Epidemiological Research Methods and Analysis
19-24 February 2018

Host Institute

Population Research Centre
Department of General and Applied Geography
Dr. Harisingh Gour Vishwavidyalaya
(A Central University)
Sagar- 470003, MP, India

Expert Faculty

Agnihotram V. Ramanakumar, M.Sc., M.A., MPS, Ph.D
Department of Oncology, McGill University, Canada
Research Institute, McGill University Health Center, Canada
Global Solutions for Research and Analytics, Inc., Canada

Course Coordinator

Reena Basu, M.A., MPS, Ph.D
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**SCOPE OF THE PROGRAMME**

Global Initiative of Academic Networks (GIAN) is a program launched by Ministry of Human Resource Development (MHRD), Government of India with the objective of tapping the talent pool of international scientists, researchers, entrepreneurs to encourage their engagement with higher education institutions in India.

In that context, a one week course on “Epidemiological Research Methods and Analysis” has been approved by Ministry of Human Resources Development (MHRD). This course will be organized by the Population Research Centre (Ministry of Health and Family Welfare Government of India), Department of General and Applied Geography, Dr. Harisingh Gour Vishwavidyalaya, Sagar.

**ABOUT THE COURSE**

Epidemiology is a science of understanding the distribution and causes of human disease and health effects, and the presentation of methods to improve human health. Recently, there is extraordinary progress in understanding human biology and significant environmental causes of diseases. At the same time, epidemiological research has expanded its tools to accommodate advances in human/molecular biology and genetics to understand the progressive of disease and their interaction with environmental causes and genetic factors. Modern epidemiology methods should provide a remarkable opportunity for monitoring the occurrence of disease and temporal trends in risk factors, social policies, and medical practices that affect disease. On the other hand, regulatory bodies, ethics review boards, funding agencies, and medical journals audit the strict requirements of these methods on various aspects of research such as unbiased design, appropriate patient recruitment process, and analytical strategies etc. This course provides basic approaches and tools according to the changing landscape of clinical studies as discussed above. It will also enhance the skills of the future researchers towards their career development.

**EXTERNAL FACULTY**

**Dr. Agnihotram V. Ramanakumar** is an accomplished healthcare researcher with doctoral training in Population Sciences and Post-doctoral training in Environmental Epidemiology from the University of Montreal, Canada. He worked with premier institutions such as The World Health Organization, McGill University, RI-MUHC, and Analysis Group, a consulting company. He has extensive expertise in designing and conducting epidemiological and clinical studies with advanced research methods. Most of the publications of Dr. Agnihotram are specific to cancer research, but his research expertise applies to other disciplines such as demography, health economics, bio-statistical methods and clinical trials (all phases). He continuously teaches and supervises the research projects, clinical fellows and trainees in the graduate training programs of Oncology, Nursing, Gynecological departments of McGill University and its affiliated institutes. He also provides bio-statistical and research consultancies to top 10 global pharma and biotech companies and health researchers. He continuously supervises graduate students and research staff; managed several projects in structuring, standardizing and streamlining scientific and budgetary matters. Dr. Agnihotram has published more than 100 research papers in reputed international journals and he is a reviewer for more than 20 research journals. He has traveled and worked closely with various cancer registries in several countries across the globe.

**Course Coordinator**

**Dr. Reena Basu** is presently working as Assistant Director in Population Research Centre, Dr. Harisingh Gour Vishwavidyalaya, Sagar. Dr. Basu has a Ph.D. degree in Social Experimental Psychology as well as Master’s in Population Science from International Institute for Population Sciences, Mumbai. Dr. Basu's areas of interest are Research Methodology, Programme Management and Evaluation, Public Health, Population and Development, Maternal and Child Health and Women's Issues. Dr. Basu has been actively involved in a number of research evaluations for Ministry of Health and Family Welfare and has contributed to 100 research studies so far. She is currently undertaking the Quality Monitoring of Programme Implementation Plan under National Health Mission and is monitoring the quality of Health Management Information System data and Mother and
Child Tracking System. Dr. Basu is also involved in teaching activities in the university courses on population, adolescent health and family life counseling. She has presented many research papers in international as well as national seminars, conferences and workshops and has to her credit several research papers published in international and national journals of repute, monographs and edited volumes.

**WHO CAN PARTICIPATE**

Students, researchers, doctoral, post-doctoral trainees, faculty from institutes, universities, pharma, biotech industry professionals. The course is exclusively designed for the benefit of healthcare researchers, clinical and allied sciences such as nutrition, biostatistics, microbiology, bio-technology, demography and social science researchers. Besides students, researchers, faculty members. Public health and government professionals can also attend this course.

