

Research Focal Areas of Department

Air pollution and health effects in rural and urban populations of rapidly developing countries

Populations in rapidly developing countries face an enormous health burden from air pollution on account of high and often extreme exposures to emissions from a variety of sources in the household, ambient and occupational environments. The EHE team has led large scale exposure measurement exercises across multiple states in India as well as assisted in scoping exposure assessment methods in many Asian countries to specifically address the heterogeneity and complexity of air pollution exposure profiles experienced by both rural and urban populations. Collectively, these studies have generated an expansive base of exposure information informing both regional and global efforts to estimate health effects of air pollution and disease burdens. They have also informed intervention efforts related to household air pollution from cook-fuels in rural communities.

Assessing neuro-behavioral impacts of lead in children in India

Despite the phase out leaded gasoline in the late 1990s, exposures to lead continue to pose health risks for children in India. The EHE team has been involved in a long-term collaboration with investigators at Harvard University to profile the exposures in children as well as assess associated neuro-behavioural impacts and the role of gene-polymorphisms in effect modification. These studies provide some of the first continuous exposure-response relationships for lead and neuro-behaviour in India.

Climate change, heat stress and worker productivity

Occupational heat stress is rapidly becoming a major concern for worker productivity in the face of climate change. The EHE team is mapping vulnerabilities for impacts of heat stress on workers across multiple industry sectors.

Developing academic and research infra-structure for environmental and occupational health in India

The department has been involved with a network of more than 50 national and international organizations for research and training collaborations, the most notable amongst them being the collaboration with UC Berkeley under support from ITREOH program of The Fogarty International Center and the International Integrated Experts Program of the GTZ. The department also provides routine occupational safety and health consultancy services to a wide spectrum of industries.

Why to Study Environmental Health Science

- According to WHO estimate in 2012, 12.6 million people died as a result of living or working in an unhealthy environment.
- Deaths due to non-communicable diseases such as air pollution amount to as much as 8.2 million.
- The deaths of 1.7 million children under 5 and 4.9 million adults aged 50 to 75 could be prevented through better environmental management.
- Ever increasing research data and awareness about hazardous nature of Pollution and tougher laws to have a cleaner environment is expected to drive demand for environmental scientists and specialists.
- Rapidly developing countries including India bear a large proportion of this burden but yet lack capacities to recognize, assess and manage environmental hazards.

Skilled human resources are scarce in the area of environmental health affording graduates in this discipline numerous opportunities to pursue a career of their choice.

CAREER OPPORTUNITIES

Universities and Research Laboratories, Public and Private Sector Organisations, Industries, NGOs and International Organizations engaged with research, training and services in the areas of

- Environmental health and safety
- Environmental epidemiology and disease surveillance
- Environmental management
- Environmental conservation
- Environmental risk assessment
- Environmental chemistry
- Environmental toxicology

Contact Information

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SRI RAMACHANDRA

INSTITUTE OF HIGHER EDUCATION AND RESEARCH
(DEEMED TO BE UNIVERSITY)
ACCREDITED BY NAAC WITH 'A' GRADE & GRADED BY UGC
AS CATEGORY I UNIVERSITY

Bachelor of Science (Hons)
In
Environmental Health Sciences
(Full time-4 Years)
2018-2019

DEPARTMENT OF ENVIRONMENTAL
HEALTH ENGINEERING,
FACULTY OF PUBLIC HEALTH

A WORLD HEALTH ORGANIZATION
COLLABORATING CENTER
FOR OCCUPATIONAL & ENVIRONMENTAL HEALTH
AND
SRU-ICMR CENTER FOR ADVANCED RESEARCH ON
AIR QUALITY, CLIMATE AND HEALTH



