**Symposium:**
**Impact of Unconventional Natural Gas Drilling Operations**
**on the Environment and Public Health**
**Co-sponsored by Center of Excellence in Environmental Toxicology (CEET)**
**and Center for Public Health Initiatives (CPHI)**
**Tuesday, February 18, 8:00 – 5:30**
**Smilow Center for Translational Research**

*8:30am – 9:00am* Welcome & Introduction

Trevor M. Penning, Ph.D.
Director, Center of Excellence in Environmental Toxicology
Department of Pharmacology
Perelman School of Medicine
University of Pennsylvania

Jennifer Pinto-Martin, Ph.D., M.P.H.
Executive Director, Center for Public Health Initiatives
Professor of Nursing
School of Nursing
University of Pennsylvania

**<u>The Hydraulic Fracturing Process - Are there effects on air and water quality?</u>**

*9:00am – 9:25am* Unconventional Natural Gas Drilling

Tim Bechtel, Ph.D. (*Confirmed*)
Professor of Geosciences
Earth and Environmental Studies
Franklin and Marshall College

*9:25am – 9:50am* Air Quality

Peter DeCarlo, Ph.D. (*Confirmed*)
Assistant Professor
Department of Civil, Architectural, and Environmental Engineering
Department of Chemistry
Drexel University

*9:50am – 10:15am* Water Quality

Lisa Senior (*verbally Confirmed*)
Acting Water-Quality Specialist
USGS Pennsylvania Water Science Center

10:15am – 10:45am **Break**

**<u>Public Health Impact - What is happening now?</u>**

*10:45am – 11:10am* Environmental Health Exposures

Human health risk assessment of air emissions from development of unconventional natural gas resources

Lisa McKenzie, Ph.D., M.P.H. (*Confirmed*)
Research Associate
Department of Environmental and Behavioral Health
Colorado School of Public Health

*11:10am – 11:35am* Environmental Health Sciences Core Center (NIEHS)-Inter Center Working Group Initiative

Trevor M. Penning, Ph.D.
Director, Center of Excellence in Environmental Toxicology
Department of Pharmacology
Perelman School of Medicine
University of Pennsylvania

*11:35am – 12:05pm* *CEET Ongoing Studies*

Groundwater quality and health outcomes in adjacent areas with and without hydro-fracturing activities

Reynold A. Panettieri, Jr, M.D.
Robert L. Mayock and David A. Cooper Professor of Medicine
Director, Airways Biology Initiative
Deputy Director, Center of Excellence in Environmental Toxicology
University of Pennsylvania

Beizhan Yan, Ph.D. (*Confirmed*)
Lamont Assistant Research Professor
Department of Earth and Environmental Sciences
Columbia University

Risk Perception of Hydrofracturing in Eastern States

Marilyn V. Howarth, M.D.
Director, Community Outreach and Engagement Core
Center of Excellence in Environmental Toxicology
Adjunct Associate Professor of Emergency Medicine
University of Pennsylvania

*12:05pm – 12:30pm* Ongoing Studies of Marcellus Shale Development and Health at the Geisinger Health System

Brian S. Schwartz, M.D., M.S., (*Confirmed*)
Professor, Johns Hopkins Bloomberg School of Public Health
Senior Investigator, Geisinger Center for Health Research
Serves as Director of the Environmental Health Institute

*12:30pm – 1:30pm* **Lunch**

## Industry Practices and Regulation

*1:30pm – 1:55pm* Industry

Satinder S. Sarang, Ph.D., DABT (*Confirmed*)
Toxicologist
Shell International
Shell Health, Risk Science Team
Serves as Vice-Chair American Petroleum Institute's Exploration and Production Health Issues Group

*1:55pm – 2:20pm* Federal Agencies – US Environmental Protection Agency
Samantha Beers, Esq., (*invitee*) or Alternate from EPA
Director
U.S. EPA Mid-Atlantic Region III

*2:20pm – 2:45pm* State Government
Senator Stewart J. Greenleaf, R-Montgomery / Bucks (*Confirmed*)
Pennsylvania's 12th Senate District
State Senate

*2:45pm – 3:15pm* **Break**

**Citizen's Concerns – What are the concerns of the community?**

3:15pm – 3:45 pm Community Outreach and Engagement
Rebecca Roter (*Confirmed*)
Founder
Breathe Easy Susquehanna County

Joseph Otis Minott, Esq. (*Confirmed*)
Executive Director
Clean Air Council

**Panel Discussion**

*3:45pm – 5:15pm*
Moderator – George L. Gerton, Ph.D.
Reproduction, Endocrinology, and Development (READ) Affinity Group Leader
Center of Excellence in Environmental Toxicology
University of Pennsylvania

Poune Saberi, M.D., M.P.H.
Clinical Assistant Professor of Emergency Medicine
Physicians for Social Responsibility

Richard Pepino, M.S., M.S.S.
Deputy Director
Community Outreach and Engagement Core
Center of Excellence in Environmental Toxicology
(Previously with Franklin & Marshall, and US EPA Region III)

John Krohn (*invitee*)
Energy In Depth
Independent Petroleum Association of America

## **Where do we go from here?**

*5:15pm - 5:30pm*

Reynold A. Panettieri, Jr., M.D.
Deputy Director, Center of Excellence in Environmental Toxicology
University of Pennsylvania

Aubrey Miller, M.D., M.P.H., (*invitee*)
Senior Medical Advisor
NIEHS