



AfSHG

**African Society of
Human Genetics**

SAVE THE DATE

The 14th Meeting of AfSHG and the 2nd International Congress of SM2GH



2nd
Announcement

THEME:

**Applications
of Genomic Medicine
in Africa**

12-17
DECEMBER
2022

Prof. Khalid SADKI

Mohammed V University, Rabat
President/Founder of SM2GH
Chairman of the congress

Prof. Ambroise Wonkam

Johns Hopkins University, USA
President of AfSHG
Co-Chair of the congress

📍 [moroccansocietyofgenomics](https://moroccansocietyofgenomics.org) 🌐 [SM2GH](https://sm2gh.ma)

🌐 <https://sm2gh.ma> 🌐 <https://www.afshg.org>

**Centre de Conférences
de la Fondation
Mohammed VI**

RABAT - MOROCCO



PRE-PROGRAM



DAY 1&2



AfSHG
African Society of
Human Genetics

12 - 13 December 2022

The 14th Meeting of AfSHG and the 2nd International Congress of SM2GH

PRE-CONGRESS WORKSHOP

NGS Analysis Workshop for Monogenic Disease in African Populations

Supported by AfSHG, SM2GH and Wellcome Connecting Science

Hour	Monday 12 December	Hour	Tuesday 13 December
07h00	Transport - Hotel to CC	07h00	Participants check out of hotel Transport Hotel to CC
07h30	REGISTRATION at conference centre	07h30	Recap/Day review
08h00	Welcome and Introductions	08h00	Interpretation of genetic variants <i>Maria Mudau</i> <i>Christian Gilissen, Mohamed Zahir</i>
08h15	Reference variation datasets <i>Aleena Mushtaq</i> <i>Segun Fatumo</i>	09h00	Case study exercises <i>Maria Mudau</i> <i>Christian Gilissen</i>
09h30	NGS Technologies <i>Maria Mudau, Bana Alamad</i> <i>Mohamed Zahir</i>	10h30	TEA & COFFEE
10h30	TEA & COFFEE	11h00	Case study exercises, presentations <i>Maria Mudau</i> <i>Christian Gilissen</i>
11h00	Variant analysis & workflow QC <i>Christian Gilissen</i> <i>Kevin Kum Esoh</i> <i>Catherine Tcheandjieu</i>	12h30	International networks <i>Victoria Nembaware, Bana Alamad</i>
12h00	Mapping, variant calling, CNVs <i>Kevin Kum Esoh</i> <i>Christian Gilissen</i>	13h00	LUNCH
13h00	LUNCH	14h00	Limitations of genome analysis methods <i>Catherine Tcheandjieu, Bana Alamad</i>
14h00	Variant Annotation <i>Samuel Adadey</i> <i>Aleena Mushtaq</i>	15h00	Ethical considerations <i>Syntia Munung</i> <i>Bana Alamad</i>
15h00	Variant filtering strategies & prioritisation <i>Christian Gilissen</i> <i>Kevin Kum Esoh</i>	16h00	Wrap-up and Close of workshop
16h00	TEA & COFFEE	16h30	TEA & COFFEE / END OF COURSE
16h30	Clinical significance, validity/utility <i>Maria Mudau</i> <i>Mohamed Zahir</i>	17h00	AfSHG YOUNG INVESTIGATORS FORUM
17h30	Functional characterisation - model systems <i>Mohamed Zahir</i> <i>Samuel Adadey</i>		
18h30	END OF DAY 1		
18h30	Transport to hotel		

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DAY 2



AFSHG
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Monday 12 December 2022

Afternoon

16h30 ▶ 17h05

YOUNG INVESTIGATORS FORUM (YIF)

Chairs: Vicky Nembaware & Mohamed Nejmeddine & Sellama Nadifi

Title:

Charles Wray, The JAX cancer center, National Cancer Institute, USA.

17h05 ▶ 17h40

Seminar on PhenoDB

Nara Lygia De Macena Sobreira, Johns Hopkins University, USA.

17h40 ▶ 18h30

CAREER PANEL

Leon Mutesa, Nchangwi Syntia Munung, Youssef Idaghdour.



