



Education and Professional Training Medical Physics Challenges and Outlook in LMICs

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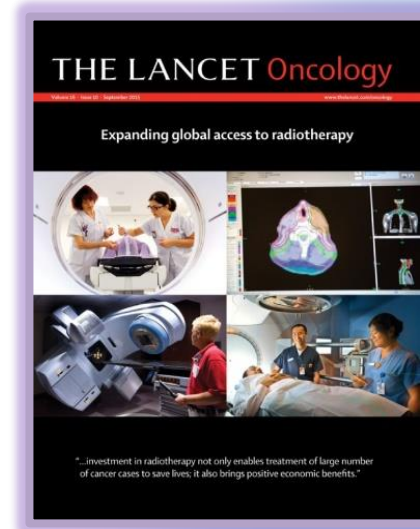
**ICEC Workshop on Design Characteristics of a Novel Linear Accelerator for
Challenging Environments: “Improving global access to radiation therapy”
CERN, Nov 7-8, 2016**

Common Interests

- ***Chair, International Educational Activities Committee - and member of BoD - AAPM***
- ***Several AAPM committees: Education Council, African Affairs, Latin American Affairs***
- ***VP and co-founder of MPWB***
- ***Chair, Professional Relations Committee – IOMP***

Medical Physics needed to address Global Cancer

- **By 2035: Additional 22,000 Medical Physicists for LMIC**
- **By 2025: Train 6,000 MPs for LMIC.**
 - This is more than 600/year for the next ten years alone!
- **IOMP membership - about 22,000**
 - Many in High Income Countries (about 10,000 in the US and Canada alone)



Great Challenges in LMIC's

- **Very limited availability of established educational and practical training programs.**
- **Dearth of local, experienced, professionals with unencumbered time for teaching.**
- **Concern about “brain drain” if individuals are sent abroad for training**
- **Great need for equipment to train on, and to train with.**
- **Training time is by and large not ‘compressible’**

Q: How to develop sustainable training?

A: Combine

- **Support individual clinics/universities to develop regional education and training centers with enough capacity and equipment to serve regional demands, i.e. development of local “centers of excellence”.**
- **Focus on developing local cadre of professionals.**
- **Promote the proper recognition and compensation from institutions and governmental authorities to enhance the retention of new professionals.**

**Great need for outside support
to be deployed locally.**

**Is there enough support to develop
Medical Physics in LMICs?**

- **Teaching resources**
 - Regional Courses
 - Training fellowships
- **Regional and National projects**
 - Multiyear budgeted
 - Requested by National Authorities
 - Equipment
 - Expert missions/ scientific visits
- **Dosimetry and program audits (TLD, QUATRO)**
- **Surveys and data**
 - Equipment (DIRAC)
 - Safety (SAFRON, SAFety in Radiation ONcology)
 - Accidents
- **International Standards, Guidelines and Protocols**
- **International and national radiation policies**



IAEA

International Atomic Energy Agency

- **Teaching resources (*)**
 - Regional Courses, conferences and symposia
 - Online library
 - Summer schools
- **Regional and National Courses**
 - Single year budgeted
 - Requested by AAPM committees
 - Members participate in IAEA expert missions and courses with IAEA, IOMP, ICTP, ASTRO, ESTRO, etc.
- **Collaborations with international and regional organizations**
- **Surveys and data,**
 - Equipment
 - Safety
 - Accidents
- **Protocols for procedures and techniques**
- **National policies and practice guidelines**
- **Professional standards**



(*) “The AAPM’s Resources for Medical Physics Education Wherever You Are”; Y Pipman, C Bloch; MEDICAL PHYSICS INTERNATIONAL Journal, vol.3, No.1, 2015



- **Support of**
 - International conferences
 - Regional conferences and courses
- **Support, and creation, of national and regional MP organizations**
- **Representation at the international level and in scientific bodies**
- **Policies, definitions and recommendations**
- **Dissemination of information**
- **Guidelines**
- **Surveys and data**
 - Equipment
 - Staffing
- **Promotion of the profession – regionally and internationally**

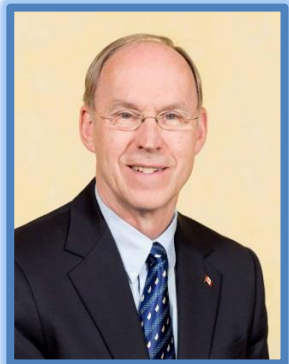
Need for more...

