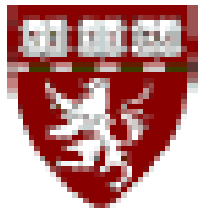


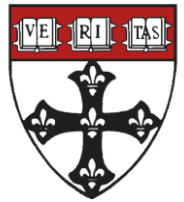
Occupational Medicine at Harvard: Past, Present & Future Challenges

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ASSOCIATE PROFESSOR, HARVARD MEDICAL SCHOOL



ASSOCIATE PROFESSOR and DIRECTOR
OCCUPATIONAL MEDICINE RESIDENCY
HARVARD SCHOOL OF PUBLIC HEALTH



DIVISION CHIEF, OCCUPATIONAL MEDICINE and
MEDICAL DIRECTOR, EMPLOYEE HEALTH & INDUSTRIAL MEDICINE
CAMBRIDGE HEALTH ALLIANCE



Outline

- **Past - History**
- Current Structure & Requirements
- Current Achievements
- Current Programs
- Future Challenges: Funding & Recruiting
- Conclusions

Origins of Occupational Medicine at Harvard

Harvard - MIT School for Health Officers (1913)

First US Professional Training in Public Health

Forerunner of HSPH and its Department of Environmental Health

Harvard produced much of early US literature on industrial hygiene, industrial toxicology, and occupational medicine (1916 first OM clinic at Harvard)

<http://www.hsph.harvard.edu/departments/environmental-health/departments-overview/>

In 1919, Dr. Alice Hamilton appointed assistant professor of industrial medicine at the Harvard Medical School (1922, industrial medicine became a part of the new Harvard School of Public Health).

First woman Harvard Professor

Lead poisoning among bathtub enamellers

Phossy jaw in matchmakers

Mercury poisoning among hatters

“Vibration dead fingers” syndrome in jackhammer operators

Anemia in workers exposed to benzene.

<http://www.faculty.harvard.edu/scholarship-and-research/faculty-profiles-dr-alice-hamilton>



DRINKER BROTHERS

<http://www.hsph.harvard.edu/departments/environmental-health/departments/department-overview/>

Dr. Cecil K. Drinker pioneer in industrial medicine

Among the first to emphasize respiratory tract as route of absorption for toxic dust and fumes.

Strong advocate of industrial hygiene and applied physiology as disciplines in preventive medicine.

Brother, Dr. Philip Drinker, developed Drinker Respirator, or "iron lung."



Ward of polio patients treated with Drinker-Shaw patent respirators – 1950s



Philip Drinker
1894 - 1972

Department of Industrial Hygiene

HSPH 1939

Significant group of scientists and engineers.

**War-orientated work: development of oxygen equipment for high-altitude flight and its physiological evaluation;
protective gas mask to meet the needs of chemical warfare;
heating, ventilation and air conditioning systems and
national health education program for shipyard workers.**

<http://www.hsph.harvard.edu/departments/environmental-health/departments-overview/>

1946 HSPH Fully Independent of HMS

Grants own degrees

Dept of IH:

Peacetime research and teaching

Newer specialties- radiological health and air pollution control.

IH faculty consulted to Atomic Energy Commission

1947, Dr. Ross McFarland, a noted researcher in aerospace medicine, joined department and developed a certificate program in Aviation Medicine.

<http://www.hsph.harvard.edu/departments/environmental-health/department-overview/>

