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 hydatic 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: 20862339*). 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 21th 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

[June 2018]

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Education

Medical School, Paris, France	Medicine	Doctor	1967
Medical School, Paris, France	Medical Electronics Certificate	Graduate	1968
Medical School, Paris, France	Radiology	Radiologist	1969
Medical School, Paris, France	Medical Biophysics	Professor	1970
Medical School Paris, France	Medical Aeronautic Diploma	Graduate	1967
Orsay Faculty of Science, Paris, France	Optic physiology	PhD	1968
Oak Ridge As. Universities Tennessee, USA	Management Radiation Accidents		1986

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 103th 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, Netherland.
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)***

1- Kawooya, M.G., Hammou, A., **Gharbi H. A.**, Lau, L. 2013. Leadership and Innovations to Improve Quality Imaging and Radiation Safety in Africa; pages 339-360.
in Radiological Safety and Quality-Paradigms in Leadership and Quality.
Ed. Lawrence Lau, Kwan Hoong Ng – Springer; 471 pages. English

2- Bellagha, I., Ben Chehida, F., Couture, A., **Gharbi, H.A.**, Hammou, A., Douira Khomsi, W., Louati, H., and Veyrac, C. 2013. WHO Paediatric ultrasound. Manual of Diagnostic Ultrasound; Vol. 2, Second Ed., Chapter 5; pages 227-406.

3- Lutz, H. and **Gharbi, H.A.** 2006. Manual of Diagnostic Ultrasound in Infectious Tropical Diseases; 180 pages; Springer. English.
WHO Publications in collaboration with World Federation for Ultrasound in Medicine and Biology (English, French, Spanish, more than 15 languages Genève 1995-96)
ISBN 92 4 154461 9 English
ISBN 92 4 254461 2 French

4- **Gharbi, H.A.** 2005. Le kyste hydatique et l'échographie : de la description, au dépistage, jusqu'au traitement, 35 années de passion. (The hydatid cyst: ultrasound from the findings, screening, to the treatment, 35 years of passion). Centre de Publication Universitaire Tunis. French.

5-**Gharbi, H.A.**, Ben Chehida, F., Bellagha, I., Hammou, A. 2001. Abdomen: rare diseases, chap 60 pages 609-620
In Abdominal Ultrasound Atlas. Editors Buscarini, L., Campani, R.:
Idelson-Gnocchi Publishers – Naples; Italy; 671pages- English

6- P uncture 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

7- Training in diagnostic ultrasound: Essentials, principals and standards. Report of a WHO Study. 1998.
Prepared in Philadelphia, USA, March 1996. Workshop, Chairman Barry Goldberg.
Formation à l'échographie diagnostique : Éléments, principes et normes.
Rapport d'un groupe d'étude de l'OMS, 51 pages, English and French
Group WHO Technical Report Series N° 875 – Geneva 1998

8- **Gharbi, H.A.**, Hammou, A., Cerri, G.G.1997. Diagnostic and Therapeutic Role of Ultrasound in Tropical Medicine, vol 24, pp 149-181
in Current trends in Digestive Ultrasonography. Editors Gandolfi, L., Fukuda, M.
Publisher Basel; Karger, 1997, 394 pages. English, 1997.

9- Palmer, P.E.S., Breyer, B., Bruguera, C.**, Gharbi, H.A.**, Goldberg, B.B. and al. 1995. Manual of Diagnostic Ultrasound. Vol. 1, 334 pages. Edited by Palmer, P.E.S.
Published by the World Health Organization in collaboration with the World Federation for Ultrasound in Medicine and Radiology.

10- Bohrer, S.P., Bruguerra C., Chen, X.R., Elmeligi, M.R., **Gharbi, H.A.**, Lagundoye, S.B., Wachira, M.W. 1995. Tropical Diseases. Chapter 27; Pages 1237 -1308
in The Nicer Centennial Global Book. A Global Text Book of Radiology. 1995.
Ed. Petterson. H. 2 Vol.; 1330 pages : English in 1995; Spanish and Chinese; 1996
Nicer Institute. Oslo, Norway.

