

Training Project Grants
Reporting Period July 1, 2014 - June 30, 2015

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Occupational Medicine Residency
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SECTION 1

TPG Summary:

The University of Pennsylvania (UPENN), Perelman School of Medicine, Occupational and Environmental Medicine Residency Program, funded by NIOSH since its inception in 1997, has graduated 112 residents to date. The purpose of this highly innovative, competency based, supervised practicum training program is to continue training physicians in Occupational and Environmental Medicine (OEM), who are both new to the field and making a mid-career shift to OEM. The program plans to graduate at 30 residents during this grant period, 10 directly funded by NIOSH, and in so doing increase the number of occupational medicine/preventive medicine physicians in the United States. The program helps address the national shortage of OEM physicians, the shortage of OEM physicians in underserved areas (as regards the presence of board certified OEM physicians) and the shortage of underrepresented minority OEM physicians. Successful applicants meet requirements of an ACGME-accredited clinical (PGY-1) year, have completed or substantially completed an MPH or equivalent degree.

There are two tracks: External and Internal. External Track residents practice and receive their supervised clinical training in on-site salaried work in the community, at approved clinical training sites (CTS). They are in full-time OEM practice. The site may be a free standing clinic, or a university, corporate, military, or governmental setting, where suitably qualified, board certified preventive medicine physicians, whose credentials are reviewed as a part of the residents' application process, serve as CTS supervisors. Candidates for the Internal Track have their primary training site at the University of Pennsylvania Hospital and the Veteran's Administration Hospital. Core program faculty supervise Internal Track residents' clinical work. All site supervisors are diplomates of the ABPM. Each resident completes at least 4 months of clinical occupational medicine each year as per ACGME requirements. Core UPENN residency faculty visit each External Track resident CTS quarterly during the OM-1 year and 3 times during the OM-2 year, in order to observe the resident. They also meet with the resident and the resident's CTS supervisor together, in order to ensure educational quality and that each resident continues to achieve the training objectives, and that supervision and training requirements are met. The residency program is competency based where the outcome measures focus on the achievement of specific measurable competencies rather than mainly on the amount of time spent on the desired skill, in keeping with the ACGME Milestones program.

Trainees attend didactic and experiential training sessions and also complete graduate level courses in relevant subjects, at UPENN in Pennsylvania in Philadelphia over the two-year period. There are five 2-month subject-area rotations (SAR) addressing specific competencies,

which run concurrently with clinical training rotations (CTR), which residents are expected to complete during the first year. The subject-area rotations are: The workplace, hazard recognition, evaluation and control; environmental health, risk assessment and risk communication; organizational and health care management; population-based occupational medicine; and the worker, disability and work fitness. These SARs are conducted at UPENN where residents attend monthly 3-day intensive didactic training sessions. During the second year the OM-2 residents complete 5 subject area rotations: Advanced and Emerging Topics in Organizational Management and Healthcare; Career and Personal Development / Negotiation / Travel Medicine; Industrial Hygiene II & Environmental Health; Emergency Preparedness & Hyperbaric Medicine; and Leadership, Resiliency Training, and Team Building. All SAR directors are national experts in the area covered by the rotation for which they are responsible. Trainees complete a number of projects in defined areas using the populations and workplaces that they serve. In lieu of a sixth UPENN-based SAR during the OM-2 year, the residents attend the annual AOHC each spring, where they partake of pre-selected courses, present their scholarly work for which they had been preparing each year, and meet as a group to discuss learnings at the conference.

Graduate level courses include the Research Methods Course and Second Year Project, which started in 2012 and has evolved based on resident feedback and outcomes. This course continues to provide a practical hands on method of mentoring the residents - bringing their scholarly work to fruition. The Clinical Occupational Medicine Course has also evolved and has been mapped to the ACGME competencies, the ACOEM competencies, and the program competencies to ensure that the program covers the relevant OEM and clinical competencies. Topics not covered within this course are covered elsewhere in the curriculum to ensure that the residents receive a well-rounded, competency based OEM education. The Clinical Occupational Medicine Course ties together the relevant clinical topics. We continue to teach the Critical Review of the Literature and Occupational Epidemiology courses. Experiential learning continues to be a feature of our curriculum including tabletop exercises and using mock standardized patients to teach toxicology concepts.

Relevance: The UPENN Occupational and Environmental Medicine Training Program continues to be innovative. We continue to be the only residency program designed for mid-career physicians with a train-in-place program. Most of our graduates (over 95%) have remained in the OEM field, many located in non-urban areas. Our program meets a national need – quality training and lifelong mentorship via faculty, fellow residents and the network of program graduates – to teach and facilitate our residents and graduates to protect and improve the health of workers, families and communities through the promotion of healthy lifestyles, disease and injury prevention and detection and control of infectious diseases, while helping eliminate health disparities.

TPG web link: <http://www.med.upenn.edu/oem/residency>

SECTION II

Program highlights of high impact: There were 12 residents during the reporting period (July 1, 2014-June 30, 2015). A few notable highlights are below:

NIOSH supported resident Dr. Michele Kowalski-McGraw collaborated with Sudha Pandalai, MD, PhD, and Paul Schultz, PhD, at NIOSH as well as with program director, Dr. Judith McKenzie, on a project entitled Conceptual Models to Evaluate Opioid and Benzodiazepine Medication Use in the Workplace as a part of the “The Risk Factor Compendium Research Project”, designed to provide resident/trainees support in exploring occupational safety and health issues in conjunction with the staff at in the Education and Information Division (EID) at NIOSH. The resulting will be submitted for publication.