DAY 3



AfSHG
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Wednesday 14 December 2022

The 14th Meeting of AfSHG and the 2nd International Congress of SM2GH

Morning



08h30 ▶ 12h30

25 SELECTED ORAL PRESENTATIONS 10 MINS/PHD STUDENTS AND POST-DOC.

Chairs: Michel Ramsay & Mohammed Mzibri & Hind Dehbi

 LUNCH (12h30 ▶ 13h30)

12h00 ▶ 14h00

PARTICIPANT REGISTRATION

15h00 ▶ 16h00

Opening Ceremony at Hassan II Academy of Sciences and Technology



Afternoon

16h00 ▶ 16h35

Chairs: Khalid Sadki & Ambroise Wonkam

**Plenary Conference 1:
The translational genomics of complex diseases**

Eleftheria Zeggini, German Research Center for Environmental Health Externes, Germany.

16h35 ▶ 17h05

**Plenary Conference 2:
The evolution of public health immunogenomics into the new era
of personalized medicine. (Past, Present, and Future)**

Dominique charron, AP-HP Saint Louis Hospital, Paris University, France.

WELCOME COCKTAIL (17h05 ▶ 18h00)

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DAY 4



AfSHG
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Thursday 15 December 2022

The 14th Meeting of AfSHG and the 2nd International Congress of SM2GH



Theme 1: Population Genetics and Bioinformatics

Chairs: Leon Mutesa & Mohammed Zahir

08h30 ▶ 09h05

Keynote: **Genomic analyses reveal a complex African population demographic history and signatures of local adaptation.**

Sarah Tishkoff, University of Pennsylvania, USA

Session 1: Population Genetics and Bioinformatics I (H3Africa)

09h05 ▶ 09h30

African genome studies: Human migration and health.

Neil Hanchard, National Human Genome Research Institute, USA.

09h30 ▶ 09h55

Genomic contributions to cardiometabolic diseases in African populations from the H3Africa AWI-Gen study.

Michel Ramsay, University of the Witwatersrand, South Africa.

☕ COFFEE BREAK / POSTERS (09h55 ▶ 10h25)

Session 2: Population Genetics and Bioinformatics II

Morning

10h25 ▶ 10h50

Genomic insights into the population history of North African groups.

David Comas, Universitat Pompeu Fabra Barcelona, Spain.

10h50 ▶ 11h10

Embracing African genetic diversity for novel gene discovery and genetic risk prediction.

Segun Fatumo, MRC/UVRI & LSHTM, Uganda Medical Informatics Centre, Uganda.

11h10 ▶ 11h20

Unravelling the genetic risk associated with major depressive disorder among an ethnically diverse African ancestry population.

Kester Bevin Bataringaya Tindi, Ronald Galiwango, Dickens Howard Akena, Eugene Kinyanda and Allan Kalungi.

11h20 ▶ 11h30

Mitochondrial HVRI and whole mitogenome sequence variations portray similar scenarios on the genetic structure and ancestry of northeast Africans.

Maha Mohammed, Hisham Hassan, Mohammed Elnour, Heeran Makkan, Eyoab Gebremeskel, Thoyba Gais, Mahmoud Koko, Himla Soodyall and Muntaser Ibrahim.

11h30 ▶ 11h40

Validation of New Gene Variant Classification Methods: a Field-Test in Diagnostic Cardiogenetics.

Mohamed Zahir, Helga Westers, Yvonne Vos, K Joeri van der Velde, Rolf Sijmons, Paul van der Zwaag, Birgit Sikkema-Raddatz and Jan Jongbloed.

🕒 LUNCH (11h40 ▶ 12h40)





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Afternoon

12h40 ▶ 13h15

Theme 2: Genetics of Infectious diseases / Single Cell Genomics

Chairs: Guida Landoure & Hicham Oumzil

Keynote: **Mycobacterium-human interactions and the severity of tuberculosis.**
Scott Williams, Case Western Reserve University, USA.

Session 3: Genetics of Infectious Diseases 1

13h15 ▶ 13h40

Burden of post-traumatic stress disorder and leukocyte methylomic imprints in associated neurocognitive outcomes in postgenocide Rwandan population.

Leon Mutesa, Center for Human Genetics, Rwanda.

13h40 ▶ 14h05

Inter-ethnic differences in global metabolomic responses to infection.

Youssef Idaghdour, New York University Abu Dhabi, UAE.

14h05 ▶ 14h15

Molecular characterization of SARS-CoV-2 detected in Morocco during the Omicron wave: Identification of the amino acid substitutions related to transmissibility and severity.

Hassan Ihazmade, Khalid Sadki and Hicham Oumzil.

14h15 ▶ 14h25

Resistome Analysis of Wastewater Treatment Plants in the Agadir Region, Morocco.