- **Support for individual clinics / universities**
- **Grassroots activities**
- **Individualized education/training/mentoring**
- **Extended time horizon for support**
- **Prompt assistance and consultation**
- **Development of longer term relationships**

Background

- **MPWB concept percolating for several years**
- **Steering Committee formed in December 2014**
- **Board of Directors formed in July 2015**

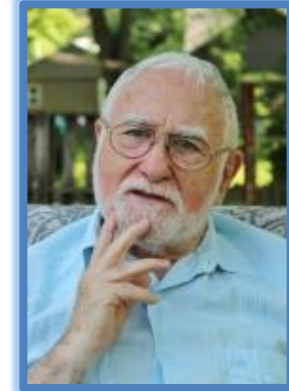
MPWB Board of Directors



Jake Van Dyk
- President



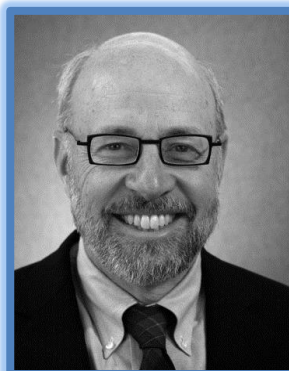
David Wilkins
- Secretary/
Treasurer



Yakov Pipman
- Vice-President



Parminder Basran
- Director of
Communications



Jerry White
- Chairman of the
Board



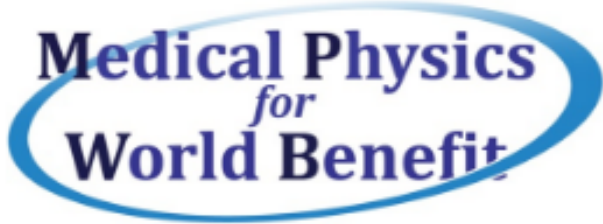
Robert Jeraj
- Director of Fund
Raising



MPWB Mission

- **To support activities**
 - **Effective and safe use of physics and technologies**
 - **Advising, training, demonstrating and mentoring**
 - **Especially in low-to-middle income countries**





www.MPWb.org

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Our Vision

A world with access to effective and safe applications of physics and technology in medicine.

Our Mission

To support activities which will yield effective and safe use of physics and technologies in medicine through advising, training, demonstrating and/or participating in medical physics-related activities, especially in low-to-middle income countries.

Join Us

Medical Physics for World Benefit is an entirely volunteer-run organization. If you are interested in learning more about MPWB, consider joining our mailing list.

We will start our membership drive likely in May 2016. Please stay tuned for more details.

Facebook and Twitter pages are now live!



How we can help
Learn more about how MPWB can help your organization.

Upcoming events

No upcoming events

Blog posts

- 06 Nov 2016 11:30 AM
New Video Message for IDMP 2016!
Anonymous
31 Oct 2016 12:30 PM
Medical Physics for World Benefit
Anonymous

What have we done so far?

- **Incorporated in Canada and in the US**
- **Tax Exempt status pending**
- **Linkages:**
 - **Physicien Médical Sans Frontières**
 - **MoU with AAPM**
 - **IOMP - Affiliated International Organization in process**
 - **ICEC – JVD and YP on Advisory Board**
 - **IAEA – informally in various projects**
- **Developed a Membership and database process**
 - **Information about members' expertise, availability and languages**

Ongoing Projects

- **Collaboration with University of Toronto to assist a Masters Program in Ethiopia**
- **Pilot program to assist the Medical Physics M.Sc. Program in Bulabayo, Zimbabwe.**
- **Working on fundraising and resources to support projects**
- **Ongoing communications with requests received by MPWB website**

Major upcoming efforts

- **Membership drive**
- **Fundraising**
- **Develop new projects**
- **Develop further partnerships**

- **MPWB focus on partnering at the grassroots level, with individuals, institutions and organizations, to develop capacity of Medical Physicists in LMIC's**

- **Sending individuals to participate in graduate training programs**
- **Participate in developing “on-the-job” residency training programs**
- **Partner with individual clinics in support of existing staff while commissioning and advancing new technologies and techniques.**
- **Development of new and improved quality assurance programs.**

Medical Physic for World Benefit (MPWB)-aims
Identify and help recruit professionals primarily from the English speaking world to contribute to programs in LMIC in an organized manner

Engage in Grassroots activities that address Individualized education/training/mentoring needs, to complement the effort of other, major, organizations

Advise and collaborate with other professionals on the Physics and Technology aspects of Cancer treatment.

Combine on-site visits with on-going electronic communication to guide the process.

Partner with individuals in local centers as well as with other organizations.

