Professor Hassen A. Gharbi

Summary of Prof. Gharbi's contributions

Professor Hassen A. Gharbi from Tunis, Tunisia, is nominated for his pioneering contributions to the development of radiology in Africa and his dedication to strengthening ties between African and Western biomedical doctors, notably in the field of radiology of parasitic diseases. He pioneered pediatric radiology in his home base Tunisia and in other African countries, being one of the first African specialists to receive worldwide exposure and recognition. Prof. Gharbi played an important role in fighting hydatid disease—a terrible parasitic infection and a huge burden on humankind in Africa and elsewhere—through key and high-impact contributions to diagnosis, treatment and prevention. The Gharbi classification of hydatid disease stages has been widely adopted in Africa and elsewhere and has impacted the diagnosis of millions of people and domestic animals. He was a key player in the development of a novel low-cost and low-burden treatment of hydatid disease that has been widely adopted in developing countries. Prof. Gharbi has been the principal ambassador of African radiology in the international medical community. He has relentlessly represented the continent on the global stage through his works and regular interactions with the global medical community. He has been elected to many leadership roles in radiology and has broadly served the medical community at regional and international levels. He founded the African Society of Radiology and the African project within the World Federation for Ultrasound in Medicine and Biology (WFUMB). He promoted ultrasound training in Africa through the creation of 13 WFUMB training centers, 6 of which are based in Africa. Prof. Gharbi has received some of the most impressive awards that are bestowed to medical scientists and radiologists. Among these, he received the Beclere Medal—the highest award of the International Society of Radiology.

Main nomination

Prof. Gharbi is primarily known for his extensive and renowned work on the neglected tropical disease echinococcosis (hydatid disease), a parasitic infestation caused by tapeworms of the genus *Echinococcus* that can affect up to 10% of the population in some areas of the world, including Africa (World Health Organization WHO Factsheet www.who.int/mediacentre/factsheets/fs377/en). Humans become infected after ingestion of parasite eggs present in contaminated food and water, or through contact with animal hosts, such as sheep and dogs. Echinococcosis is a terrible calamity with more than one million people affected at any given time. According to the 2015 WHO Food-borne Disease Burden Epidemiology Reference Group (FERG), echinococcosis causes ~20,000 deaths and over 850,000 disability-adjusted life-years (DALYs) each year throughout the globe (WHO estimates of the global burden of foodborne diseases: foodborne disease burden, 2007-2015 http://apps.who.int/iris/bitstream/handle/10665/199350/9789241565165_eng.pdf). FERG has also estimated the annual costs of echinococcosis at about US $3 billion for treatment and losses to the livestock industry. The disease is a substantial burden on humankind. Many of the affected people experience life-threatening clinical syndromes. Echinococcosis is expensive and complicated to treat, requiring extensive surgery and drug therapy over prolonged periods. Despite treatment,
patients often face reduced quality of life with an average of 2.2% death rate and about 6.5% of cases relapse after surgery.

Prof. Gharbi played an important role in fighting this terrible parasitic disease through key and high-impact contributions to diagnosis, treatment and prevention. He pioneered diagnosis of hydatid cysts with the “Gharbi classification”—an ultrasonography method used in asymptomatic human population and domestic animals, such as sheep and dogs. The Gharbi classification is based on five stages representative of the evolution of the parasite in host body. It has been widely adopted in hyper-endemic areas of Africa and elsewhere for early pre-symptomatic diagnosis of hydatid disease. The 1981 article describing the procedure “HA Gharbi, W Hassine, MW Brauner, and K Dupuch, Ultrasound examination of the hydatid liver, Radiology, 139:459 PMID: 7220891” has been cited 860 times (GoogleScholar, May 12, 2018). According to the Portuguese author António Menezes da Silva, the classifications that followed the 1981 paper “were nothing but a modification of the classification proposed by Gharbi” (Human Echinococcosis: A Neglected Disease, Gastroenterology Research and Practice, 2010:583297 PMID: 20862393). In 2002, WHO published an updated classification but according to Menezes da Silva, the WHO and other classifications were “not universally accepted”. The Gharbi classification of hydatid disease stages has been widely adopted in Africa and elsewhere and has impacted the diagnosis of millions of people. In addition, routine screening of domestic animals, notably sheep and dogs, to identify parasitic tapeworms, has greatly contributed to the prevention of this costly disease through programs focused on deworming of dogs and sheep.

