

Boston Children's Hospital/Harvard Medical School Fellowship Training in Pediatric & Reproductive Environmental Health



Boston Children's Hospital
Until every child is well™



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

Speaker



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Boston Children's Hospital

Director, Region 1 New England PEHSU

Director, Fellowship Training Program

Professor, Harvard Medical School

School Physician

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Children's Vulnerability

Porous blood-brain barrier ;
Sensitive
forming brain tissue

Immature detox:
liver, kidneys, lungs

Breast feeding

Nutritional
differences

Immature immune
system

Smaller size and wt;
Longer life spans

Immature, thin skin

Poor cognitive
discrimination

Immature lungs
until 8 years old

Oral exploratory
habits

Breathing zone
closer to ground

Pica

Mimicry

Rely on others for safety,
protection or escape

Mobility: crawling, cruising,
toddler gait

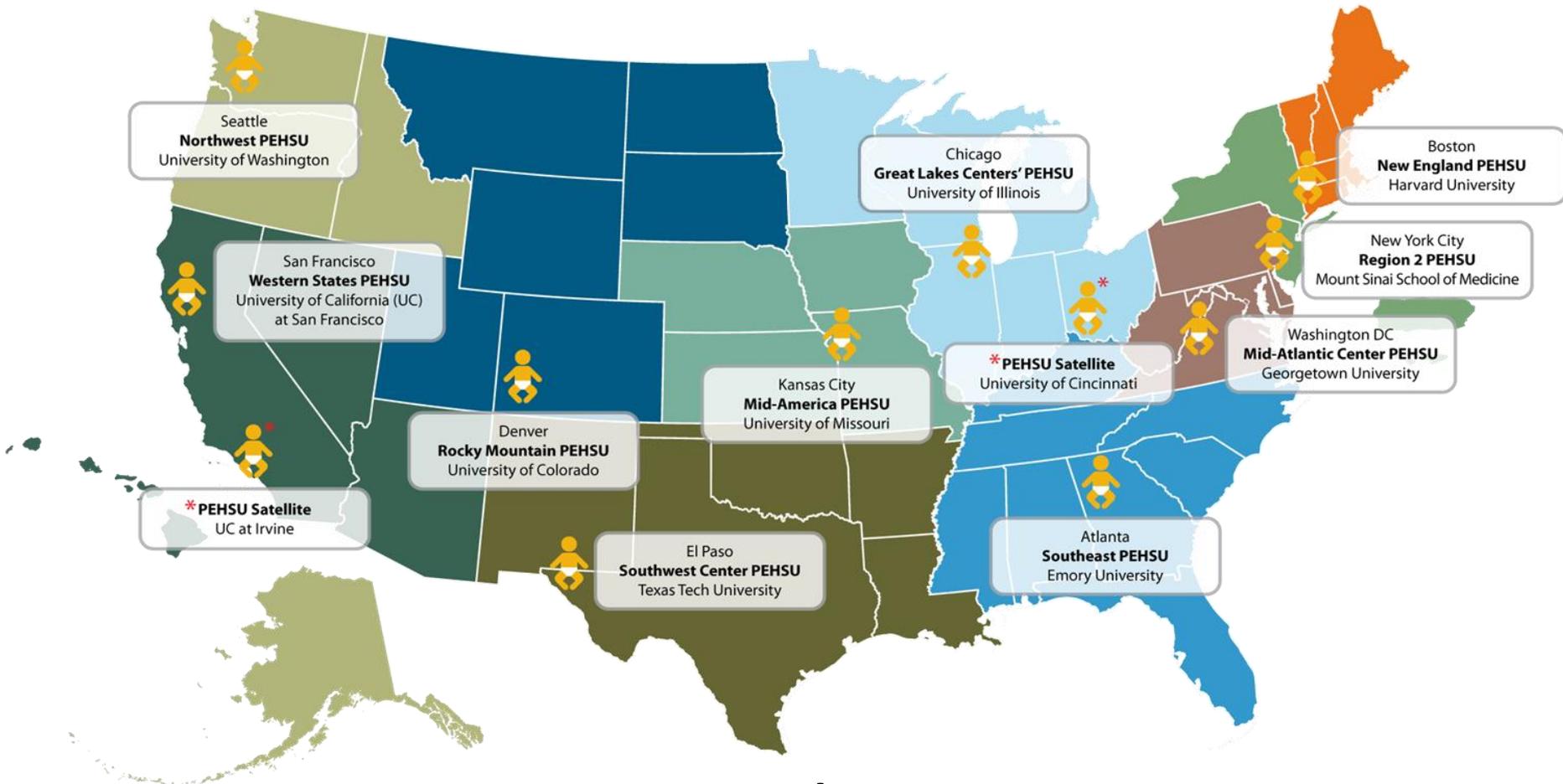
Curiosity



Children's & Women's Reproductive Health Cumulative Risks & Disparities



PEHSUs

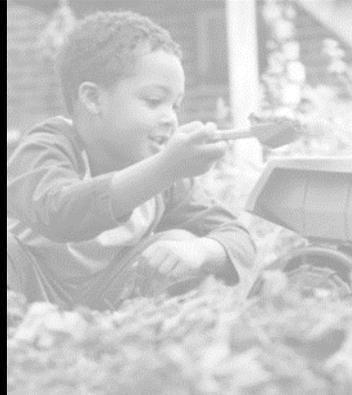


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PEHSU Impacts

Support need for *specific* clinical information on environmental toxins

Facilitate *early* response to public health issues



Engage in public educational outreach activities

Participate in clinical assessments and referrals as needed

Partner with local and state health departments and regional poison control centers



Give *advice* to residents and community leaders



Provide health care provider *education* and training opportunities



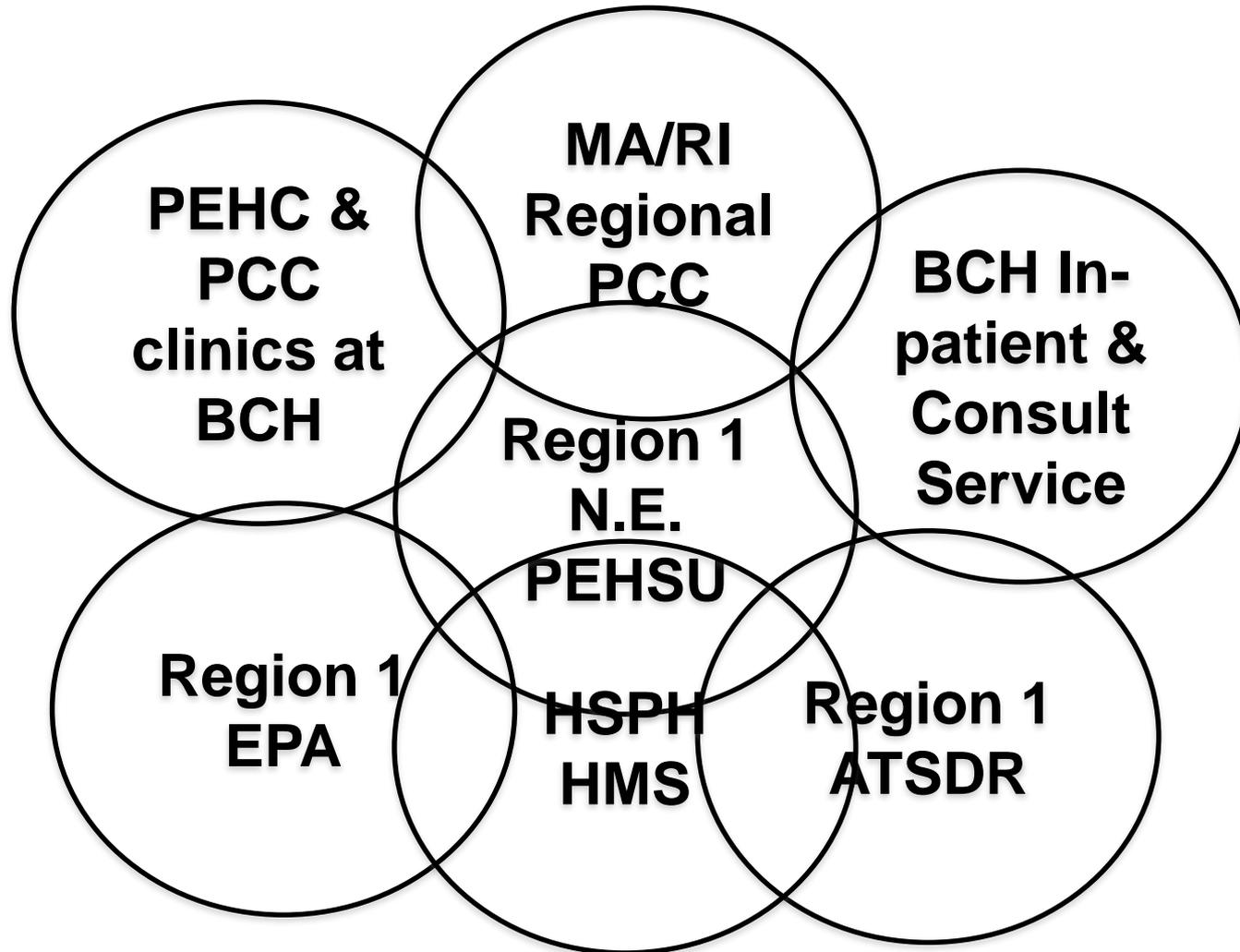
Boston Children's Hospital/Harvard Medical School PREH Fellowship Training

