J, Murtaugh W, Fairlie L, Currier J, Hoffman R, Chinula L, Sax PE, Stranix-Chibanda L, Lockman S; IMPAACT 2010/VEST-ED Study Team and Investigators. J Acquir Immune Defic Syndr. 2024 Oct 1;97(2):172-179. doi: 10.1097/QAI.00000000003478. PMID: 39250651.

10. <u>Lamivudine dosing for preterm infants exposed to HIV: a population pharmacokinetic modelling</u> and simulation study. Bekker A, Capparelli EV, Mirochnick M, Clarke DF, Cotton MF, Shapiro R, McCarthy K, Moye J, Violari A, Chokephaibulkit K, Abrams E, Penazzato M, Ruel TD, Cressey TR. J Antimicrob Chemother. 2024 Oct 1;79(10):2570-2574. doi: 10.1093/jac/dkae259. PMID: 39092932.

11. <u>Drug-drug interactions between antiretrovirals and hormonal contraception: An updated sys-</u> <u>tematic review.</u> Todd CS, Lorenzetti L, Mussa A, Ridgeway K, Morroni C, Nanda K. Contraception. 2024 Oct;138:110490. doi: 10.1016/j.contraception.2024.110490. Epub 2024 May 16. PMID: 38762199.

12. <u>Pilot Test of Mopati, a Multi-Level Adherence Intervention for People Living with HIV and Their</u> <u>Treatment Partners in Botswana.</u> Bogart LM, Phaladze N, Kgotlaetsile K, Klein DJ, Goggin K, Mosepele M. Int J Behav Med. 2024 Oct;31(5):787-798. doi: 10.1007/s12529-023-10233-7. Epub 2023 Nov 13. PMID: 37957535.

### VISION

To Be a World-Renowned Public Health Institute.

### **MISSION**

To Fight HIV/AIDS and Emerging Public Health Challenges Through Innovative Research, Education, and Capacity Building That Impacts Policy and Practice.

### **CORE VALUES**

BENEFICENCE INNOVATION COLLABORATION EXCELLENCE BOTHO

Botswana Harvard Health Partnership Private Bag BO320 Gaborone Plot No. 1836, Northring Road, Princess Marina Hospital, Gaborone Tel: +267 3902671, Fax: +267 3901284 Web: www.bhp.org.bw