Prof. Gharbi contributed to the treatment of hydatid disease through the development of a novel low-cost low-burden echographic puncture technique. Gharbi, in close collaboration with Tunisian colleague Moncef Gargouri and others, described this method in two 1986 publications (N Ben Amor, M Gargouri, H Gharbi et al. PMID: 3566087 and 3538579). They coined their method puncture-aspiration-injection-reaspiration or PAIR, a name that has been widely adopted ever since the 1986 papers. A PubMed search with the terms “PAIR AND echinococcosis” revealed 134 matches (May 13, 2018), with citing articles from countries as diverse as Kenya, South Africa, Iran, Turkey, India and Australia. Treatment of cystic echinococcosis is expensive and complicated, typically requiring surgery and/or prolonged drug therapy. PAIR has emerged as a critical alternative therapy to surgery, particularly in rural areas or regions of the world where medical infrastructure and human resources are inadequate. Several studies concluded that PAIR is less prone to complications such as anaphylactic shock or death. Today thousands of patients around the world are treated by PAIR following the protocol developed by Gharbi and collaborators. PAIR is applied using hypertonic saline solution or alcohol, indicating that the procedure is efficient and safe and offers complete cure in selected patients with a short hospitalization. Gharbi’s impact on the treatment of this terrible disease is widely recognized (see below for list of major awards). The Gharbi classification of ultrasound images of the patient’s hydatid cysts is an essential complement to PAIR as it enables the development of a stage-specific approach to prognosis and treatment.

Prof. Gharbi contributed to surveillance, prevention and control of echinococcosis in Africa and elsewhere through his participation in several working groups under
the umbrella of WHO and the European Communities programs. Gharbi’s groups gathered and analyzed surveillance data fundamental for the evaluation of disease burden and success of control programs. Gharbi also contributed to enabling small-scale sheep vaccination trials with the *Echinococcus granulosus* recombinant antigen EG95. In addition, the group promoted deworming of dogs and culling of older sheep in order to reduce the incidence of human echinococcosis disease. Gharbi continues to participate in the WHO Informal Working Group on Echinococcosis (WHO-IWGE) to develop guidance on detection and clinical management of cystic echinococcosis through improved case detection and management. The group is also working to promote the collection and mapping of epidemiological data, and the therapeutic techniques and promoting the PAIR in rural and hyper-endemic areas.

Prof. Gharbi has been elected to many leadership roles in radiology and has broadly served the medical community at regional and international levels. He realized early on in his career the importance of medical associations and international cooperation in promoting the optimal use and dissemination of medical techniques and in training the future generation of practitioners. He relentlessly collaborated with WHO and other organizations and country level programs to benefit African radiology. He founded the Mediterranean and African Society of Ultrasound (MASU) in 1986, and served as its Founding President from 1986 to 1992. In 2007, he founded the African Society of Radiology (ASR) in collaboration with Professor Claude Manelfe, then President of the International Society of Radiology (ISR), and African colleagues, mainly Dr. Jane Labuscagne from South Africa. ASR was the first official body to group and represent African Radiologists within the International imaging societies. Gharbi served ASR as President elect, President and now as treasurer. MASU and ASR remain the main official bodies to represent African radiologists within the International community. These two organizations helped to bring together specialists from all over the continent, and to facilitate interactions with the global radiology community. Gharbi has also been a member of the board of The World Federation for Ultrasound in Medicine and Biology (WFUMB) since 1992, and served as President of this prestigious Federation from 2013 to 2015. At WFUMB, he represented the interests of African radiology in this organization by founding and establishing training centres (see below for details). Locally, in the early 1970s, he founded the Biophysics department in the University of Tunis and the Tunisian Center of Radiation Protection. He also founded the first department of Pediatric Radiology in North Africa, at Tunis Children’s Hospital (currently named Hospital Béchir Hamza).