- Certified fellowship training site by Academic Pediatric Association
- 2 years (optional: 3rd research year)
- Requirements: physician-level pediatrics or family medicine residency & state licensure eligibility

Fellowship Training Goals

- **Clinical Service**
- **Teaching**
- **Research**
- **Community Advocacy**

Fellowship Venues



Speaker



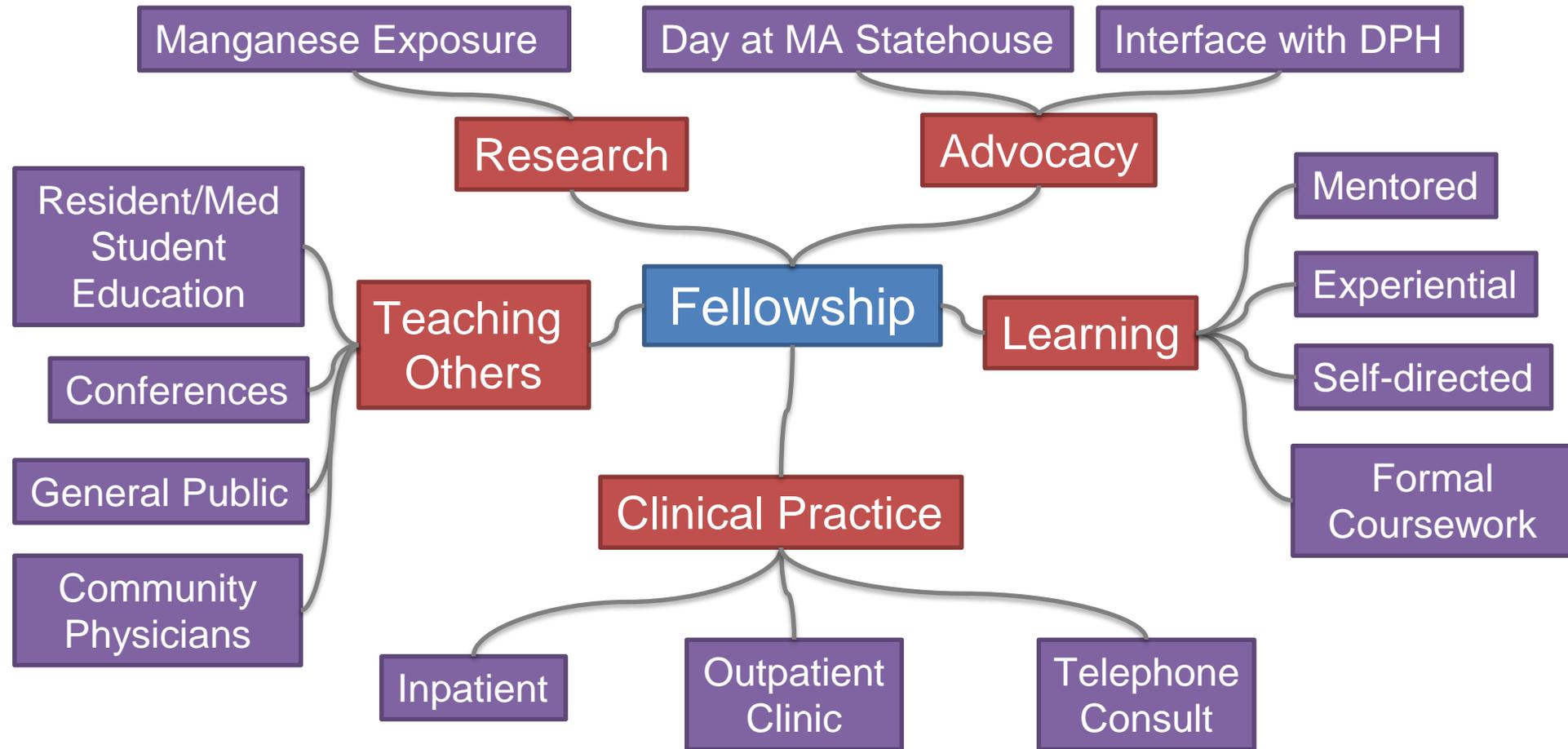
Bryan Stierman, MD, MPH, FAAP

Clinical Fellow in Pediatric Environmental Health,
Boston Children's Hospital

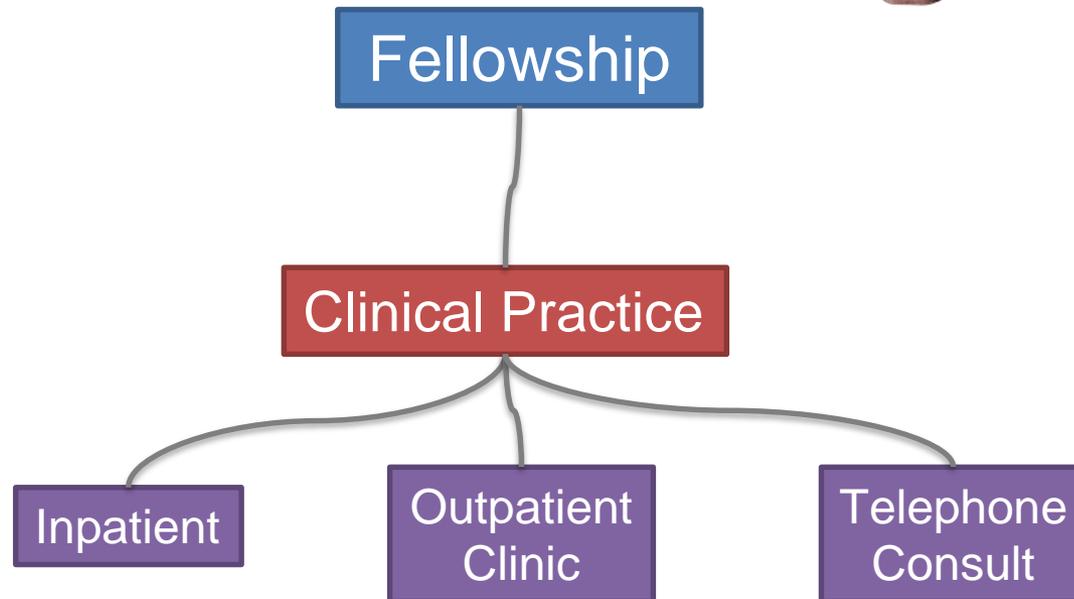
Staff Physician, General Pediatrics, Boston
Children's Hospital

