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# INTERNATIONAL ENVIRONMENTAL LUNG DISEASE SYMPOSIUM

FRIDAY AND SATURDAY  
JULY 12–13, 2019

URMILA SAHAI SEMINAR ROOM  
2117 MEDICAL EDUCATION AND RESEARCH FACILITY (MERF)  
375 NEWTON ROAD  
IOWA CITY, IA

JOINTLY PROVIDED BY: The University of Iowa Roy J. and Lucille A. Carver College of Medicine, Department of Radiology, Korea Environmental Industry & Technology Institute, Department of Radiology, Seoul National University, and the UI Environmental Health Sciences Research Center



# GENERAL INFORMATION

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## Intended Audience

Physicians, researchers, fellows, residents, practitioners, mid-level providers, radiology technologists, and graduate students.

## Purpose

It is our intent that participants will be able to understand the importance of the environmental lung diseases such as asthma, COPD, pneumoconiosis, and the effects of dust or micro-dust and will be able to apply updated knowledge for the prevention, diagnosis, and treatment of environmental lung disease.

Participants will receive an overview of the laboratory, animal, and translational research from the University of Iowa and Korean environmental lung disease research groups. Additionally, we will discuss opportunities for cooperative research between the University of Iowa and Seoul National University.

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## Educational Objectives

Upon completion of this program, the participant should be able to

- Describe occupational and environmental exposures
- Discuss the role of imaging for the investigation of the environmental lung diseases
- Discuss the methods to measure micro-dust or particulate air pollution
- Describe the interstitial lung diseases caused by environmental exposures
- Explain the humidifier disinfectant-associated lung disease pathology and CT findings
- Define the role of environmental endotoxin exposure in asthma
- Identify innovative approaches to prevent environmental lung disease
- Evaluate ambient air pollution and mechanisms of respiratory infection
- Describe the methods to assess PM2.5 for epidemiological studies
- Assess the inhalation toxicology of engineered nanomaterials
- Analyze biomass exposure and lung functional impairment
- Outline the effects of air pollution and DNA methylation
- Describe the application of lung organoids
- Interpret CT findings of hypersensitivity pneumonitis
- Describe CFD modeling for particle transportation and environmental lung diseases

## Registration

This symposium and associated CME credits are provided at no charge courtesy of the Korea Environmental Industry & Technology Institute. Please register by **June 28, 2019**.

## Location and Parking

The symposium will be held in the Urmila Sahai Seminar Room, second floor of the Sahai Medical Education Center in the Medical Education and Research Facility (2117 MERF), 375 Newton Road, Iowa City, IA 52242.

Parking is available in the Newton Road Ramp, 360 Newton Road at a cost of \$20 per day. The MERF building is located across from the Newton Road Parking Ramp.

Directions may be found at the following website: [maps.uiowa.edu/merf](https://maps.uiowa.edu/merf)

## Credit

This activity has been planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of the University of Iowa Carver College of Medicine, the Korea Environmental Industry & Technology Institute, and the UI Environmental Health Sciences Research Center. The University of Iowa Carver College of Medicine is accredited by the ACCME to provide continuing medical education for physicians.

The University of Iowa Roy J. and Lucille A. Carver College of Medicine designates this live activity for a maximum of 6.75 *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

# PROGRAM SCHEDULE

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**Friday, July 12, 2019**

Urmila Sahai Seminar Room (2117 MERF)

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**12:00 PM Registration and Light Lunch**

**1:00 Welcome and Introductions**

Changhyun Lee, MD, PhD, Peter S. Thorne, MS, PhD, and Colin P. Derdeyn, MD

**Session 1: General**

Chair: Changhyun Lee, MD, PhD

**1:10 Human Burden and Policy Translation: Occupational and Environmental Exposure to Public Health Threats**

Eun-Kee Park, PhD

**1:30 The Role of Environmental Endotoxin Exposure in Asthma**

Peter S. Thorne, MS, PhD

**1:50 Non-Tobacco Exposures Contributing to COPD Morbidity**

Nadia N. Hansel, MPH, MD

**2:20 Development of Receptor-Based Environment-Induced Diseases Prevention and Management System Using Real-Time Collected Environment and Health Information**

