

## Postdoctoral Fellow - Dental Informatics

### THE INSTITUTION

Marshfield Clinic is one of the largest multi-specialty group practices in the country. The Clinic also has an impressive track record in applied Clinical Informatics. The internally-developed Electronic Health Record (EHR) is one of the oldest and most comprehensive in the country, containing coded diagnoses data back to 1960, with other coded data and digital documents back to the mid-1980s. Through the development of the Medical Event Coding by Clinicians Application (MECCA) system by Dr. John Melski, Marshfield has several decades experience in the use of coded terminology in an EHR. In addition, the EHR contains roughly 70 million text documents. Marshfield Clinic provides a unique environment for informatics research.

The Marshfield Clinic Research Foundation employs 175 researchers and staff. The Research Foundation is divided into five centers. The newest of these is the Biomedical Informatics Research Center (BIRC), which was founded in 2005. Currently the center employs about 38 scientists and staff. Research at the BIRC focuses on informatics applied to practical clinical and research problems. Current areas of focus include: Knowledge Management, Decision Support, Human Computer Interaction, Translational Informatics, Dental Informatics and Genome/Phenome studies.

Marshfield Clinic has an extensive collaborative relationship with University of Wisconsin Madison, which has designated Marshfield Clinic as an Academic Campus of UW School of Medicine and Public Health (UWSMPH). Many Marshfield Clinic researchers and clinicians hold appointments at UW. The Marshfield Clinic is also a partner with UWSMPH and four other UW Madison schools in the Institute for Clinical and Translational Research (ICTR), which was recently funded by the NIH Clinical and Translational Science Award (CTSA) program.

### THE CULTURE

The organizational culture is highly collaborative, emphasizing multidisciplinary approaches rather than silos. The institutional commitment to informatics is unparalleled. Marshfield Clinic is committed to involving informatics in the day-to-day operations and to using clinic operations as a living informatics laboratory. The Marshfield EHR was the first internal EHR to achieve CCHIT certification. Marshfield Clinic understands the value of informatics and realizes that the architecture of current EHRs must be radically transformed to meet the need of future healthcare. The institution is currently looking for people to guide that transformation. As a result, Marshfield Clinic provides a unique opportunity for people who are interested in guiding the development of cutting-edge systems. For example, BIRC researchers are actively involve in usability studies of new EHR components. The BIRC and Personalized Medicine Research Project (PMRP) were recently funded to study to use of EHR data in genotype/phenotype studies. Another example of the institutional commitment is the new Laird Center for Medical Research, containing over 8,000 sq. ft. of research space for BIRC and 5350 sq. ft. of new space becoming available in the spring 2011, to accommodate BIRC growth.

Marshfield Clinic is committed to genomic medicine, with the largest population-based genomic repository in the country, the Marshfield Personalized Medicine Research Project. Not only is this repository used to identify new genetic associations, Marshfield Clinic is also committed to translating these discoveries into improved treatments. For example, an AHRQ-funded clinical trial at Marshfield is evaluating genetic-based dosing for Coumadin. The Marshfield Epidemiologic Study Area (MESA) provides a unique laboratory for the Type II translational studies.

### THE POSITION

This Postdoctoral Fellowship in Dental Informatics will provide cutting edge training for a researcher who has a strong interest in solving biomedical problems requiring strengths in both computational and biological science. The Dental Informatics Fellow will be responsible for contributing to the mission of the Biomedical Informatics Research Center (BIRC), which is to accelerate improvements in human health and well being through informatics research. BIRC is a national leader in the new research discipline of using Dental Informatics to address the needs of dental clinical practice, research, and education. Under the leadership of Dr. Amit Acharya, BIRC's dental informatics research program has developed an integrated electronic medical and dental health record, has substantial external funding, and has initiated a major research program in oral and systemic health.