Prof. Gharbi worked relentlessly to promote the interests of African radiology through fund raising and training workshops. Specifically, he worked within the World Federation for Ultrasound in Medicine and Biology (WFUMB) to develop ultrasound applications in medicine and biology. More than 20 years ago, he founded the African project within the WFUMB with Professor Harald Lutz, from Bayreuth, Germany (WFUMB President 1997-2000). The aim of the African Project was to promote ultrasound training and use in Africa. He also developed policy and strategy for the promotion of good use of ultrasound in other developing countries. He founded, as a member of the WFUMB Board, Centers of Excellence (COEs), named today Centers of Education. To date WFUMB has created 13 COEs, 6 of which are in Africa, and organized more than 50 courses. In Africa, COEs were established in Uganda, Kenya,
Togo, Nigeria, Sudan, and Ethiopia, with more being planned in Mauritania and Ivory Coast. COEs operate under the umbrellas of WFUMB, MASU and national ultrasound societies. COEs also cooperate with other institutions, such as the Norwegian University program and the International Society of Radiology in Ethiopia. Several thousand users, namely General Practitioners (GPs) or specialist doctors, midwives, radiographers, and sonographers have participated in COE courses throughout the world. In Africa, 1040 users were trained in Kampala, Uganda (2004 to 2017), 414 users in Lagos, Nigeria (2013 to 2017), 132 in Nairobi, Kenya (2014 to 2017). Beside these notable international activities, Gharbi has taught and trained the next generation of Tunisian doctors ever since his return to his homeland in 1970. He taught pediatric radiology in the Tunis Children’s Hospital and biophysics and radiation protection in the Tunis Medical School.

Prof. Gharbi has received some of the most impressive awards that are bestowed to medical scientists and radiologists. Among these, he received the Beclere Medal—the highest award of the International Society of Radiology (ISR)— during the International Congress of Radiology that was held in 2016 in Buenos Aires Argentina. He was elected as Honorary Member of The International Association of Hydatidology (IAH) the IAH General Assembly in Beijing China, in 2011. He was recognized as Honorary member of The Radiological Society of North America (RSNA) in 2017, The European Society of Radiology, (ESR) in 2016, The American Institute of Ultrasound in Medicine (AIUM) in 2003, The Society of Pediatric Radiology (SPR) in 2008, The American College of Radiology (ACR), in 2010, French Society of Radiology in 1997, The Korean Society for Ultrasound in Medicine, (KSUM) in 2013, The Italian Society of Radiology and Nuclear Medicine in 1988, The Egyptian Society of Radiology and Nuclear Medicine in 1990, The Italian Society of Ultrasound in 1991. He was also elected Honorary President of The Tunisian Society of Radiology from 2003 to 2012, and The Tunisian Society of Ultrasound and Doppler since 2010.

In conclusion, Professor Hassen Akéba Gharbi, born and living in Tunisia, is highly qualified and most deserving of recognition. His lifelong dedication to African and Arab medicine is worthy of praise and recognition. His wide-ranging contributions to fighting hydatid disease in Africa and elsewhere fulfill the aspirations of the Millennium Development Goals. In addition, this award would further help to raise the profile of Arab and African scientists in the medical imaging field and contribute towards the eradication of the terrible hydatid disease in Africa and elsewhere. Beyond the hydatid disease problem, this award would help to promote the good use of ultrasound in Africa, and help the continent address some of the major health problems it faces in the 21st century. Currently, two thirds of world’s population don’t have access to medical imaging. Gharbi’s objective is to continue to bring sustainable ultrasound programs to under-served areas of the world, mainly in his African homeland, through collaboration, communication, and education.
Curriculum vitae: Hassen A. Gharbi