Aviation Health and Safety

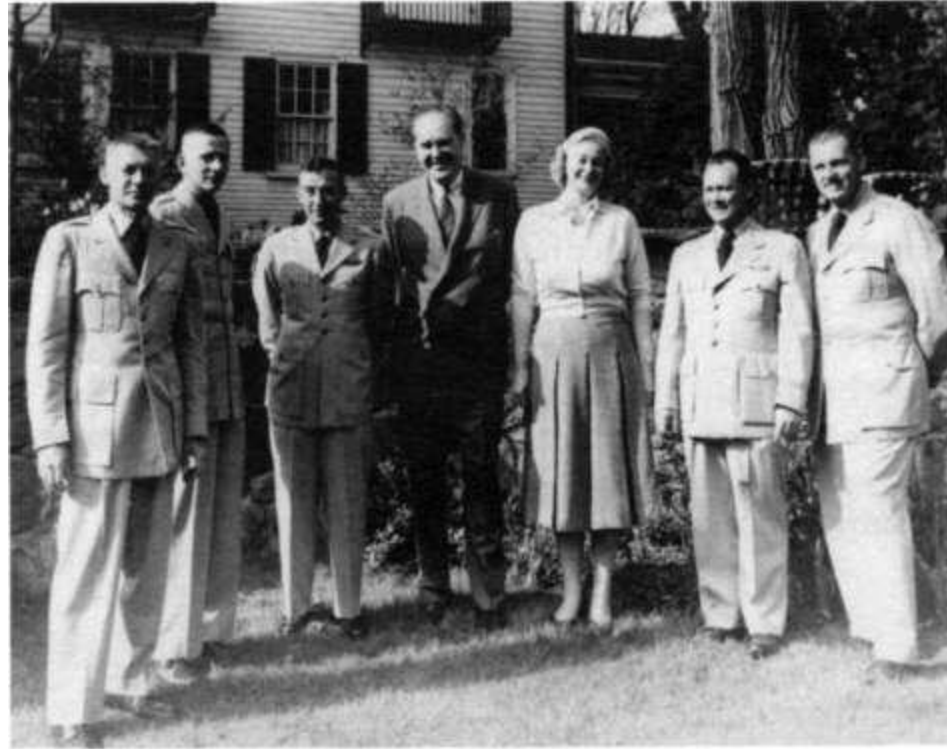
Forerunner of the OM Residency

**Ross McFarland faculty
HSPH (1947-72)**

**Highway safety, industrial
safety, other human
factors work.**

**Started program “Aviation
Health and Safety”**

**Trained over 200 scientists
 (“The McFarland boys”) into
 leaders in aerospace medicine,
 occupational health, highway
 safety and epidemiological
 research.**



Ross and Emily McFarland at their home in Cambridge, Massachusetts with a group of Air Force Medical Officers from Langley Field, Virginia. 1956.

http://www.libraries.wright.edu/special/collection_guides/guide_files/fsc1vol2.pdf

Dr. Harriet Hardy pioneer in occupational medicine

Investigated “Salem Sarcoidosis” among factory workers in Lynn and Salem, MA 1940's discovering Berylliosis



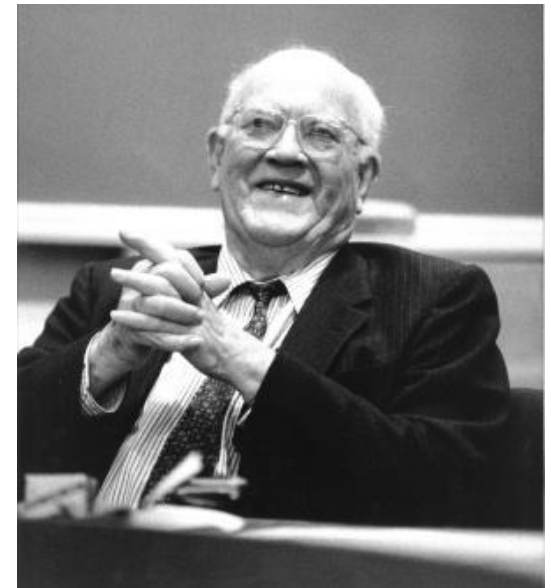
1949, created occupational medicine clinic at the Mass General Hospital Director until retiring 1971 and becoming first woman to reach full professor at Harvard Medical School

<http://news.harvard.edu/gazette/1997/05.01/FacultyofMedici.html>

HSPH Dept Environmental Health

**Departments of Industrial Hygiene, Physiology,
and Sanitation Engineering were grouped under
Division of Environmental Health and
Engineering Sciences led by
Dr. James L. Whittenberger
(1958)**

<http://www.hsph.harvard.edu/departments/environmental-health/department-overview/>



Harvard Educational Resource Center

1977, NIOSH established the Educational Resource Center (ERC) Program to answer the Occupational Safety and Health Act of 1970 mandate to ensure adequate supply of trained professionals in the field of occupational safety and health

HSPH selected as the ERC to serve New England

Center partially funded by a NIOSH grant
(OM training not Medicare-funded)

<http://www.hsph.harvard.edu/research/erc/about-the-center/>

Harvard Educational Resource Center

OM training

- **1980 Practicum Rotations added Dr. Ed Baker to supplement courses and research training.**
- **1987-96 Rotations Expanded by Dr. David Christiani**
- **1996-2006 Program further refined by Dr. Howard Hu**