MCRF has many active projects where the Fellow will be able to contribute under Dr. Acharya's mentorship. MCRF also has a strong commitment to the professional development of its post-doctoral fellows, including assistance and encouragement in securing their own funding as Principal Investigators. MCRF is also one of the first academic medical centers in the country to expand its Personalized Health Care research program to the dental area.

The postdoctoral fellow is expected to: publish research results in leading peer-reviewed journals and books; collaborate and consult with other MCRF scientists, Marshfield clinic physician investigators, and Marshfield Clinic Family Health Center (FHC) dentists; and work closely with Marshfield Clinic Information Systems personnel. He or she will contribute to and gain expertise in the design, conduct, and analysis of a wide range of research. The Dental Informatics Fellow will participate in center, foundation, and national scientific duties, such as review publications and make presentations at professional conferences. In addition, the fellow will promote positive relationships with the communities and patients served by Marshfield Clinic FHC.

While specific research activities will be determined by the individual's interest, research in the following areas is most likely to reinforce Foundation's mission to discover and communicate scientific knowledge that substantially improves human health and well being:

- Human Computer Interaction in Dentistry and Medicine
- Translational Biomedical and Dental Informatics
- Design of Novel Clinical Research Systems
- Decision Support and Knowledge Management
- Clinical Ontology Development and Information Modeling
- Integrated Electronic Health Record Architecture
- Dental Informatics Standards Development
- Dental Health Information Exchange
- Natural Language Processing
- Patient Portals and Personal Health Records
- Integrating Medical and Dental Electronic Health Records
- Dental Virtual Data Warehouse Design and Implementation
- Informatics Infrastructure for Dental Practice Based Research Network
- Informatics Support for Oral-Systemic Research Project
- Informatics support for Personalized Health Care research, including the Personalized Medicine Research Project and the Wisconsin Genomics Initiative

## **THE ESSENTIAL DUTIES & RESPONSIBILITIES**

Design, conduct, analyze and interpret dental and biomedical informatics research in collaboration with senior BIRC scientists and research staff.

Participate in ongoing research projects.

Publish in peer-reviewed journals; present research results at national and international meetings.

Perform a significant role in the development and writing of proposals for extramural funding.

Promote informatics research within the MC system and represent MC and MCRF with outside institutions.

Participate actively in Center, Foundation, and national scientific duties, such as; peer review of publications and research proposals.

Stay current with relevant scientific literature, professional organization and communications with colleagues.

Regular attendance is an essential function of the position.

## **THE QUALIFICATIONS**

Education: PhD in Dental Informatics, Biomedical Informatics, Computer Science, Information Technology, Bioinformatics, Computational Biology, or a related field, or a DMD, DDS, MD with demonstrated strength in biomedical informatics. (Education qualifications must be from a school whose accreditation is recognized by Marshfield Clinic.)

**Experience:** At least two years research experience in at least one domain of biomedical informatics (including dissertation preparation). Demonstrated ability to plan and carry out research experiments and projects is required. Publication record of original research in peer-reviewed sources is expected. For candidates with a clinical informatics focus, experience in the implementation of actual production is a plus. Experience in multi-center research projects preferred. Experience in dental informatics will allow the Fellow to get a faster start in his or her research program at MCRF, but it is not essential.

**Exclusion from Federal Programs:** Employee may not at any time have been or be excluded from participation in any federally funded program, including Medicare and Medicaid. This is a condition of employment. Employee must immediately notify his/her manager or the Clinic's Compliance Officer if he/she is threatened with exclusion or becomes excluded from any federally funded program.

## **APPLICATION & ADDITIONAL INFORMATION**

To apply for this position (MC110187), please complete an online application is available at:

<http://www.marshfieldclinic.org/professionals/?page=employment>

For additional information on this position, please contact:

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More information about Marshfield Clinic's Biomedical Informatics Research Center is available at:

[www.marshfieldclinic.org/birc](http://www.marshfieldclinic.org/birc).