Maryem Wardi, Zohra Lemkhente, Mohamed Aghrouch, Aicha Ait Alla, Noureddine Slimani, M'Hamed Abali, Fatima Boubrik and Ahmed Belmouden.

14h25 ▶ 14h35

GYPB Gene Deletions (DEL1 and DEL2) Distribution in Selected Malaria Endemic African Countries and Relationship with Malaria Susceptibility.

Dominic Amuzu, Nora Nganyewo, Eniyu Oriero, Collins Morang'A, Nancy Nyakoe, Vincent Ntui-Njock, Vincent Duru, Kirk Rockett, Dominic Kwaitkowski, Gordon Awandare, Tobias Apinjo, Lucas Amenga-Etego and Alfred Amambua-Ngwa.

Session 4: Single Cell Genomics

14h35 ▶ 15h00

Chairs: Sarah Tishkoff & Youssef Idaghdour

Identifying And rationally modulating cellular drivers Of enhanced and diminished immunity.

Alex K. Shalek, Institute for Medical Engineering & Science, MIT. Massachusetts, USA.

15h00 ▶ 15h25

Single-cell transcriptomic profiling of West African children infected with Plasmodium falciparum.

Tala Shahin, New York University Abu Dhabi, UAE.

15h25 ▶ 15h50

Single cell epigenomics of the bone marrow pre and post vaccination

Musa Mhlanga, Radboud University Medical Center, Nijmegen, The Netherlands.

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☕ COFFEE BREAK/POSTERS/EXHIBITS (15h50 ▶ 16h20)

Parallel Session 5

MEGAFLEX COMPANY SYMPOSIUM (16h20 ▶ 17h20)	CERBA COMPANY SYMPOSIUM (16h20 ▶ 17h00)
<p>Chair: Abdelilah Laraqui</p> <p>Unlocking Precision Medicine thanks to Illumina combined NGS and Microarrays solutions. <i>Xavier David, Senior Manager - Genotyping Sales at Illumina.</i></p>	<p>Chair: Sonia Abdelhak & Zohra Lemkhente</p> <p>The new era of cancer genetics in clinical practice. <i>Raouf Benabdelali.</i></p> <p>M. tuberculosis gene resistance sequencing: a new tool in diagnosis. <i>Sabine Trombert.</i></p>
	THERMOFISHER COMPANY SYMPOSIUM (17H00 ▶ 17H20)
	<p>Chair: Fatima Boubrik & Amadou Gaye</p> <p>Predictive Genomics: Using of Microarrays from mutation Screening to Polygenic Risk Scores. <i>Gonçalo Carvalho, Thermo Fisher Scientific.</i></p>

Session 6: Genetics of Infectious Diseases 2

17h20 ▶ 17h40	<p>Chairs: Segun Fatumo & Oumkeltoum Ennibi</p> <p>Wastewater genomic surveillance as an approach to track infectious diseases pathogens in the Agadir region. <i>Ahmed Belmouden, Ibn Zohr University, Agadir, Morocco.</i></p>
17h40 ▶ 18h00	<p>Genomic approaches to malaria elimination. <i>Issiaka Soulama, Ouagadougou, Burkina Fasso.</i></p>
18h00 ▶ 18h20	<p>Spillover: Jumping viruses and the risk of new epidemic diseases. <i>Sayeh Ezzikouri, Institut Pasteur du Maroc, Casablanca, Morocco.</i></p>

General Assembly of the AfSHG
(18h00)

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DAY 5



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08h30 ▶ 09h05

Theme 3: Hereditary disorders

Chairs: Nkya Siana & Hamid Barakat

Keynote: **Africa is the Next Frontier of Novel Disease Genes Discovery: The Case of Inheritable Hearing Impairment.**

Ambroise Wonkam, Johns Hopkins University, USA.

Session 7: Genetics of rare diseases

09h05 ▶ 09h30

High-throughput genomics reveals new findings on Moroccan family with Hyper IgE Syndrome: Towards a new atypical form.

Khalid Sadki, Mohammed V University in Rabat, Morocco.

09h30 ▶ 09h55

Rare diseases research in Africa: Achievements and remaining challenges

Aimé Lumaka, University of Kinshasa, Democratic Republic of Congo.

09h55 ▶ 10h20

Consanguinity and incidence of rare disorders in North Africa: From burden to opportunity.

Ghada El-Kamah, Human Genetics and Genome Research Institute, National Research Center, Egypt.

Chairs: Issiaka Soulama & Amal Bouziane

10h20 ▶ 10h30

Whole exome sequencing reveals known and candidate genes in non-syndromic hearing impairment in Mali.