OPSF- ACOEM- 1988-2014

OM training not Medicare-funded

NIOSH \$\$ insufficient

**Occupational Physicians Scholarship Fund
began awarding scholarships in 1988**

Initiated by two eminent corporate medical directors:

Joseph Cannella, MD, of Mobil

Thomas McDonagh, MD, of Exxon

<http://www.opsf.org/news/Case%20Statement%205%20-%202009.pdf>

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HSPH OEMR

ACGME-accredited 2-year training program for physicians leading to board-eligibility in Occupational Medicine (one of the three specialties of Preventive Medicine)

At least one year of accredited clinical training in the US or Canada as a Pre-requisite

Rigorous training; cutting-edge research; and a diverse balance of unique clinical environmental and occupational health opportunities.

Supervision comes from an outstanding nationally- and internationally-renowned faculty

Structure of OEMR

Year 1 —

- Clinical Rotations: July, August, January, June
- Academic Courses (MPH degree, or special student): September-May
- Continuity Clinic: Sept.-Dec.; Feb.-May

Year 2 —

- Multiple several month long clinical rotations in various settings
research project of publishable quality: July through June.

Both Years —

- Grand Rounds, Career & Research Seminars,
- Weekly Board Review
- Opportunities to attend regional and national scientific meetings.

Structure of OEMR

MPH 42.5 Credits

Biostat, Epi, Ethics, Society and Health (behavioral), Work Environment, Toxicology, Ergo, Safety, Occ/Env Med, Occ Health Policy, Practice of Occ Health, Env Epi

Clinical Rotation Sites

- Cambridge Health Alliance
- Fallon Clinic
- New England Baptist/Occupational and Environmental Health Network
- Massachusetts General Hospital
- Tufts Medical Center Traveler's Health Clinic
- Gillette/Procter & Gamble
- MA Department of Public Health
- Elective rotations are also offered at other Government Agencies (NIOSH, ATSDR, etc.)

Clinical Rotation Sites

Cambridge Health Alliance

Employee Health

PPE

RTW

FFD

WC

Immunes

Tb, Other Surveillance

Occupational Health

>500 Clients

Public

Private

On-site services

International Services

Travel medicine

Immigration

Consultation Clinic

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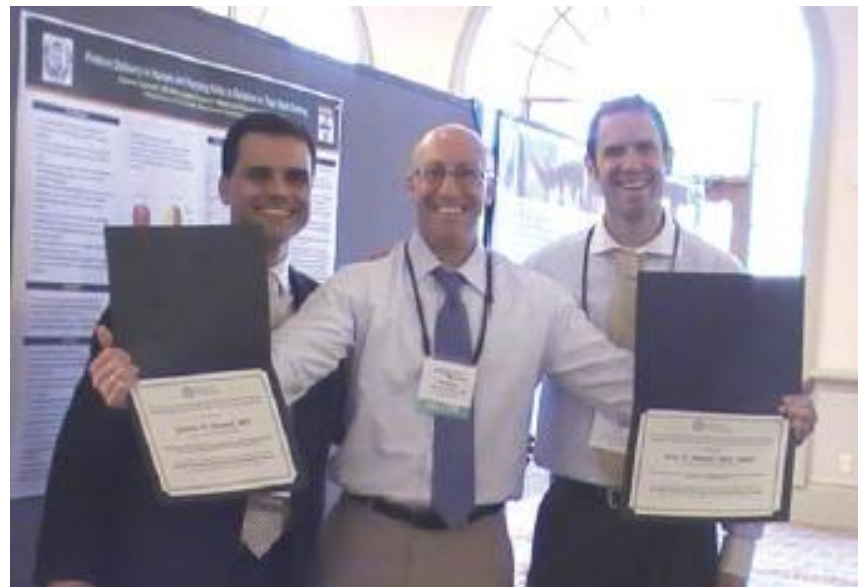
ACOEM/AOHC Resident Research Awards

Since 2000, HSPH residents have won 18 of these awards

Since 2000, HSPH represented on podium 10 out of 12 years with at least one resident award



Feb 27, 2012 Kales



Publications by HSPH Residents

Since, 2005-Present Over 35 publications

HARVARD
School of Public Health

February 25, 2012 · People | Calendar | myHsph | HSPH Email

Newsletters · Search: GO

About HSPH Academics Admissions Research Faculty Student Life News Alumni Make a Gift

home > ... > the harvard occupational & environmental medicine residency (oemr) > recent achievements