About the Department



WHO Global Network of CCs in Occupational Health www.who.int/occupational_health

The Department of Environmental Health Engineering, Sri Ramachandra Medical College and Research Institute (Deemed to be University) was set up, as a part of the Basic Science Research Wing of the university, in 1998 with the aid of financial assistance provided by the United Nations Industrial Development Organization. The department originally set up to provide occupational safety and industrial hygiene monitoring services to the leather/tanning industry in Tamil Nadu, has since then expanded to various types of industry sectors. The main emphases of our research programs include air pollution and health risk assessments, occupational hygiene and health, and policies related to environmental health. The department also offers post-graduate academic programs including the Master of Public Health, Master of Science in Industrial Hygiene and Safety and other short term training activities that cover a broad spectrum of occupational and environmental health

EHE-SRU joined the ranks of WHO Collaborating Centers in 2007. Being one of only 3 such centers in the South East Asia region, the center is a leading contributor to research and training in recognition, evaluation and management of environmental and occupational health risks.

In 2016, **Indian Council for Medical Research** extended the recognition as **Center for Advanced Research on Air Quality, Climate and Health.**

The team has contributed to several national and international technical assessments concerned with air quality including the Global Burden of Disease and Comparative Risk Assessments (GBD 2000, GBD 2010, GBD 2013); The IARC Monographs for household (2006) and ambient air pollution (2013); The Global Energy Assessment (2009); and the World Health Organization Air Quality Guidelines for ambient (2006) and household air pollution (2014). The team has also published more than 150 peer-reviewed articles in high impact journals.

With collaborators in over 100 national and international organizations, SRU's mission in this arena strives to drive the scientific evidence for effective and efficient public health policies.

INTRODUCTION

Environmental health sciences program focuses on human health that is linked to the interaction between living organism and environmental conditions. This field involves an in depth look into the hazardous and common components of the environment that can cause the rapid spread of illness, diseases, or even injuries. The exponential growth in human development ultimately ends up with exploitations of natural resources after meeting the human demands. Subsequently, this leads to severe degradation of the environment, endanger of life of plants and animals, changes in landscape and climate, depletion of essential resources such as water and food. Environmental health sciences are linked with biological, non- biological, physical, social and technological features integrating multiple disciplines. According to the international organization, Environmental health discipline is often considered to be focusing on disease prevention. With no further knowledge on science interface with other disciplines, there cannot be a complete understanding of the subject. There is a strong need to train students in these core areas. Graduates of this course can work to preserve nature and improve the quality of environment fostering both the people and environment for sustainable growth. This program lays strong foundation to the students for preparing themselves as leaders in environmental health sciences.

PROGRAM STRUCTURE

The duration of B.Sc. (Hons) Environmental Health Sciences program shall be Four Years (3 academic years comprising six semesters and 1 year of exclusive training in various laboratories).

PROGRAM OUTLINE

B.Sc. (Hons) Environmental Health Sciences (BEHS) provides a profound theoretical and practical knowledge in air quality, water quality, food quality, ecology, environmental health and chemistry, basic physics, microbiology, biochemistry, public health, atmospheric chemistry, interaction of human physiology and body systems with environmental exposures, toxicology and diseases, social and human behavior, environmental management systems, legislation and standards pertaining to environmental health. Foundation teaching will be covered in the first three years and beginning of year four, the students will start their laboratory/field rotations. The students will be rotated to laboratories, governmental

and nongovernmental organization for gaining practical training on water quality, air quality and food quality testing procedures, essentials of maintaining the toxicity testing laboratories, environmental conservation and disease surveillance. During the field or laboratory rotation, the students will be offered hands-on experience on using modern equipment and techniques to analyze physical and biological parameters.

PROGRAM ELIGIBILITY

A candidate desiring to join the four year program leading to the B.Sc. (Hons) Environmental Health Sciences Degree should have passed the HSC/CBSE/ISC or equivalent examination with one of the following subject combinations: i) Physics, Chemistry, Biology and Mathematics (or) (ii) Physics, Chemistry, Botany and Zoology.

COURSE FEES AND ADMISSION

The tuition fee per academic year is Rs. 100,000/- **The program will commence normally from 2nd week of June of the academic year.**

FACILITIES AND RESEARCH ACTIVITIES IN THE DEPARTMENT