11- **Gharbi, H.A.**, Ben Chehida, F., Bardi, I., Hammou, A., Slim, R., Gargouri, M., Ben Amor N., Cerri, D.G., Ibanez, O., Agostini, S., Devred, P., Gonnon, D. 1993. Echinococoses-Leishmanioses, Chapter 2; pages115-130

in Jouve. P., Manuel d'Ultrasonologie générale de l'adulte (Manual of General Ultrasonology), 383 pages; French. Ed. Masson. 1993

12- Kurjak, A., Fuckar, Z., **Gharbi, H.A.** 1990. Atlas of abdominal and small parts sonography; 376 pages. French-English-Yugoslavian
Ed. Naprijed - Zagreb. 1990.

13- **Gharbi, H.A.**, Gargouri, M., Ben Amor, N., Ben Chehida, F., Hammou-Jeddi, A., Bardi, I., Ben Cheikh, M. 1990. What is new in hydatid disease. (Quoi de neuf dans la maladie Hydatique); pages 67-79
in De Albertis P., Ferro, C. Radiologia e Neuroradiologia Interventistica; 237 pages; French; Italian; English.
Atti del, Corso Editor. Spotorno- Italie; 1990

14- Ben Cheida, F., **Gharbi, H.A.**, Ben Cheikh, M.; Brunetti, E.; Filice, C. 1989. Imaging dell'idatidosi. Pages 155-168.
in Filice, C., Rondanelli, E.G. L'echographia nelle Malattie Infettive, Italian (Ultrasonography in Infectious diseases) 488 pages. Italian.
Ed. Medico Scientifiche, Pavia, 1989.

15- L'imagerie en pratique clinique pour un choix rationnel des techniques de diagnostic (Rational use of imaging techniques in practical situations). 1988.
Rapport d'un groupe scientifique de l'OMS : Technical Report Series 795 - 143 pages; English and French.
World Health Organization, Geneva; 1988.

16- **Gharbi, H.A.**, Marbot, P., Ben Cheikh, M. 1988. Splenic Involvement in Parasitosis; pages 70–84.
in Bruneton, N., Benozio, M., Bléry, M., Gharbi, H.A., Senecail, B., Tran Minh, V. 1988. Ultrasonography of the spleen; 89 pages. Ed. Springer Verlag. English.

17- Utilisation rationnelle de l'imagerie diagnostique en pédiatrie. 1987. (Rational use of diagnostic imaging in paediatric). Technical report series 757- English and French 111 pages.
World Health Organization, Geneva 1987.

18- **Gharbi H.A.**, Mechmeche, R., Ben Cheikh, M., Bousnina, A., Ben Ismail, M. 1986. L'echinococcosi cardiac; pages 758-772.
in Heart imaging diagnosis Imaging diagnostico del Cuore.
Eds. Pistolesi, G., Thiene G.F., Casolo, F. - 2 tomes -789 pages.
Editioni Libreria cortina Verona-1985-Italian.

19- Burger, G., Borel, P., Couture, A., Cristofari, J., Devred, P., Ferran, J.L., **Gharbi, H.A.**, Hassine, W., Le Dosseur, P., Perlmutter-Cremer, N., Rouault, F., Sansot, M., Spehl, M., Veyrac, C. 1982.
in Jouve. P. Échographie en Pédiatrie (Ultrasonography in Pediatric).
Ed. Masson, Paris: 1982; French; 96 pages.

20- **Gharbi, H.A.,** Dutreix, J. 1971. Distribution de la dose obtenue par l'association de faisceaux d'électrons et de photons.
In Physical aspects of Radiation Quality, book. IAEA SM. 145 / 40; p. 461, 480. 1971. Vienna Proceedings of a symposium Lucas Heights 8-12 March.

Main publications

1- Destigter, K., **Gharbi, H.A.** and al. 2017. Equipment in the Global Radiology Environment: Why We Fail, How We Could Succeed. Radiological Society of North America, International Radiology Education Committee, CIRE Committee report, November 2017, will be published in Radiology in 2018.

2- Dimassi, K, Chelli, D, Khomsi-Douira, W., **Gharbi, H.A.** 2015. Échographie Fœtale: Quoi de Neuf en 2015 (In French) Échographie fœtale en Tunisie, exemple de pays émergents: passé, présent, avenir. Ultrasound in medicine and biology. Avril 2015, volume 4, Issue 4 Supplement, pages 56-57.