Instructor in Pediatrics, Harvard Medical School

What does an Environmental Health Fellow do?

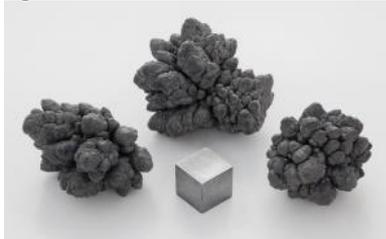


Clinical Practice



Cases

- LEAD!!!!
 - Lead paint
 - Water
 - Marksmanship
 - Imported Products



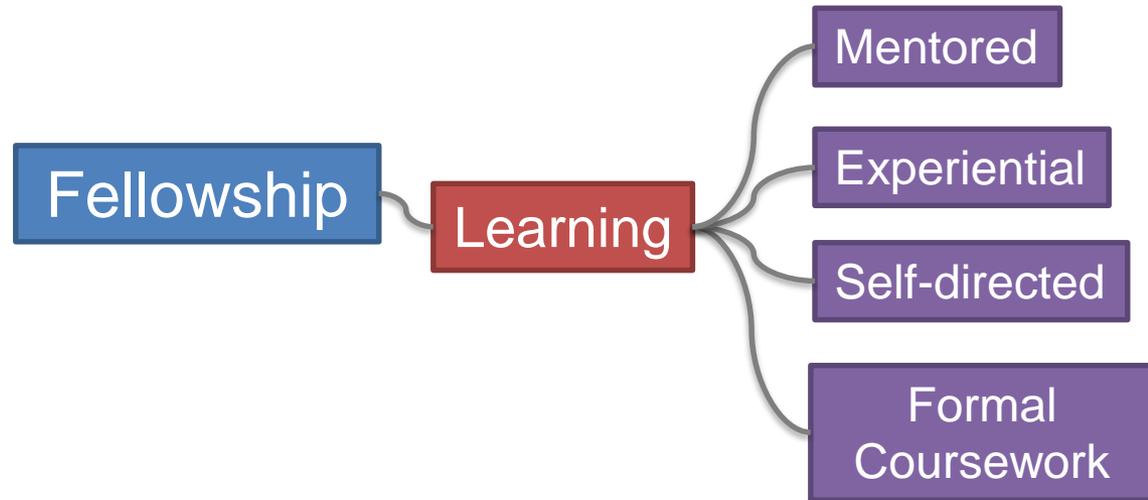
- Radon
- Arsenic
- Uranium
- Pesticides (paraquat)
- PFAS

- Mold
- VOCs
- Carbon Monoxide
- Manganese
- TCE
- HAA5
- Possible Cancer Cluster
- “Sewer Gas”
- Coal Tars
- Non-ionizing radiation
- Cannabis
- Unexplained symptoms

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<https://commons.wikimedia.org/w/index.php?curid=12381318>



Learning



Learning

Formal Coursework

- Certificate in Applied Biostatistics through Harvard Catalyst
- Introduction to Environmental Health through Harvard School of Public Health
- Toxicology for Urgent, Emergency, and Critical Care through Harvard Medical School
- Introduction to Clinical Research through Boston Children's Hospital
- Numerous lectures and grand rounds throughout the medical center