Abdoulaye Yalcouyé, Isabelle Schrauwen, Oumou Traoré, Christian Domilongo Bope, Alassane Dit Baneye Maiga, Abdoulaye Taméga, Anushree Acharya, Thashi Bharadwaj, Carmen de Kock, Mario Jonas, Oluwafemi G Oluwole, Cheick O Guinto, Guida Landouré, Suzanne M. Leal and Ambroise Wonkam.

10h30 ▶ 10h40

The state of the art of Tunisian patients with Netherton Syndrome: Founder mutation in seven patients.

Hamza Chouk, Sana Mokni, Lobna Boussofara, Nouredine Litaiem, Houda Hammami, Mourad Mokni, Badreddine Sriha, Ali Saad, Alain Hovnanian, Mohamed Denguezli and Dorra H'Mida.

10h40 ▶ 10h50

Long-reads Nanopore-based sequencing to fully sequence the CFTR gene on potential CF African patients.

Nada El Makhzen, Alexandre Bokhobza, Laila Bouguenouch and Hugues Abriel.



COFFEE BREAK / POSTERS (10h50 ▶ 11h15)

Morning

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Session 8 : Genetics of Complex Diseases

Morning

11h15 ▶ 11h40

Chairs: Ghada El-Kamah & Nisrine Aboussair

Genetics of hearing loss: state of art in Morocco.

Hamid Barakat, Institut Pasteur du Maroc, Morocco.

11h40 ▶ 12h05

Clinical and genetic characteristics of 53 Moroccan children's patients with Lysosomal storage diseases.

Rachid Abilkassem, Hôpital d'instruction Militaire M^{ed} V de Rabat, Morocco.

Chairs: Rachid Abilkassem & Said Aoufouchi

12h05 ▶ 12h15

Transcriptome signature of sodium intake in and links to cardiovascular traits.

Amadou Gaye, Malak Abbas, Paule Joseph, Gabriel Goodney, Henry Gong, Lisa DeRoo, Sharon Davis and Gary Gibbons.

12h15 ▶ 12h25

cis-eQTL mapping of TB-T2D comorbidity elucidates the involvement of African ancestry in TB susceptibility.

Yolandi Swart, Caitlin Uren, Clare Eckold, Jacqueline Cliff, Stephanus Malherbe, Katharina Ronacher, Cisca Wijmenga, Hazel Dockrell, Reinout van Crevel, Gerhard Walzl, Leanie Kleynhans and Marlo Möller.

12h25 ▶ 12h35

Discovery and fine-mapping in lipid multi-trait genome-wide study of 125,000 individuals of African ancestry.

Abram Kamiza, Sounkou Touré, Opeyemi Soremekun, Tafadwa Machipisa, Feng Zhou, Cheickna Cissé, Christopher Kintu, Mamadou Wélé, Oyekanmi Nashiru, Jeffrey Shaffer, Aboubacrine Touré, Seydou Doumbia, Jennifer Asimit, Tinasha Chikowore and Segun Fatumo.

12h35 ▶ 12h45

Copy number variation in autism spectrum disorders in Egyptian patients.

Amal Mohamed, Ola Eid, Marwa Farid, Peter Safwat, Rana Mahrous, Saly Gharib, Nagwa Meguid, Amal Elsaeid and Maha Hemimi.



LUNCH: Talk with Editor about publishing; Scott Williams, PLOS Genetics (session 7) (12h45 ▶ 13h45)

Afternoon

Free time



GALA DINNER (19h30)



DAY 6



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Theme 4: Cancer Genetics and Genomics

Chairs: Raj Ramesar & Hassan Errihani

08h30 ▶ 09h05

Keynote: **Cancer genetics and polygenic inheritance.**

Walter Bodmer, Cancer and Immunogenetics Laboratory, Weatherall Institute of Molecular Medicine, University of Oxford, Oxford, UK.

Session 9: Cancer Genetics and Genomics

09h05 ▶ 09h30

PerMediNA Project: precision medicine beyond oncology

Yosr HAMDJ, Pasteur Institute of Tunis, Tunisia.

09h30 ▶ 09h55

The role of genetics in colorectal carcinogenesis: Does race matter?

Hassan Ashktorab, Howard University College of Medicine, Washington DC, USA.



COFFEE BREAK / POSTERS (09h55 ▶ 10h30)

10h30 ▶ 10h55

Molecular biomarkers in bladder cancer management: The era of immuno-oncology.