Menu

- OEMR Home
- About Us
- Administration & Faculty
- Alumni Networking
- Applying to the OEMR
- Frequently Asked Questions
- Initiative for Productivity and Health Management (IPHM)
- Links
- List of OEMR Graduates
- Recent Achievements
- Research Opportunities
- Web-streamed Grand Rounds: 2007

The Harvard Occupational & Environmental Medicine Residency (OEMR)

Resident Publications

Publications by Residents in the Harvard Occupational and Environmental Medicine Program, 2005-Present

Abejie BA, Kales SN, Christiani DC. Patterns of Pulmonary Dysfunction in Asbestos Workers: a cross-sectional study. *Journal of Occupational Medicine and Toxicology*. 2010, 5:12. (<http://www.occup-med.com/content/pdf/1745-6673-5-12.pfd>)

Abejie BA, Chung EH, Nesto RW, Kales SN. Grand Rounds: Asbestos-Related Pericarditis in a Boiler Operator. *Environ Health Perspect* 2008;116:86-89.

Amster E, Christiani DC. Urine Arsenic Concentration and Obstructive Pulmonary Disease in the US Population. *Journal of Toxicology and Environmental Health* (in press).

Au WW, Lee E, Christiani DC. Biomarker research in occupational health. *J Occup Environ Med*. 2006; 47:145-53.

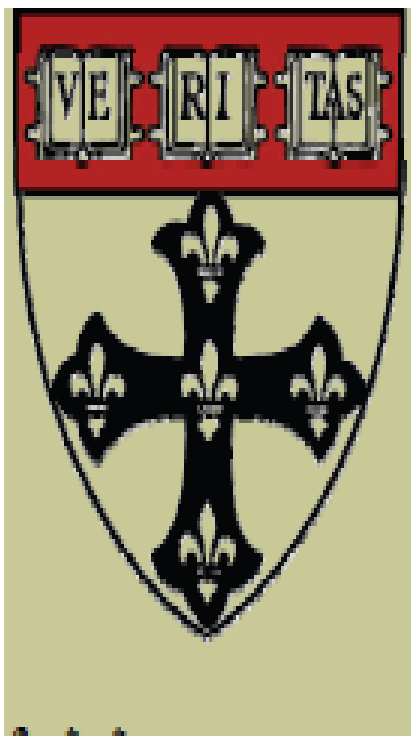
Durand C. Elements to be considered for Occupational and Environmental Health Services

Recent Graduates

32 graduates since 2003

**27/28 of the HSPH 2003-2011 graduates who
attempted board certification are now
ABPM-certified in OM**

Annual Reports 2008- present



Occupational and Environmental Medicine Residency
Department of Environmental Health, Harvard School of Public Health

<http://www.hsph.harvard.edu/erc/oemr/index.htm>

OEMR SYNAPSE 2010 Annual Report



3rd Edition

Spring 2011

Editor: Yolanta Petrofsky MD, MPH

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Current Programs

Categorical

Combined

Complementary

IPHM

Recent Graduates

Page 3

OEMR Synapse

CURRENT RESIDENTS: Senior Year



Anne McDonough MD, MPH (Harvard MPH 2010, OEMR 2011) is originally from Junction City, Oregon and is completing her residency at HSPH as a US Naval Scholar.

Anne received her undergraduate degree in Medical Technology from Troy University. She matriculated at the University of Alabama, Birmingham School of Medicine in 2000. There she developed her interests in policy and leadership with the American Medical Association, serving on the Membership Board, and at the National level in the AMA Student

Section.

In 2003, Anne was commissioned as Medical Officer in the United States Navy. After graduation, she completed internship training in Internal Medicine at the Naval Medical Center in San Diego and qualified as an Undersea Medical Officer in Diving and Hyperbaric Medicine.

Anne has a beautiful family with her husband Rob and three sons, the latest addition arriving in February 2011. After graduation she is headed back to warmer weather with the US Navy in Virginia.