SungChul Seo, PhD

**2:35 Discussion**

**2:45 Break**

**Session 2: Clinical and Cohort Studies**

Chair: Alejandro P. Comellas, MD

**2:55 Biomass Exposure and Lung Impairment (India Experience)**

Alejandro P. Comellas, MD

**3:10 Introduction of Korean Cohort for the Project “CT Technique Development for Environmental Lung Disease”**

Changhyun Lee, MD, PhD

**3:25 Assessment of PM<sub>2.5</sub> Exposure Levels in Epidemiological Studies**

Kyoung-Nam Kim, MD, PhD

**3:40 Discussion**

**3:50 Break**

**Session 3: Animal Research**

Chair: Peter S. Thorne, MS, PhD

**4:00 Micro-Dust Animal Studies**

Sang-Hoon Jeong, PhD

**4:15 Inhalation Toxicology Studies of Engineered Nanomaterials**

Andrea Adamcakova-Dodd, PhD

**4:30 Ambient Air Pollution and Mechanisms of Respiratory Infection (In Vitro and Translational Research)**

Emma Stapleton, PhD

**4:45 Discussion**

**4:55 Break**

**Session 4: Genetics and Cell Biology**

Chair: Woo Jin Kim, MD

**5:05 Ambient Air Pollution and Blood DNA Methylation**

Mi Kyeong Lee, MSPH, PhD

## Friday, July 12, 2019 continued

Urmila Sahai Seminar Room (2117 MERF)

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- 5:35        Effects of Air Pollution on Lung Function and CT Measurements in a Korean COPD Cohort**  
Woo Jin Kim, MD
- 5:50        Application of Human Pluripotent Stem Cell-Delivered Lung Organoids**  
Eun-Mi Kim, PhD
- 6:05        Discussion**
- 6:15        Adjourn**
- 6:15 – 9:00 PM    Dinner and Reception**

## Saturday, July 13, 2019

Urmila Sahai Seminar Room (2117 MERF)

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### Session 5: New Technology and Engineering

Chair: Eric A. Hoffman, PhD

- 9:00 AM    Deep Learning CT Image-Based Analysis of COPD**  
Ching-Long Lin, PhD
- 9:15        Differentiation of Airway Structure and Lung Function in Korean Asians vs. White Americans via Quantitative Computed Tomography**  
Sanghun Choi, PhD
- 9:30        CT Image Matching and CFD Modeling for Regional Lung Responses to Environmental Exposure**  
Jiwoong Choi, PhD
- 9:45        Discussion**
- 9:55        Break**

### Session 6: Science in Radiology

Chair: Ki Yeol Lee, MD, PhD

- 10:05        Role of Vascular Dysfunction in Response to Parenchymal Inflammation**  
Eric A. Hoffman, PhD
- 10:20        Gender Equality in the CT Evaluation of Pulmonary Disease**  
Jessica C. Sieren, PhD
- 10:35        Environmental Lung Disease Imaging—Interstitial Lung Disease Update**  
Archana T. Laroia, MD
- 10:50        Humidifier Disinfectant-Associated Lung Injury: Past and Present Concerns**  
Hongseok Ko, MD
- 11:05        Generation-Based Airway Remodeling in Korean Smokers with Normal-Looking CT**  
Kum-Ju Chae, MD
- 11:20        Discussion**
- 11:30        CME Adjourns**

### Workshop and Lab Tour

- 11:40        Workshop**
- 12:40 PM    Lunch and Lab Tour**
- 3:00        Adjourn**

# PROGRAM FACULTY

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## Guest Faculty

### Kum-Ju Chae, MD

Clinical Assistant Professor  
Department of Radiology  
Institute of Medical Science  
Research Institute of Clinical Medicine  
Chonbuk National University Medical School  
and Hospital

### Sanghun Choi, PhD

Assistant Professor  
School of Mechanical Engineering  
Kyungpook National University

### Nadia N. Hansel, MD, MPH

Professor and Associate Dean for Research  
Director of Pulmonary and Critical Care Medicine  
Johns Hopkins University School of Medicine

### Sang-Hoon Jeong, PhD

Research Professor  
Department of Biomedical Science  
Korea University College of Medicine

### Eun-Mi Kim, PhD

Senior Researcher Scientist  
R&D center for Advanced Pharmaceuticals  
& Evaluation  
Korea Institute of Toxicology (KIT)

### Kyoung-Nam Kim, MD, PhD

Assistant Professor  
Seoul National University Hospital  
Department of Preventive Medicine  
Seoul National University College of Medicine

### Woo Jin Kim, MD

Professor  
Department of Internal Medicine and  
Environmental Health Center  
Kangwon National University

### Hongseok Ko, MD

Radiologist  
Department of Radiology  
Division of Cardiothoracic Imaging  
National Medical Center, Korea