Our Research Methods and Second Year Project Course, which has been taught since 2012, has been successful once again in that all OM-2 residents were mentored and well prepared for scholarly work. All submitted abstracts were accepted to AOHC 2015. Dr. Vearrier earned his second Resident Research Award for his work during the May 2015 AOHC in Baltimore, Maryland. (He received the first one during his OM-1 year). Dr. Vearrier also received the inaugural 2015 AOHC Occupational Physician Scholarship Fund Award. Other abstracts accepted for poster presentation at AOHC are as follows: Dr. Isakari-*Lean Methodology to Streamline California’s Workers’ Compensation Documentation*; Dr. Saito-*Perception of Privacy of Electronic Medical Records*; Dr. Savanoor-*Occupational Medicine: How and Why Practitioners Enter the field*; Dr. Doria-*Free Online nutrition program and activity tracker will help employees maintain healthy habits*.

The program accepted six new residents in July 2014. Each of the 6 first year residents completed five substantial projects in each of the OM-1 subject area rotations resulting in a total of 30 projects completed. One of these projects by Dr. Saito, presented as a webinar at HRSA’s monthly webinar series during his OM-1 entitled *Military Exposures at Camp LeJeune* year, was presented as a poster presentation to the Western Occupational Health Conference this year. Other resident highlights include Dr. Savanoor’s role in the ProMedica EBOLA preparedness steering committee. She was featured on local news in Toledo, OH ([WTOL](#)). She gave expert advice to the Health System in regards to PPE, drills, community communication, employee communication and education. Dr. Doria was involved with Ebola screening at airports and helped create an "Ebola" kit for US employees who periodically worked in Niger, Africa. Dr. Vearrier delivered an invited presentation at the VI International Seminar of Occupational Health in Mining Operation, Lima, Peru on October 23, 2014 entitled *Occupational Health of Miners at Altitude*. This educational conference was sponsored by the Instituto de Seguridad Minera. Dr. Saito holds an office in the Residents and Recent Graduates Section at ACOEM. Four of the OM-2 residents successfully sat the ABPM-OM examination early on during their OM-2 year with average scores again surpassing the average score for residency trained physicians. The other two plan to take the examination in October 2015. All OM-2 residents went on to work in the field of OEM in some capacity after leaving the program. One resident, Dr. Vearrier has been asked to return to co-teach the Toxicology Review Series to UPENN OEM trainees with Dr. Lloyd Tepper after graduation.

Some innovative aspects of the curriculum developed over the study period include the development of a faculty development initiative where site supervisors and rotation directors are invited to join resident Grand Round sessions live via *GlobalMeet*. Many faculty members participate with positive reviews. The OM-2 residents now participate in a table-top exercise

conducted during the Emergency Disaster Preparedness rotation. The OM-1 residents participated in a 5-hour workshop on Clinical Preventive Medicine, Worksite Wellness, Behavior Change Counseling and Cultural Competency in February 2015. Another experiential learning activity this year was the annual “Speaking with the Media Workshop” held in January 2015 as part of the Environmental Health: Risk Hazard Communication and Control rotation. Residents are interviewed on various OEM topics by media experts in a fictitious TV studio at the Annenberg Center on campus. Experts subject the resident responses to constructive critiques and the process repeats itself as the residents use tools they acquire during the session to improve.

During the reporting period we had two residents full time at UPENN for the first time since inception of the program – one OM-1 resident and one OM-2 resident. The clinical training sites (CTS) for these Internal Residents are at UPENN and the Philadelphia VA Medical Center. This relationship with the Veterans Administration rounds out and strengthens our relationship with government since previously, most of our trainees and graduates have been in the private sector. Electives are completed based on each internal resident’s educational plan completed at the start of the OM-1 and the OM-2 year in order to allow the resident to obtain a tailored and well-rounded educational experience. One resident, Dr. Kenji Saito, completed a 2-month long rotation at OSHA and a 1-month rotation at NIOSH. To enhance a diversity of experience, rotations in orthopedics, rheumatology, emergency medicine, safety and industrial hygiene, pulmonary, quality improvement, radiology, as well as at Chester County Hospital Occupational Medicine Clinic were created and completed by residents during this reporting period.

The Diversity Committee continues to meet 2-4 times per year and met in March 2014, December 2014 and April 2015. All residents and graduates, who are underrepresented minorities (URMs), as well as other interested current residents, are members. Outreach ideas include recruitment campaigns at the AOHC and ACOEM regional chapters (e.g. WOEMA) and strategizing means of making OEM better known among medical students, as a residency option. For the following year, the committee is working on offering elective opportunities to medical students and/or undergraduates in order to introduce them to the field of OEM.

The UPENN OEM program continues to be the only residency program designed for mid-career physicians, now also accommodating residents relatively new to the field as Internal Residents. The PD was awarded the 2015 Kehoe Lifetime Achievement Award for Education/Research for the continual improvement of this innovative train-in-place program. Our most recent graduates indicated upon program completion that the program met their needs. As we continue to grow our program, the focus remains to nurture and grow academically and clinically exceptional physicians with attention to diversity who will utilize their competence and skills in their own diverse regions throughout the US.