

Certification for Physicians in Biomedical Informatics

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I feel greatly honored to celebrate the newly established formal training program for biomedical informatics for young physician scientists, Certified Physicians in BioMedical Informatics (CPBMI), certified by the Korean Society of Medical Informatics (KOSMI). KOSMI has long been the center of action for biomedical and health informatics professionals since its inception, 26 years ago. The revolutions of biomedical informatics both in clinical informatics with clinical information systems and translational bioinformatics with high-throughput genomic technologies will eventually transform the current practice of medicine forever, including diagnostics, therapeutics, and prognostics. Now even more powerful than ever is the successful translation of the flood of clinical and genomic data into meaningful biomedical products for cancers, rare diseases, personal genome interpretations, and pharmaco- and toxico-genomic applications.

In March 2012, the board of directors of KOSMI has finally approved the foundation of the Committee of CPBMI in execution for the development and operation of a formal informatics training program for young physicians. The aim, scope, demand, stakeholder analysis result, provisional contents for the curriculum, potential career path of the trainees, financial plan, and long-range strategic plan were reported by the task force team after a year of efforts. What it means is that, in addition to the traditional track of graduate degree-seeking programs, a new clinical professional track is now in action for the education of biomedical informati-

cians.

The length of the CPBMI educational program is designed to be an 18-month coursework, which is roughly equivalent to the coursework requirement of a 'weak' master's degree-seeking program level. Physicians are required to complete formal classes for introductory biomedical informatics courses including basic computer programming skills, biostatistics, database technologies, data structure and algorithms, artificial intelligence in biomedicine, genomics and translational bioinformatics for two semesters for six hours a week. Python, SQL and R programming are chosen for the efficient and practical computer skills. Requirements for clinical systems rotation, research project presentation, paper presentation to KOSMI conference and journal, with the final certification exam for CPBMI were introduced.

Thirty-five physicians and one PhD student were enrolled as trainees from 26 institutions all over the country, encompassing a variety of clinical specialties; 5 internal medicine (i.e., nephrology, endocrinology, and infection), 4 family medicine, 6 pathology, 1 laboratory medicine, 3 surgery (i.e., orthopedic, thoracic, and neurosurgery), 1 obstetrics and gynecology, 1 pediatrics, 1 psychiatry, 2 neurology, 1 dermatology, 1 ophthalmology, 3 emergency medicine, 1 radiology, 1 radiation oncology, 1 clinical pharmacology, and 2 oriental medicine. One pre-specialty public health physician and one PhD student in Preventive Medicine participated in the coursework. After 18-month hard work, accreditation of certifying their competency, authority, and credibility will be awarded as the first group of certified physicians in biomedical informatics in early 2014. Grandfathering process of the CPBMI certification to a few faculty members from universities is scheduled in August 2013 before the first cer-

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tification exam in late 2013 and the grandfather biomedical informaticians will participate in the certification process for their first trainees. The certification process is commissioned to the Committee of CPBMI chaired by Dr. Ju Han Kim at Seoul National University and the development and operation of the CPBMI educational training program is commissioned to the Systems Biomedical Informatics National Core Research Center (SBI-NCRC) by the former president of KOSMI, Dr. Hune Cho.

American Medical Informatics Association approved core contents for clinical informatics subspecialty in 2008 and the American Board of Preventive Medicine among many American Boards of Medical Specialties (ABMSs) submitted the first formal application to ABMS to create the subspecialty certification, which was approved by the ABMS Board in a vote on September 21, 2011 [1,2]. American subspecialty of clinical informatics focuses more on clinical and applied aspects of informatics competencies [3] compared to our CPBMI, which emphasizes the balance between clinical and translational bioinformatics and between clinical practice and translational research. Given the limited number of institutions that can correctly provide educational and training programs for biomedical informatics, CPBMI decided to develop formal and shared educational classes to the trainees created by SBI-NCRC located in Seoul, Korea. It must have been very hard for those who have to travel long distances once a week from far institutions. I deeply appreciate the first trainees who enthusiastically overcame the geographic as well as educational difficulties very well so far.

Biomedical informatics is multi-disciplinary in nature. There is a growing need of informatics concepts and information technologies for physicians who understand the healthcare system, care process, biomedical research and industries. CPBMI will provide an immediately recognized credential for organizations seeking to hire physician informaticians. The future step to the establishment of certification process of CPBMI is clearly that of biomedical informat-

ics subspecialty in Korea, which should be accredited by the Korean Academy of Medical Sciences, which is the umbrella academic organization of KOSMI. Creation of the formal subspecialty will help to standardize key elements of biomedical informatics training programs and to increase the number of accredited training hospitals soon. It surely will accelerate the application of informatics technologies empowered by the rapidly increasing clinical and genomic data to current practice of medicine. It is my belief that CPBMI is one small step for biomedical informatics, one giant step for the practice of medicine. As Alan Kay has coined, "The best way to predict the future is to invent it."

Acknowledgments

The author would like to give special thanks to the committee members and the first 36 trainees of CPBMI and the training support by the Systems Biomedical Informatics Research Center supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education, Science and Technology (2012-0000994).

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