Mohammed El Mzibri, National Center of Energy, Sciences and Nuclear, Rabat, Morocco.

10h55 ▶ 11h20

Molecular characteristics of breast cancer about more than 2500 cases in the National Institute of Oncology.

Fouzia Mamouch, National Institute of Oncology, Morocco.

11h20 ▶ 11h30

Novel BRCA2 and SPART germline breast cancer variants in Ghanaian women.

Claudia Anyigba, Lucas Amenga-Etego and Lily Paemka.

11h30 ▶ 11h40

Incidental variants discovery in breast cancer predisposition genes in Malian population from 52 whole exome sequencing data.

Modibo K Goita, Salia Bamba, Oumar Samassekou, Guida Landoure and Mahamadou Traore.

11h40 ▶ 11h50

SULT1A1 c.*85C>T single nucleotide polymorphism is important in the pharmacogenomics of tamoxifen therapeutic response among South African Mixed Ancestry breast cancer patients.

Bianca Kruger, Trevor Mafu, Jesmika Singh, Nyarai Soko, Delva Shamley and Collet Dandara.

Chairs: Rajae Elaouad & Sanaa Chala

11h50 ▶ 12h35

Discussion Panel "Ethics Genomics"

*Nadia El Kadmiri, Molecular Engineering, Valorization and Environment Team, Ibn Zohr University, Morocco.
Yosr Hamdi, Laboratory of Biomedical Genomics and Oncogenetics, Pasteur Institute of Tunis, Tunisia.
Nchangwi Syntia Munung, Division of Human Genetics, University of Cape Town, South Africa*

12h35 ▶ 13h00

AfSHG Gateway on Open Research Africa (ORA)

Elizabeth Marincola, Science for Africa Foundation

LUNCH (13H00 ▶ 14H00)

Morning

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Theme 6: Translational Genetics

Chairs: Dominique Charron & Karim Benabdellah

14h00 ▶ 14h35

Keynote: **Gene addition and gene editing based therapies for inherited metabolic liver disorders.**

Gloria González Asequinolaza, Foundation for Applied Medical Research, University of Navarra, IdisNA, Pamplona, Spain.

Session 10: Cancer Immunotherapy

14h35 ▶ 15h00

Immunotherapy anti-check point: experience of department of oncology university Mohammed V Rabat

Hassan Errihani, National Institut of Oncology, Rabat, Morocco.

15h00 ▶ 15h25

RNA therapeutics for human brain cancer treatment

Rachid El Fatimy, Mohammed VI Polytechnic University, Morocco.

☕ COFFEE BREAK AND GB (15h25 ▶ 16h00)

Session 11: Translationnel Immunogenetics

Chairs: Musa Mhlanga & Gloria González Asequinolaza

16h00 ▶ 16h25

B cell and genome plasticity

Said Aoufouchi, Institut Gustave Roussy, Paris, France.

16h25 ▶ 16h50

Fueling cancer immunotherapy with genome editing.

Karim Benabdellah, Centre for Genomics and Oncological Research, Spain.

16h50 ▶ 17h15

The Human Leukocyte Antigen (HLA) in psychiatric disorders.

Ryad Tamouza, Mondor institute of biomedical research, Paris Est University Henri Mondor hospital, Créteil, France.

17h15 ▶ 17h25

Proteomic variation and its correlation with obesity across two ethnic groups in Nigeria.

Arjun Biddanda, Karen Perez de Arce, Golibe Eze-Echesi, Chiamaka Nwuba, Yusuf Ibrahim, Cameron D. Palmer, Abasi Ene-Obong, Jumi Popoola, Colm O'Dushlaine and Peter Fekkes.

17h25 ▶ 17h35

Impact of rare genetic variants on ADME protein structures identified in sub-Saharan Africa: CYP3A5 as a study model.

Houcemeddine Othman and Jorge E.B da Rocha.

17h35 ▶ 17h45

Application of Whole Exome Sequencing Data: in Search of Informative African-Specific Pharmacogenetic Profiles for Warfarin.

Arinao Ndadza, Kevin Esoh, Sarudzai Muyambo, Nyarai Soko, Pindile Mntla, Ambroise Wonkam, Mpiko Ntsekhe and Collet Dandara.

Afternoon

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CLOSING CEREMONY SESSION

Chairs: khalid Sadki & Ambroise Wonkam

17h45 ▶ 18h45 **AfSHG: Annual General Meeting**

18h45 ▶ 19h30 Closing of Meeting and Prize Giving

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