

## Research Focal Areas of the 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 the health effects of air pollution and disease burdens. They have also informed the 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 phasing out of 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 industrial 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 the 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 estimates, 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 the hazardous nature of pollution and tougher laws to have a cleaner environment is expected to drive the 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.

### **FACILITIES AND RESEARCH ACTIVITIES OF THE DEPARTMENT**



#### **CONTACT INFORMATION**

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## SRI RAMACHANDRA

INSTITUTE OF HIGHER EDUCATION AND RESEARCH  
(Deemed to be University)  
PORUR, CHENNAI - 600 116

Accredited by NAAC (cycle-2) with 'A' Grade  
(CGPA of 3.62 on a 4-point scale) & Graded by  
UGC as Category I University

**Bachelor of Science (Hons)**  
in  
**Environmental Health Sciences**  
(Full time-4 Years)

**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 SRI RAMACHANDRA

Sri Ramachandra Institute of Higher Education and Research (Deemed to be University) was established by Sri Ramachandra Educational and Health Trust in the year 1985 as a private not-for-profit self-financing institution and dedicated to serve the society as a centre of excellence with emphasis on medical education, research and health care. Over three decades, the institute has transformed into a full-fledged Deemed to be University with 11 Constituent Colleges offering 114 UG and PG programs in health care sciences. The university is spread over 150 acres, with a refreshingly green campus. The university is awarded with several national and international accreditations, few of which are below.

- Graded by UGC as **Category I University in June 2018** for maintaining consistently high academic standards, among the 11 deemed Universities that have been granted such status in the whole of India.
- Accredited by NAAC (cycle-2) with **"A" Grade** (CGPA of **3.62** on a **4-point scale**).
- The University has achieved the distinction of being placed at the **40<sup>th</sup> rank among all Universities in India by the MHRD NIRF Ranking 2018**.
- **Ranked 3<sup>rd</sup> among category** of Technical Institutions by **MHRD SWACHHTA RANKING 2017** of Higher Educational Institutions, for maintaining a clean, hygienic and green campus.

## FACULTY OF PUBLIC HEALTH



WHO Global Network of CCs in Occupational Health  
[www.who.int/occupational\\_health](http://www.who.int/occupational_health)

The Department of Environmental Health Engineering, Faculty of public Health, Sri Ramachandra Institute of Higher Education and Research (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 (UNIDO). 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 include Academic, Research and Training in this area.

- The Department serves as a **World Health Organisation Collaborating Center. 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.

- The department is recognised as a **Center For Advanced Research for Research on Air Quality, Climate and Health by the Indian Council of Medical Research, Govt. Of India**.
- The main emphases of our research programs include **air pollution and health risk assessments, occupational hygiene and health, and policies related to environmental health**.
- With more than 2 decades of experience in global environmental health research, students can expect to receive world class training within and outside the classroom that will include opportunities for research, and industrial rotations.
- The faculty collaboration spans across more than 50 national and international institutions.

## INTRODUCTION ABOUT THE B.Sc. (Hons) IN ENVIRONMENTAL HEALTH SCIENCES PROGRAM

- 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).
- It 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 behaviour, 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 research and laboratory/field rotations.
- Main strength of this UG Program in Environmental Health Sciences is the wide variety of topics covered which provides the student broader area of relevant knowledge. It also provides the student with adequate qualifications across a number of fields, to aid more scope for higher education/employment upon completing the course.

## PROFESSIONAL TRAINING

- The students will be rotated to laboratories, governmental and non-governmental organizations for gaining practical training to facilitate learning by observation and practice.
- The training covers the requirement aspects of the accrediting body, which will increase the scope of employment opportunities.
- It is designed to allow the student to undertake supervised environmental health professional training, thus developing their practical, professional and employability skills.

## PROGRAM ELIGIBILITY

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

## ELIGIBILITY FOR HIGHER STUDIES IN INDIA AND ABROAD:

The B.Sc. (Hons) in Environmental Health Sciences Program is eligible for pursuing the following higher studies in India and abroad. The student while going for higher studies shall choose to specialize in

- Environmental Sciences
- Public Health
- Molecular Biology
- Other Life Science Programs
- Biotechnology
- Bioinformatics
- Human Genetics

## CAREER/ PLACEMENT OPPORTUNITIES

- Colleges and Universities  
(Higher Studies/Research Project Assistant)
- Industries – For example distilleries, fertilizer plants, mines, refineries, textile mills etc  
&  
Environmental Testing Laboratories  
[Technician/Analyst in Good Laboratory Practice (GLP), Water, Air and Food quality Testing]
- Research and Development  
&  
Non-Government Organisation (NGOs)  
(Project/Research/Field Technician & Laboratory Technologist)
- Toxicity Testing Laboratories  
(Environmental/Toxicological risk assessment /GLP analyst)
- Private Sector-Waste Management  
(Manager/Coordinator/ Technologist)
- Environmental Consulting Organizations  
(Environmental Risk/ Impact Assessment/ Management specialist)
- Environment and Health Department  
(Health and Environment promotion staff)

## COURSE FEE

The tuition fee per academic year is Rs.75,000/-

## DATE OF ADMISSION

Advertisement for admission will be published in the leading Newspaper as well as in the University Website during the month of April and the classes will commence normally from 2<sup>nd</sup> week of June of the academic year.