Stasia Muhlner MD, MPH (OEMR 2011) attended Dartmouth College where she majored in Biology. Upon graduating, she worked as a business journalist in Santiago, Chile, and continued her career in writing and editing for the online drugstore PlanetRx and venture capital magazine Red Herring in San Francisco. She then pursued a medical degree at University of Southern California and earned her MPH at Boston University, concentrating in environmental health. She completed an internal medicine internship at Kaiser Permanente in Oakland, California before coming to our

program.

Having worked at the intersection of business and medicine, Stasia sees occupational medicine as a way to impact the health of populations through the workplace. During residency, she has been working at Liberty Mutual Research Institute for Safety, investigating urban versus rural return-to-work outcomes after fracture. She has also continued her interest in writing and editing as Associate Editor of the NEOEM Newsletter (and is currently accepting article submissions!). Stasia, her husband Ted, and 7-month old daughter, Estelle are settling in and making Charlestown their home.



Yolanta Petrofsky MD, MPH Chief Resident 2010-2011 (Harvard MPH 2010, OEMR 2011) is a 2-year OPSF Scholar and former US Air Force Aerospace Medicine Physician.

Originally from Colebrook, NH, she grew up on Southwestern Indian Reservations and in South-eastern Alaska. She is a Magna Cum Laude graduate of Boston University, who majored in Biochemistry and Molecular Biology. She went on to earn her MD from Loyola University Stritch School of Medicine in 2000 followed by an internal medicine internship.

As a Senior Flight Surgeon with 350 flying hours in over 15

aircraft and 8 years of experience, she played an integral role in the health, productivity and wellness of pilots. She was responsible for not only hyperbaric treatments and overseeing the U-2, B-1 and F-16 fatigue management and travel medicine programs, but also planning medical response to CBRNE mass casualty emergencies, pandemic influenza and aircraft mishaps. While in Germany she was the French translator and medical liaison for NASA STS 116/118 Transatlantic Abort Landing Sites.

Yolanta, her husband Luka, and children, 3 year-old Mikayla and 7 month-old Zachary are enjoying Arlington, realizing that home-owners in New England shovel a lot of snow.

OEMR Annual Report Vol. 3

Page 4

2010 GRADUATES

Chunbai Zhang MD, MPH (HSPH MPH 2009, OEMR 2010) who is also an internist is now a clinical fellow in sleep medicine at Brigham and Women's hospital/ Harvard Medical School. In the interest of getting to know what he is now prescribing, he tried CPAP himself for one month to see how it feels being a patient on CPAP treatment (see picture). His current research focuses on how sleep disorders such as obstructive sleep apnea (OSA) affect work performance and public health. He has co-authored 2 book chapters on the topics of OSA screening

and diagnosis, for Springer Verlag, and Elsevier, respectively. In addition, he just presented his most recent research results on commercial drivers at the National Sleep Foundation's Sleep Health and Safety meeting in DC (March 2011). His next research project involves driving simulation studies and predictive modeling of road crashes for truckers with OSA.

Chunbai continues to enjoy winter travel adventures. He was recently in southern Spain, Belgium and England, successfully dodging a series of snow storms from one country to another.



Eric Amster MD, MPH (Harvard MPH 2009, OEMR 2010) was born in San Diego, CA. He graduated from UC Berkeley in Biology and in Music followed by UC Davis Medical School. After completing an Internal Medicine internship at Cedars Sinai Medical Center, Eric came to Harvard as a Zuckerman Fellow in Public Leadership through the Kennedy School of Government.

Eric received a Fulbright Scholars grant and focused on environmental and occupational health development in the Middle Eastern region. His current research is focused on ambient air

pollution, which has been of interest following December's Carmel Forest Fire—the largest in Israel's history. Eric is leading the national effort to study the post-exposure effects on the rescue workers following the fires. Eric is board certified in Occupational Medicine and continues teaching both a toxicology course, as well as OM residents. He has done IH visits to various factories looking at their on-site occupational health clinics.

Eric, wife Bracha, son Naom and baby brother Yedid are all enjoying the Mediterranean and its weather. Next up for Eric: ambient air studies during diaper changes.



Gerardo Durand MD, MPH (Harvard MPH 2009, OEMR 2010) After graduation Gerardo moved to New Mexico and established his occupational medicine practice in Carlsbad. Gerardo is the sole occupational medicine specialist in the state's southeastern region. He is delighted to provide his professional services on behalf of Harvard OEMR to the hard working people of this part of the United States. Among the different economic activities in the region, Gerardo provides occupational medicine support to potash mines, oil and gas companies, refineries and the Department of Energy's Waste

Isolation Pilot Plant (WIPP).