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Citizen: Tunisian

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Phone office: +216 71900677 – Fax: +216 71900908
Mobile: +216 20360990
Email: hassen.agharbi@planet.tn

Education

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Appointments

1989-present Retired-Manager Private Ibn Zohr Radiology Centre, Tunis Tunisia
1970-1989 Professor of radiology and medical Biophysics-Medical school of Tunis, Tunisia
1970-1989 Head of the department of radiology at Tunis Children’s Hospital
1970-1985 Head of the medical Biophysics department at Tunis Medical School
1971-1973 Vice Dean of Tunis Medical School
1971-1989 Founder and Director of the National Centre of Radiation Protection–Ministry of Public Health-Tunis
1970-1989 Head of the Paediatric Radiology Department-Children’s Hospital-Tunis (the first in North Africa)
1966-1970 Assistant professor at the biophysics department of Paris Medical School.

Other duties

1986-present Judicial Sworn Expert in Radiation Protection - Ministry of Justice; Tunis
1975-1985 President of Radiological National Commission in the Ministry of Public Health-Tunis
1972-1989 Advisor to the Ministry of Public Health for Radiology, Paediatric Radiology, Biomedical Engineering, Radiation Protection, Medical School training, Hospital equipment planning
1990-2016 Member of Expert Advisory Panel on Radiation, World Health Organization (WHO), Geneva.

Teaching

2004-present Ultrasound courses (COEs) in several African countries
1970-1989 Medical Biophysics, Paediatric radiology
1975-1985 Training in radiation protection
1966-1970 Biophysics
Special achievements
- Creation of the Mediterranean and African Society of Ultrasound (MASU), 1986
- Creation of the Tunisian National Centre of Radiation Protection, 1971
- Creation of the African Society of Radiology (ASR), 2007
- Imaging of hydatid diseases and study of their epidemiology and treatment, since 1981
- Elaboration of ultrasound classification of the hydatid cyst appearance, published in Radiology, still used around the world. 1981
- Creation of STED, Société Tunisienne d’Échographie et de Doppler (Tunisian Society of Ultrasound and Doppler) for the promotion of Ultrasound use in medicine, 1999.

Awards and Recognitions
2016  Beclere Medal; International Society of Radiology-International Congress of Radiology (ISR), Buenos Aires, Argentina.
2011  Honorary Member Award; International Association of Hydatidology (IAH), Beijing, China.
2017  Honorary RSNA Member; Radiological Society of North America; Chicago, USA.
2016  Honorary Member; European Society of Radiology (ESR), European Congress of Radiology. Vienna, Austria.
2003  Honorary Member; American Institute of Ultrasound in Medicine (AIUM), Montreal, Canada.
2008  Honorary member; Society of Paediatric Radiology, (SPR). Scottsdale, Arizona, USA.
2010  Honorary Fellow; American College of Radiology (ACR); Washington DC, USA.
1997  Honorary member; French Society of Radiology, Société Française de Radiologie (SFR); Paris, France.
2013  Honorary Member; Korean Society for Ultrasound in Medicine (KSUM); Seoul, South Korea.
1988  Honorary Member; Italian Society of Radiology and Nuclear Medicine (SIRM) Rome, Italy.
1990  Honorary Member; Egyptian Society of Radiology and Nuclear Medicine (ESRNM). Cairo, Egypt.
1991  Honorary Member; Italian Society of Ultrasound in Medicine and Biology (SIUMB). Milano, Italy.
2003-12 Honorary President; Tunisian Society of Radiology (STR)
2018  Honorary Member; Romanian Society of Ultrasound in Medicine and Biology (SRUMB); Brasov, Romania.