Self-Directed

- Books
- Articles
- Tox Profiles

Experiential Learning

- Clinical work
- Academic papers, presentations

Mentorship

Teaching Others

Resident/Med
Student
Education

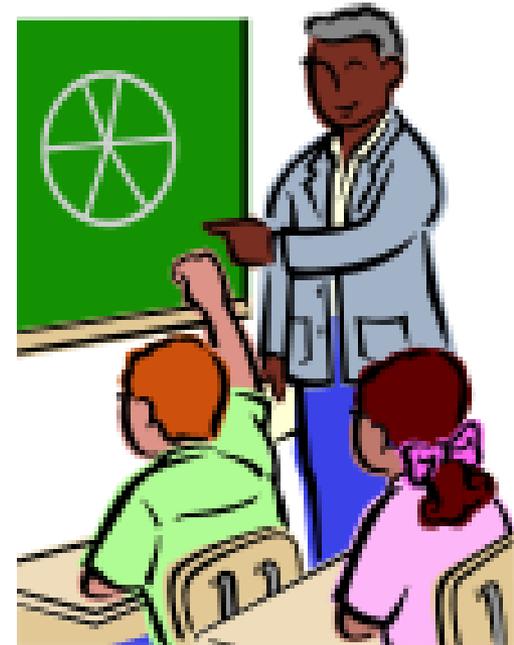
Conferences

General Public

Community
Physicians

Teaching
Others

Fellowship



Teaching Others

Screening, Diagnosis and Multi-pronged Management and Prevention of Elevated Blood Lead Levels in Children

Marissa Hauptman, MD, MPH, FAAP
Attending Physician
New England Pediatric Environmental Health Specialty Unit

Bryan Stierman, MD, MPH
Clinical Fellow
New England Pediatric Environmental Health Specialty Unit

Commentary

Children With Autism Spectrum Disorder and Lead Poisoning: Diagnostic Challenges and Management Complexities

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Radon: Information for Clinicians

Presented during the May 10, 2018 AAP Environmental Health ECHO

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Research

Manganese Exposure

Research

Fellowship



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Advocacy

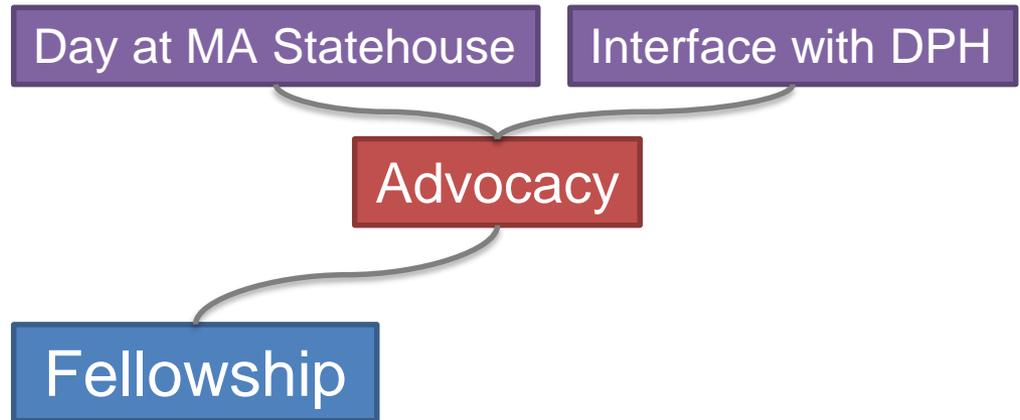


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Benefits of the Fellowship

- Gain expertise in clinical assessment and management of a wide-range of environmental exposures, especially lead poisoning
- Develop and understanding of the concepts of risk assessment and risk communication
- Work at the interface of clinical medicine and public health
- Opportunity for formal coursework and informal learning in public health and environmental health
- Ability to expand research and academic horizons in environmental health
- Meeting and collaborating with leaders in the field

Prior Fellows Employment After Fellowship

- Assistant Director Pediatric Environmental Health Center
- Academic Medicine
- Private Practice
- CDC Epidemic Intelligence Service

Questions???



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