**COURSE SCHEDULE**

**February 19, 2018**

| Lecture 1 | Fundamentals of epidemiological research, overview, and concepts. |
| Lecture 2 | Epidemiological study designs, observational, case-control studies. |
| Tutorial 1 | Examples studies, review the best research in the literature |

**February 20, 2018**

| Lecture 3 | Overview of cohort, retrospective, prospective designs. |
| Lecture 4 | Randomized clinical trials (RCT), Phase I-IV; their relevance; problems. |
| Tutorial 2 | Examples of the cohort, RCT studies, review of some of best studies. |

**February 21, 2018**

| Lecture 5 | Understanding the strengths and limitation of various designs. |
| Lecture 6 | Ethics, conduct, and management issues in epidemiological research |
| Tutorial 3 | Practical issues, new research ideas |

**February 22, 2018**

| Lecture 7 | Identifying sources of bias, confounding and effect modification. |
| Lecture 8 | Analyses strategies using latest multivariate techniques (GEE, GLIM, etc.). |
| Tutorial 4 | Context of study and failure in epidemiological research |

**February 23, 2018**

| Lecture 9 | Important aspects of epidemiological research/study proposal |
| Lecture 10 | Important aspects of epidemiological reports (or) research paper |
| Tutorial 5 | Discussion on future plans and possibilities for collaborations: Developing research study/proposals in new epidemiological areas |
| Evaluation | Evaluation of participants |

**February 24, 2018**

| Valedictory | Valedictory and certificate distribution |

**REGISTRATION**

The interested participants have to follow two-stage processes for registration. In the first stage, they are required to register online at GIAN portal- [http://www.gianitgkp.ac.in](http://www.gianitgkp.ac.in). They have to follow the instructions on the “course registration portal” and submit login details with brief academic achievements along with registration fee, which has to be paid online for one-time registration at GIAN portal. Participants then need to select this course “Epidemiological Research Methods and Analysis” from the list. In the second stage, the participants have to submit their registration form available at [http://www.dhsgsu.ac.in](http://www.dhsgsu.ac.in) by clicking latest updates link to the university. The completed registration form along with course registration fee can be sent to the course coordinator before February 15, 2018.
The demand draft should be drawn in favor of “The Registrar, Dr. Harisingh Gour Vishwavidyalaya, Sagar, M.P.” payable at Sagar.

**Registration Fee:**
- Students/Research Scholars: INR 800/-
- Students/Research Scholars (SC/ST): INR 400/-
- Faculty/Scientist: INR 1500/-
- Government officials/ Industry Member: INR 2500/-
- Foreign participants: US$ 200/-

(Notes: Registration fee includes instructional material only. SC=Scheduled Castes, ST= Scheduled Tribe)

**ACCOMMODATION**
Outstation participants would be provided modest accommodation on payment basis. Please contact course coordinator for further details.

**HOW TO REACH**
Sagar is a divisional headquarter, well connected by rail and roads. Sagar railway station is mentioned as Saugor (SGO) in railway timetable. Sagar station is located in Bina-Katni section of west-central Railway. There is direct train connectivity for Delhi, Mumbai, and Kolkata. Sagar is also connected with excellent road from Bhopal (190 Km), Jabalpur (185 Km), Jhansi (200 Km) and Bina (75 Km). The nearest Airport is Bhopal (200 Km).

**VENUE OF THE PROGRAMME**
Human Resource Development Centre (HRDC), Dr. Harisingh Gour Vishwavidyalaya (A Central University), Sagar, Madhya Pradesh, India.

**LOCAL FACULTY**

Prof. Diwakar Shukla, Department of Mathematics and Statistics  
Dr. Nikhilesh Parchure, Population Research Centre

**PATRON**
Prof. R. P. Tiwari  
*Vice Chancellor*, Dr. Harisingh Gour Vishwavidyalaya, Sagar, India

Prof. R. P. Mishra  
*Director, Population Research Centre*  
*Dean, School of Applied Sciences*, Dr. Harisingh Gour Vishwavidyalaya, Sagar

Dr. Reena Basu  
*Course Coordinator*  
*Assistant Director, Population Research Centre*, Dr. Harisingh Gour Vishwavidyalaya, Sagar

**ADVISORS:**
- Prof. R. A. Singh, *Director*, Academic Affairs, Dr. Harisingh Gour Vishwavidyalaya, Sagar
- Prof. Archna Pandey, *Director* Faculty Affairs, Dr. Harisingh Gour Vishwavidyalaya, Sagar
- Prof. H. Thomas, *Director*, Research & Development, Dr. Harisingh Gour Vishwavidyalaya, Sagar
- Prof. Nivedita Maitra, *Registrar*, Dr. Harisingh Gour Vishwavidyalaya, Sagar
- Prof. C. K. Jain, *Head*, Department of General and Applied Geography, Dr. Harisingh Gour Vishwavidyalaya, Sagar

**LOCAL COORDINATOR (GIAN):**
Prof. Devashish Bose, *Head*, Department of Criminology and Forensic Science, Dr. Harisingh Gour Vishwavidyalaya, Sagar

**PROGRAMME ASSOCIATE:**
Dr. Jyoti Tiwari, Dr. Niklesh Kumar, Dr. Kumar Raghbansh Mani Singh