



2024

CNIW Supernova Research-oriented Summer Camp Program

July 2nd – August 24th, 2024

96 Scarsdale Rd, North York, M3B 2R7



Summer Camp Committee
Education Division
Centre for new Immigrant Well-Being

Summer Camp Objectives

- ✓ Gain research knowledge and experiences from top university researcher and educators
- ✓ Horn research skills and soft skills for successful academic and career planning in advance

Summer Camp Format

The summer camp contains the following components:

- 1) Seven-session lecture-based Bootcamp,
- 2) A series of development seminars,
- 3) Two field trips to Medical Imaging Centre and University Biology Lab,
- 4) A student-led Mini Medical School Lectures discussion club,
- 5) A two-month research projects involvement that exposes young students to fundamental concepts and research skills and guides them to get involved in a socially impactful research project.

Taught by a team of top university researchers and educators, all the students receive a personalized learning experience in small group and group mentorship with research project involvement.

Unlock Your Potential: What You Will Gain

- ✓ Personalized Instruction on Research Skills
- ✓ Collaborative Learning Opportunities
- ✓ Real Life Research Projects Involvement
- ✓ Academic and Career Planning
- ✓ Soft Skills Improvement

Upon completion, you will also get a personalized evaluation, the certificate of completion, letters of recommendation, and opportunities for further research positions.

Summer Camp Teaching Team

Lecturers Team:



Dr. Peizhong Peter Wang, MD, MPH, and PhD in Epidemiology, is a tenured professor (Epidemiology) in the Division of Population Health and Applied Health Sciences, Faculty of Medicine, Memorial University of Newfoundland (MUN), Professor (status only) at DLSPH, University of Toronto, a senior scientist at Beatrice Hunter Cancer Research Institute, and the Founding Director, Centre for New Immigrants Wellbeing (CNIW). Dr. Wang graduated from Tianjin Medical University, China, and received his PhD in Epidemiology from the Dalla Lana School of Public Health, University of Toronto. Dr. Wang has extensive research experience with broad interests including cancer epidemiology, arthritis and disability, immigrant health and quality of life, aging, health surveys, and epidemiological modeling.



Dr. Lu Wang is Professor in the Department of Geography and Environmental Studies at Toronto Metropolitan University, Toronto, Ontario. Her research areas include: immigrant health and healthcare; transnational healthcare practice; COVID-19, spatial mobility and risk perception; ageing; access to care among older immigrants; and ethnic retailing. Her methodological expertise includes Geographic Information Systems (GIS) and spatial analysis, statistical modeling, and mixed-method approaches combining qualitative and spatial-quantitative methods. Dr. Wang's community-based research has been primarily funded by SSHRC Insight Grant (PI), CIHR Operating Grant / COVID-19 Rapid Response (PI), CIHR Planning and Dissemination Grant (PI), and the RBC Immigrant, Diversity and Inclusion Project (PI).



Dr. Xiao Han is University of Toronto Lecturer. She has been serving as an executive director of the Toronto Environmental Alliance, participating in the TRCA Council and public hearings, and joining the Natural Science and Education Committee. Dr. Han organized numerous youth development programs and public health awareness events. She also planned and organized several large-scale charity events to raise fund for Sickkids hospital in supporting children's medical services and research. She has also contributed to cultural and artistic activities to build community resilience and empathy.

Summer Camp Teaching Team

Lecturers Team Continued:



Ms. Fangli Xie has nearly 20 years of experience working as an epidemiologist in Ontario's public health sector. She graduated from West China University of Medical Sciences (Now West China Medical Center, Sichuan University) and later received a MPH degree from University of Toronto. Mrs. Xie has extensive experience in program evaluation, public health surveillance, and health research. She is passionate about applying these skills to real-world public health issues and looks forward to sharing her expertise and experience with students of the summer research camp.



Ms. Theresa Vo is currently pursuing a doctorate at Memorial University of Newfoundland under Prof. Wang's supervision. She has a keen interest in presenting complex statistical ideas in an accessible and interesting manner. With a solid background in health research, she specializes in health surveys, concentrating on innovative approaches to enhance understanding of the healthcare system and address issues encountered by Chinese immigrant communities in Canada. She has participated in several research initiatives and has published work in well-known journals, utilizing advanced statistical methods for analyzing and interpreting health-related data.

Research Supervisor and Teaching Assistant Team:



Ms. Jin Wang, RTCMP, RAC, is a Registered Traditional Chinese Medicine Practitioner and Acupuncturist in Ontario. She is currently working at the Integrative Cancer Centre in the Canadian College of Naturopathic Medicine, providing individualized and holistic care plans to patients in all stages of cancer, from prevention through conventional treatment to survivorship and palliative care. She also helps patients with fertility and gynecology-related concerns, as well as post-surgery rehabilitation. Aside from being a clinician and educator in the field of traditional Chinese medicine, Ms. Wang has a background in Neuroscience and Nutritional Science at the University of Toronto. Throughout her journey of medicine, she has worked in the areas of family medicine, general surgery, and clinical nutrition from community healthcare centers to hospitals and research institutions.

Summer Camp Teaching Team

Research Supervisor and Teaching Assistant Team:



Ms. Nan Lei holds a Master's degree in the Community Health from Memorial University of Newfoundland. Her research was focusing on the issues of discrimination among Chinese Canadians/Immigrants and its mental health impacts during the Covid-19 pandemic, utilizing survey data. Ms. Lei's academic background includes a B.S. in Pharmaceutical Science from the Peking University Health Science Center in Beijing, China, and a MSc in Nutrition Science from the University of Nottingham, UK. Before attending MUN, Ms. Lei gained valuable experience as a medical editor for nine years, which fostered her deep interest in the field of healthcare and medical knowledge mobilization.