### Ki Yeol Lee, MD, PhD

Professor  
Department of Radiology  
Korea University Ansan Hospital  
Korea University College of Medicine

### Mi Kyeong Lee, MSPH, PhD

Epidemiology Branch  
National Institute of Environmental Health  
Sciences (NIEHS)

### Eun-Kee Park, PhD, MASc

Professor  
Department of Medical Humanities and  
Social Medicine  
Kosin University College of Medicine

### SungChul Seo, PhD

Professor  
Department of Environmental Health and Safety  
Eulji University College of Health Industry

## University of Iowa Faculty

### Andrea Adamcakova-Dodd, MS, PhD

Assistant Research Scientist  
Department of Occupational and Environmental  
Health  
College of Public Health

### Jiwoong Choi, PhD

Assistant Research Scientist  
IIHR-Hydrosience & Engineering; Department  
of Mechanical Engineering

### Alejandro P. Comellas, MD

Associate Professor of Internal Medicine  
Director of the ICTS Clinical Research Unit

### Eric A. Hoffman, PhD

Director, Advanced Pulmonary Physiomic  
Imaging Laboratory  
Professor of Radiology  
Professor of Internal Medicine  
Professor of Biomedical Engineering (BME)

### Archana T. Laroia, MD

Clinical Associate Professor of Radiology  
Division of Cardiovascular and Pulmonary Imaging  
University of Iowa Hospitals and Clinics

### Changhyun Lee, MD, PhD

Professor  
Department of Radiology  
University of Iowa Hospitals and Clinics  
University of Iowa College of Medicine

### Ching-Long Lin, PhD

Professor, Chair  
Department of Mechanical Engineering

### Jessica C. Sieren, PhD

Assistant Professor of Radiology  
Advanced Pulmonary Physiomic  
Imaging Laboratory  
Assistant Professor of Biomedical Engineering (BME)

### Emma Stapleton, PhD

Postdoctoral Fellow  
Department of Occupational and  
Environmental Health  
College of Public Health

### Peter S. Thorne, MS, PhD

Professor and Head  
Department of Occupational and  
Environmental Health  
College of Public Health  
Director  
Environmental Health Sciences Research Center

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## Planning Committee

**Changhyun Lee, MD, PhD**, *Course Director*

**Peter S. Thorne, MS, PhD**

**Eric A. Hoffman, PhD**

**Alejandro P. Comellas, MD**

**Archana T. Laroia, MD**

**Jiwoong Choi, PhD**

Print clearly

Name

Address

City

Degree(s)

State/ Zip

Business

Home

Specialty

Phone



E-mail

Affiliation

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Registration is free. Please register online by June 28, 2019. Registration will close at this time and walk-in registration will not be available the day of the symposium. Lunch and souvenirs will be provided to those who pre-register online.

TWO WAYS TO REGISTER

-  Online: [medicine.uiowa.edu/cme](http://medicine.uiowa.edu/cme) and click on Upcoming Programs
-  University of Iowa Carver College of Medicine  
Continuing Medical Education Division  
100 Medicine Administration Building  
Iowa City, Iowa 52242-1101

Determination of educational content for this program and the selection of speakers are responsibilities of the program director. Firms providing financial support did not have input in these areas.

DISCLOSURE POLICY: Everyone in a position to control the content of this educational activity will disclose to the CME provider and to attendees all relevant financial relationships with any ACCME-defined commercial interest.

The University of Iowa prohibits discrimination in employment, educational programs, and activities on the basis of race, creed, color, religion, national origin, age, sex, pregnancy, disability, genetic information, status as a U.S. veteran, service in the U.S. military, sexual orientation, gender identity, associational preferences, or any other classification that deprives the person of consideration as an individual. The university also affirms its commitment to providing equal opportunities and equal access to university facilities. For additional information on nondiscrimination policies, contact the Director, Office of Equal Opportunity and Diversity, the University of Iowa, 202 Jessup Hall, Iowa City, IA, 52242-1316, 319-335-0705 (voice), 319-335-0697 (TDD), [diversity@uiowa.edu](mailto:diversity@uiowa.edu).

Individuals with disabilities are encouraged to attend all University of Iowa sponsored events. If you are a person with a disability who requires an accommodation in order to participate in this program, please contact the Continuing Medical Education Division in advance at 319-335-8599.

The University of Iowa requests this information for the purpose of processing your registration. No persons outside the University of Iowa are routinely provided this information.

For additional information on this program and other upcoming CME events at the UI Carver College of Medicine, please visit [medicine.uiowa.edu/cme](http://medicine.uiowa.edu/cme).