Gerardo is board certified in both Occupational Medicine and Internal Medicine. He is a certified medical review officer (MRO) and is also pursuing his Independent Medical Examiner certificate (CIME).

When Gerardo is not 800 feet below the surface (see photo) working with corporate safety managers, he is spending time with his wife Lida and adorable new daughter, Adriana, who joined the family in November. Adriana is now considered a native "New Mexican".



Current Residents

CURRENT RESIDENTS: First Year

M. Christine David DO, MPH (OEMR 2012) is a New York City native and majored in Romance Languages at New York University. She went on to the New York College of Osteopathic Medicine in 2004 and completed an internship at Long Beach Medical Center. Christine recently finished a residency in Preventive Medicine at the University of Massachusetts, during which she earned a Master Degree in Public Health with an epidemiology concentration.

It was a rotation in occupational medicine with Dr. Joseph Celona at the Fallon clinic that

proved to be a pivotal point for her. Christine's desire to incorporate direct patient-care into her career brought her to occupational medicine. Christine focused her preventive medicine research on obesity and maternal-child health, and maintains an interest in environmental reproductive hazards and workplace wellness / health promotion. She would also like to use her clinical and language skills to work in global health & humanitarian efforts. Christine and her husband Brian are enjoying Boston and spending time with family.



Al Rielly MD, MPH

(OEMR 2012) was born in Boston and grew up in New York City. He is a graduate of Dartmouth College and the University of Massachusetts Medical School. Prior to his clinical training, Al worked for Congressman Kennedy's Massachusetts district office. He completed his clinical training in Internal Medicine at Boston Medical Center and the University of Vermont and is board certified in Internal Medicine. Al completed a Preventive Medicine residency at SUNY Stony Brook and received a MPH from Columbia University. He is also board certified in Gen-

eral Preventive Medicine.

Al worked as an Assistant Professor of Clinical Preventive Medicine at SUNY Stony Brook where he served as Associate Medical Director of Employee Health & Wellness at Stony Brook University Medical Center.

Al is a 2011-12 recipient of the OPSF Scholarship. Given his proficiency with standardized exams, and his unusually broad experience for a resident, Dr. Kales has tapped Al to lead HSPH's new weekly board review sessions. In the future, Al is interested in clinical occupational health research and direct patient care activities.



Paul Medrek, MD, MPH

(Complementary Pathway, OEMR, 2013) attended Holy Cross College and the University of Massachusetts Medical School. He is board certified in Emergency Medicine and earned a Master Degree in Public Health (Occupational Health) at the Medical College of Wisconsin. He has extensive experience, serving as Director of Occupational Health at Baystate Health in Springfield, Massachusetts, a Tufts affiliate. He has also been Medical Director at the Center For Occupational And Environmental Health in Portsmouth, New Hampshire; Medical

Director for Seabrook Nuclear Power in Seabrook, New Hampshire; and previously was a Clinical Instructor in Medicine at Harvard Medical School.

Paul resides in Somers, CT with his wife Rachel and two young sons, Jack and Ben. At leisure, he enjoys hitting the gym and playing outdoor sports with his family.

Paul is a trail-blazer as the first resident to enter the HSPH OEMR under the new Complementary Pathway and will train for two years, half-time. See the story on this new program on page 12.



Current Residents Cont'd

1st year:

1-US Navy- Flight Surgeon

2-Tufts Medical Sch. & Internship

Incoming:

1-US Navy- Family Med. BC

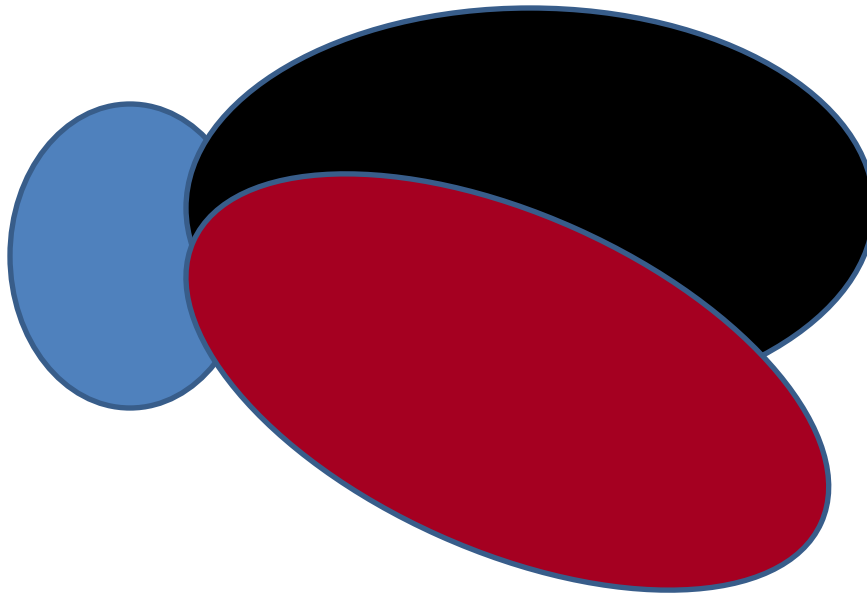
2-Gen. Preventive Medicine

Outline

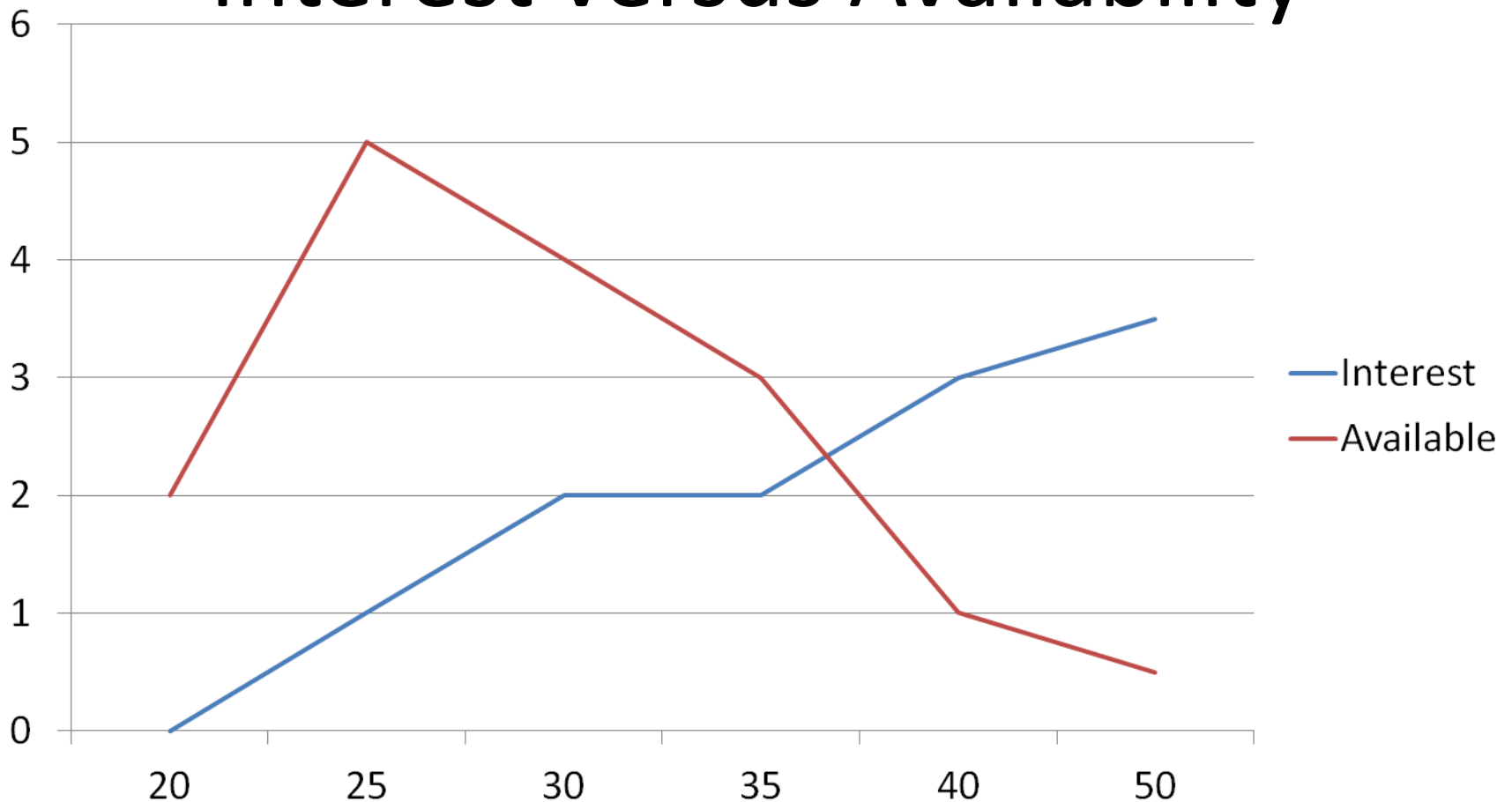
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Recruiting