3- Hricak, H.,Herold, C.J., Krestin, G.P. (**Gharbi, H.A.** in the full list in the document). 2013. A statement about authorship from individual members of the international Society for Strategic Studies in Radiology (I3SR). Radiology; January 2013, volume 266, issue 1.

4- Lahmar, S., Ben Chehida, F., Pétavy, A.F., Hammou, A., Lahmar, J., Ghannay, A., **Gharbi H.A.**, Sarciron, M.E. 2007. Ultrasonographic screening for cystic echinococcosis in sheep in Tunisia. Vet. Parasito, Jan 19;143(1):42-9. 2007 Sep 14.

5- Kaissi, A.A, Bieganski, T., Baranska, D., Chehida, F.B., Gharbi, H.A., Ghachem, M.B., Hendaoui, L., Safi, H., Kozlowski, K. 2007. Robinow syndrome report of two cases and review of litterature Australas Radiol. 2007 Feb;51(1):83-6. Review.

6- Kaissi, A.A., Ben Chehida, F., Latos-Bielenska, A., Gharbi, H.A., Ben Ghachem, M., Hendaoui, L., Kozlowski, K. 2007. A novel form of ischio-vertebral syndrome. Skeletal Radiol. 2007 Jan; 36(1):77-81. Epub 2006 Mar 18.

7- Kaissi, A.A., Ben Chehida, F., Gharbi, H.A., Jinziri, M., Safi, H., Ben Ghachem, M., Grill, F., Varga, F., Klaushofer, K. 2006. Craniovertebral malformation complex in a child with Weismann-Netter Stuhl syndrome.
J. Pediatr (Rio J). 2006 May-Jun; 82(3):236-9.

8- Lahmar, S., Sarciron, M.E., Ben Chehida F., Hammou, A., **Gharbi, H.A.**, Gherardi, A., Lahmar, J., Ghannay, A., Pétavy, A.F. 2006. Cystic hydatic disease in sheep: treatment with percutaneous aspiration and injection with dipeptide methyl ester. Vet. Res. Commun. May; 30(4):379-91.

9- Kaissi, A.A., Ben Chehida, F., **Gharbi, H.A.**, Ghachem, M.B., Hendaoui, L., Hennekam, R.C. 2005. Familial vertebral segmentation defects, Sprengel anomaly, and omovertebral bone with variable expressivity. Am. J. Med. Genet A. Nov 1;138(4):374-8.

10- **Gharbi, H.A.**, Ben Chehida, F. 2000. Socio-economic Environments: Africa: Use of Ultrasound; Med. Biol.; Ed. Elsevier, May, 26; Suppl 1:S150-3.

11- Ben Chehida, F., **Gharbi, H.A.**, Hammou, A., Bellagha, I., Ben Amor, N., Gargouri, M. 1999. Ultrasound Findings in Hydatid Cyst. Ultrasound Quarterly; Vol 15, N°4 pp.216-222.

12- **Gharbi, H.A.**, Ben Chehida, F., Moussa, N., Bellagha, I., Ben Amor, N., Hammou, A., Gargouri, M., Slim, R. 1995. Hydatic cyst of the liver. Gastroenterolgie Clinique et biologique, 01 Jan 1995, 19(5 Pt 2):B110-8.

13- Gargouri, M., Ben Amor, N., Ben Chehida, F., Hammou, A., **Gharbi, H.A.**, Ben Cheikh, M., Kchouk, H., Ayachi, K., Golvan, J.Y. 1990. Percutaneous treatment of hydatid cysts (Echinococcus granulosus). Cardiovasc Intervent Radiol. Jun-Jul; 13(3):169-73.

14- Mtimet, S., **Gharbi, H.A.**, Abdelleli, K., Vicel, J.C., Ghezaiel, M.J., Mahjoubi-Charni, H., Aboudi, A. 1990. Radiation-Protection, infrastructure : La radioprotection en Tunisie État actuel et problèmes. I.A.E.A. - SM- 309-23, 163-170 – Vienne.