Invited presentations
Invited speaker in more than 40 international meetings in different fields:
- Tropical disease mainly hydatid diseases
- Ultrasound, mainly in paediatric age: osteo-articular, digestive tract, etc.
- Radiation Protection
- Imaging modalities in developing countries
- Paediatric Radiology

Main recent important invitations
2018  Ivory Coast Society of Ultrasound, (SIVUS) WFUMB courses in Abidjan Ivory Coast.
2018  Romanian Society of Ultrasonography in Medicine and Biology, (SRUMB), WFUMB COE Course Brasov, Romania.
2017  16th World Congress of the World Federation for Ultrasound in Medicine and Biology, WFUMB; Taipei, Taiwan.
2017  103rd Radiological Society of North America, RSNA meeting, Committee on International Radiology Education (CIRE); Chicago, USA.
2017  12th International Society for Strategic Studies in Radiology (ISSSR) meeting; Washington DC, USA.
2017  29th Congress of the European Federation for Ultrasound in Medicine and Biology (EFSUMB); Ljubljana, Slovenia.
2016  29th International Congress of Radiology (ICR); Buenos Aires, Argentina.
2015  11th International Society for Strategic Studies in Radiology (ISSSR) meeting; Amsterdam, Netherlands.
2013  10th International Society for Strategic Studies in Radiology (ISSSR) meeting; Beijing, China.
2013  Korean Society of Ultrasound in Medicine (KSUM); Seoul, South Korea.
2011  Italian Association of Gastroenterology, Associazione Italiana Gastroenterologi Ospedalieri (AIGO); Turin, Italy.
2011  13th World Congress of the World Federation for Ultrasound in Medicine and Biology, WFUMB; Vienna, Austria.
2010  26th International Congress of Radiology (ICR); Shanghai, China.
2009  12th World Congress of the World Federation for Ultrasound in Medicine and Biology, WFUMB, Sydney, Australia.
2008  25th International Congress of Radiology (ICR); Marrakech, Morocco.
2008  Mediterranean Association of Paediatric Surgery; Tunis, Tunisia.
Edited books

(List of the books published by Hassen A. Gharbi as author or co-author)


ISBN 92 4 154461 9 English
ISBN 92 4 254461 2 French


6- Puncture Aspiration Injection Re-aspiration. 2001. PAIR, an option for the treatment of cystic Echinococcosis
WHO informal Working group on Echinococcosis, 40 pages. English. WHO publication Ref WHO/CDS/CSR/APH/2001.6


Atti del, Corso Editor. Spotorno- Italie; 1990


Editioni Libreria cortina Verona-1985-Italian.


Main publications


17- Gharbi, H.A., Vicel, J.C., Mitime, S., Sanchou, H., Charni, H., Ghezaiel, M.J., Boussen, M. 1987. Il y a un an... Chernobyl. [it was 1 year ago...Chernobyl]. Tunis Med. Feb;65(2):77-85. French


Dr H.A. GHARBI
Selected Medals and Awards

Beclere Award 2016

Beclere Medal 2016

ESR Honorary Member 2013

ESR Honorary Membership Diploma 2013

IAH Honorary Member 2011

IAH Certificate of Merit 2011
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Dr H.A. Gharbi
Media and News Coverage of Awards


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Date: 11th May 2018

Professor Hassan Gharbi

Dear Hassan

RE: STRIDES IN HYDATID DISEASE CONTROL AND TREATMENT IN KENYA

I hope you are proceeding well in your duties. Last year, I was in Vienna Austria, at the Distinguish Service and Gold Medalists awards during European Congress of Radiology when you were honoured.

May I add my great appreciation to you for your tremendous achievement in studies of Echinococcosis and image guided therapies.

Since you introduced the subject in Kampala in 2003 and later in Nairobi in 2005, I have treated over fifty patients. Six of them required chest tubes insertion. More than thirty hepatic diseases. Most of this were in active phase. Three patients who had disseminated peritoneal hydatidosis remained problematic.

I wish to recommend your world famous classification. You are a first. PAIRS is very practical and its treatment has good outcomes.

I want to wish you well in your scholarly contribution to Medical Science. Let us meet at next years Africa Society of Radiologists Congress in Cairo.

Thank you.

Your younger colleague

Dr. Henry Wanga

Consultant Interventional Radiologist

Past Chairman, Kenya Association of Radiologists

Member CIRSE