Available & Interested- Ideal pre-Requisites-
High Quality & Competitive



Occ Med: Potential Trainees- Interest versus Availability



Complementary Program

Route to OM Board Certification for Mid-Career practitioners

Must be BC in other specialty

>/=2 years OM practice experience

5 basic Courses +

One year full-time residency in OM

Combined Program

Allows medical students to enter OM directly from medical school

4 year Program

**On Completion Board-eligible in both internal medicine and occupational medicine;
and receive MPH**

Physician - MBA Initiative

MD/MBA Initiative: More medical schools than ever, Harvard included, are offering MD-MBA programs.

OM works at the interface of business, medicine and public health.

Direct outreach program to MD-MBA students and established MD-MBA professionals.

Some of these physicians can find their ideal career options within OM.

Funding

**NIOSH ERCs under constant Budget Threat
2010-Present**

OPSF Ended- last Scholarships given

Military- more deployments- less “Outservice”

Funding- Pool of \$\$ Finite and Small

What is the right number of Programs?

>20 small programs with many “weak” residencies

**5-10 Larger Centers of Excellence,
Higher resident Census**

Funding

Industry and Healthcare: Demand for OM trained and certified physicians far exceeds supply of these specialists

Industry and Healthcare: Willingness to fund OM training extremely limited

Can we Correct the Mismatch??

IPHM (Productivity & Health Management)

Leadership for Productivity and Health Management: Issues, Innovations, and Solutions: September 30 – October 1, 2010



Dr. Walter Willett (left), Frederick John Stare Professor of Epidemiology & Nutrition and Chair of Nutrition at HSPH with John Mackey, CEO Whole Foods Market (right) exchange viewpoints on the optimal diet.

“the healthiest 50% of Wellpoint members account for only 10% of costs, the sickest 5% generate a stunning 55% of expenditures”

› Programs

- › Sleep and Shift Work: Optimizing Productivity and Health Management in the 24/7 Global Economy

REGISTER NOW

- › Program overview
- › Who should participate
- › Learning objectives
- › Agenda
- › Faculty
- › Fees and Logistics
- › FAQs

› Home

Sleep and Shift Work: Optimizing Productivity and Health Management in the 24/7 Global Economy

September 27–28, 2012 • Boston, MA

REGISTER NOW

REFER A COLLEAGUE

JOIN MAILING LIST

Program Overview

Achieve cutting-edge exposure to the most up-to-date perspectives on productivity and health management, operations, and public policy issues surrounding the challenges of fatigue, shift work, and sleep-related disorders in the 24/7 global economy.

Program Goals

- Promote a state-of-the-art understanding of the impact of fatigue, sleep, and shift work on the productivity and health of workers and organizations in an authoritative, educational venue.
- Provide a dynamic multi-disciplinary forum to discuss the state of the science in both productivity and health management and business operations related to strategies to mitigate the individual,

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Conclusions- OM Training

High Quality, Rigorous, Accredited Training Available

Excellent Jobs Available in Diverse Environments

Graduates are very Successful

Conclusions- OM Recruiting

Specialty is Not Well Known

Specialty is Not seen as Desirable to most young Physicians (or “Invisible” – Misconceived)

Older Physicians who migrate to OM practice lack time/cannot sacrifice income to complete most formal training programs

Conclusions- OM Funding

Dedicated Federal \$\$ Limited and under Threat

Current Corporate & Individual giving “Tight”

**OM programs need to do a better job educating
Government & Private Sector on the ROI for
OM training**

Acknowledgements

- **Drs. Dubois, Dufrense and Patry**
- **Dr. David Christiani**
- **Dr. Sam Forman**
- **NIOSH ERC**
- **OPSF**
- **Multiple Corporate and Individual Donors**

Merci!
Thank You!

Discussion / Questions