15- Chaouachi, B., Ben Salah, S., Lakhoua, R., Hammou, A., **Gharbi, H.A.**, Saied, H. 1989. Kystes hydatiques chez l'enfant. Aspects diagnostiques et thérapeutiques. A propos de 1195

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Dr H.A. GHARBI

Selected Medals and Awards

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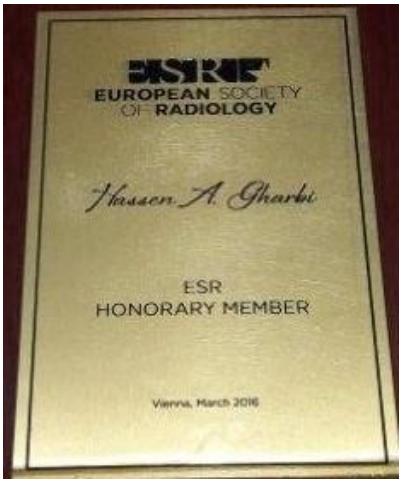
<td> 
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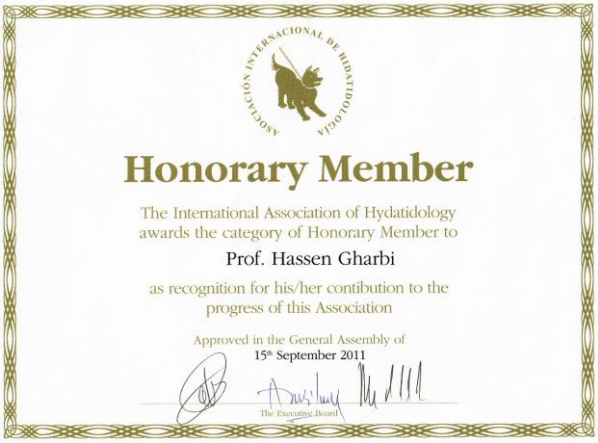
<td> 
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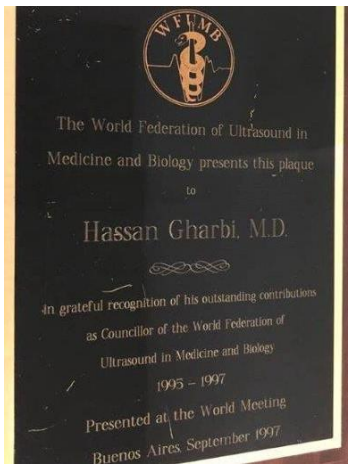
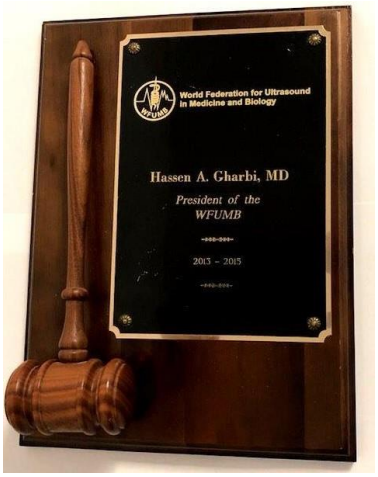
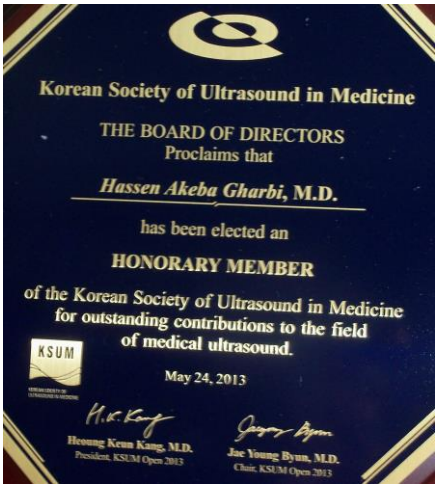


