Situation of professional development of the medical physicist in P.R.China

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## Present Status of Medical Physics in China

Numbers of MPs being involved in doing research, teaching and working on different areas relating to medicine.

<table>
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<tr>
<th>Areas</th>
<th>Subjects</th>
<th>Numbers</th>
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| Medical Universities and Colleges | ▪ Teaching Medical Physics to Medical Students  
▪ Medicinal-oriented Project Research | Over 1500 |
| Universities and Colleges | ▪ Project-based Research related to Medicine                               | Approx 400 |
| Hospitals and Clinics   | ▪ Working as an clinical Physicist in Radiology, Nuclear Medicine, and Radiation Oncology  
▪ Clinical-Oriented Project Research  
▪ Manufactural-Oriented Project Development | Over 1400  |

Total: Approx 3300

### Professional Body: Chinese Society of Medical Physics

- Founded in 1981
- Member of IOMP since 1986
- Publish Chinese Journal of Medical Physics since 1986
Example: Big Demands of Medical Physicists in Chinese Radiation Oncology Community

![Graph showing the increase in numbers of current RT centers, numbers of RT unit & MP demands, numbers of current MP, and deficit over years from 1985 to 2010.](image)
The big gap between the market demands and the available numbers of qualified medical physicists is due to the following reasons:

- Not enough number of graduate programs
- Current programs do not meet common standards
  - Lack qualified lecturers
  - Do not have a complete set of courses
  - Lack clinical practice opportunities
- For the existing MPs the professional competency for some is questionable because of poor educational background and training.
- Promotion is difficult for some MPs, as they can not pass examinations that belongs to other professions.
- No mp resident program
- Medical physics has not been recognized as a discipline equal to biomedical engineering
Solutions

- **Try to seek policy support and to get professional recognition of medical physicist from authorities.**

- **Demand-driven motivation**
  More universities/colleges are in interested in Medical Physics programs, as the students easily find satisfactory job

- **Efforts should be done to enhance education and training by setting up Medical Physics residency programs and more graduate programs in big centers, and for that a strict accreditation system needs to be set up.**
Accreditation(I)

- There is a Shang Gang examination system administered by the Public Health Ministry since 1996 and executed yearly by the academic societies affiliated with the Chinese Medical Association.

- This examination system is designed only for those people including physicians, medical physicists, technologists, medical engineers who are involved in using and operating LA (Linear Accelerator), CT/MRI, PET, etc.

- In Xiangshan meeting held in 2004 in Beijing, we intended to set up in China a profession system for medical physicist working in hospitals and clinical-oriented research institutes as a four-level system:
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Assistant Medical Physicist
Medical Physicist
Associate Professor of Medical Physicist
Professor of Medical Physicist
Accreditation (V)

- To qualify, one has to meet certain entrance academic requirements:
  - To have BS, MS, PhD degrees of physics or related science
  - To have a minimum period of time working in clinics and to get a minimum score by paper examinations before promotion to one of the four qualified professional levels of medical physicist.
Suggestions for MP Accreditation

We intend to set up in China a profession system for medical physicist working in hospitals as a four-level system:

- Assistant Medical Physicist (BS+ 4Year’s working)
- Medical Physicist (MS + 2 Year’s working, or Ph.D)
- Associate Professor of Medical Physicist (by paper exams)
- Professor of Medical Physicist (by paper examinations)
The DTT program sponsored by Varian is going on in Mainland China (81 students plus 12 tutors)
Thank you!