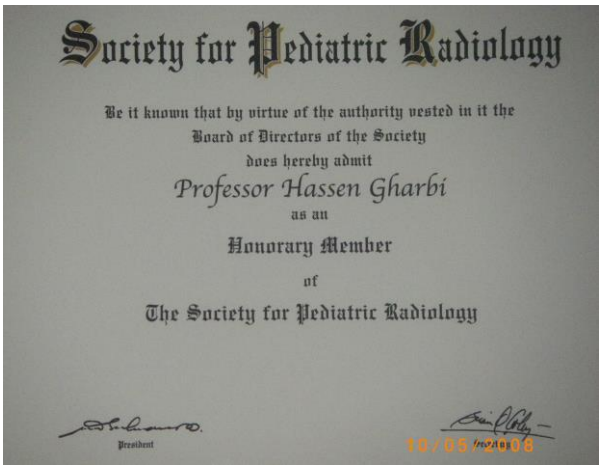
WFUMB Councilor 1995-1997



WFUMB President 2013-2015



KSUSM Honorary Member 2013



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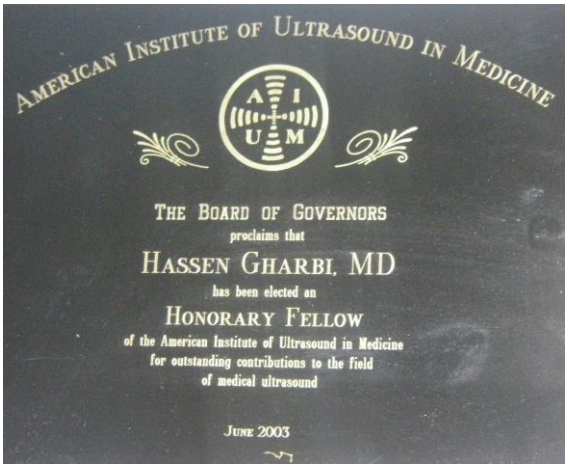
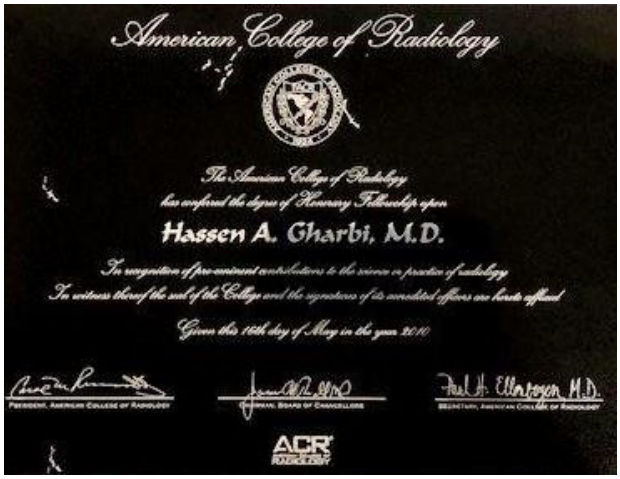


AIUM Honorary Fellow 2003



ACR Honorary Fellow 2010

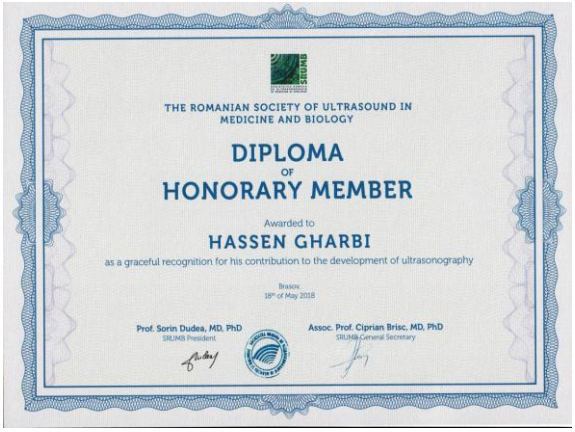
SFR Membre d'Honneur 1997

STR Medal of Recognition

STSM 100th Anniversary
Plate of Recognition 2002

Faculty of Medicine Tunis
Plate of Recognition 2005

RSNA Honorary Member 2017



RSUMB Honorary Member 2018

Dr H.A. Gharbi
Media and News Coverage of Awards

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VASCULAR AND INTERVENTIONAL RADIOLOGY CLINIC

Dr. Henry J.O. Wanga
MB.ChB.M.Med
[UON] AKUH - KARACHI (PAK)
Interventional Radiologist

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