Ms. Suky Zheng is a 4th year Biochemistry & Biomedical Sciences student at McMaster University, currently working as a research co-op student at the Ontario Institute for Cancer Research. Her research experience spans across multiple disciplines in the life sciences, health sciences, epidemiology, and clinical research. Previously, she was a clinical research student with UHN at Toronto Western Hospital, and she has attended and presented her research work at national and international conferences. She has been teaching and leading the CNIW Summer Research Camp for the past two years and will be back again this year as a Teaching Assistant.



Ms. Arianna Ding is going into her third year at UofT in the Health and Disease program. This is her second year working for CNIW as both Research Support Officer and Summer Camp Teaching Assistant. Before joining CNIW, Arianna worked as a part-time research assistant at Stony Brook Renaissance School of Medicine and her main responsibilities included co-authoring a manuscript on the potential therapeutic application of local anesthetics in cancer surgeries, conducting literature search and summarizing findings on the effect of anesthesia on cancer cells, reviewing and participating in scientific literature reading, analysis, and lab discussions.

Course Evaluation Scheme

The evaluation system is designed according to the objectives of the course. Students' understanding of the concepts and analytical tools is evaluated by four assignments, mini medical school courses discussion and final presentation. Grades will be based on the weighted average of all the assignments and presentation. Weights are as follows:

<u>Component</u>	<u>Due Date(s)</u>	<u>Percent of Final Grade</u>
Assignment 1	July 15	10
Assignment 2	July 22	10
Assignment 3	July 29	10
Mini Med discussions	August 15	20
Final Presentation	August 24	30

Evaluation Criteria:

The primary criteria used in evaluating written work will be:

1) **Mechanics:** Your work must be completely free of grammatical errors, spelling errors or major factual errors. References can be in any style but the same format must be used consistently and they must be accurate.

2) **Writing style:** Your papers should be written in a clear and unambiguous style which assists, rather than impedes, communication with the reader.

3) **Structure:** Your written work should have a clear focus, provided by the research question, and a structure which logically flows from that focus.

Course Evaluation Scheme

Evaluation Criteria - Continued:

4) ***Precision and accuracy:*** Precision means saying exactly and specifically what you mean, avoiding ambiguity and vague generalities. Accuracy refers to absence of major factual errors.

5) ***Analysis:*** Your analysis should display understanding of the topic and based on that understanding, originality of thought.

All written assignments are to be submitted through email. And TAs are responsible to mark your work. Questions related to the assignments should contact TA directly by email for help.

Additional Notes on late submission

Each day of late submission of assignments will fetch a penalty of 5% of the total marks of the assignment for first two days; thereafter, penalty will be increased to 10% each day of late submission. If, due to unavoidable circumstances, an extension is required, it must be sought before due date of assignment, please contact the instructor.

Seven-Session Lectures Syllabus

Session 1

Introduction to Public Health

Date Time: Friday, July 2nd, 2024, 18:30 – 21:30 EST

Professor: Dr. Peizhong Wang

Hybrid, In-person Location: 96 Scarsdale Rd, North York, M3B 2R7

ZOOM ID: 907 459 1435, **Passcode:** 168168

Course Description:

This mini course provides an overview of public health, focusing on the key principles, concepts, and practices involved in promoting and protecting the health of communities. Students will explore various aspects of public health, including disease prevention, health promotion, environmental health, and healthcare systems.

Topics Covered

1. Introduction to Public Health
2. History and Evolution of Public Health
3. Determinants of Health
4. Disease Prevention and Control
5. Health Promotion and Education
6. Global Health Issues
7. Healthcare Systems and Policy
8. Public Health Ethics
9. Careers in Public Health

Learning Objectives

By the end of this mini course, students will be able to:

1. Understand the concept and importance of public health.

Session 1

Introduction to Public Health

Learning Objectives - Continued

2. Describe the key determinants of health and their impact on population health.
3. Explain the principles and strategies of disease prevention and control.
4. Identify the role of health promotion and education in improving community health.
5. Discuss global health issues and their implications for population well-being.
6. Understand the basics of healthcare systems and policy.
7. Recognize ethical considerations in public health practice.
8. Explore potential career paths in the field of public health.

Session 2

Literature Review and Case Study

Date Time: Thursday, July 4th, 2024, 18:30 – 21:30 EST

Professor: Dr. Lu Wang

Hybrid, In-person Location: 96 Scarsdale Rd, North York, M3B 2R7

ZOOM ID: 907 459 1435, **Passcode:** 168168

Course Description:

This mini course provides an overview of how to properly and effectively conduct comprehensive searches of the literature in steps, and how to write a literature review; We will also provide students some basic operation of the Endnote for Knowledge Syntheses.

Topics Covered

1. From Research questions to search strategy
2. Having a search framework and Familiarizing where to search
3. Learning types of Literature reviews
4. Evaluating sources and critical appraisal of literature
5. Managing your literature with Endnote
6. Case Study: Older Immigrants' Access to Primary Health Care in Canada: A scoping Review

Learning Objectives

By the end of this mini course, students will be able to:

1. Develop search strategy
2. Get familiarized to Health Science Database such as the PubMed
3. Learn basic operation of the best citation management software
4. Learn different ways to organize the literature review

Session 3

What is Academic Research and How to Identify Research Topics

Date Time: Monday, July 5th, 2024, 18:30 – 21:30 EST

Professor: Dr. Peizhong Wang

Hybrid, In-person Location: 96 Scarsdale Rd, North York, M3B 2R7

ZOOM ID: 907 459 1435, **Passcode:** 168168

Course Description:

This mini course aims to familiarize students with academic research and the process of identifying research topics. Students will learn about the characteristics of academic research, explore different sources for identifying research topics, and develop skills to critically evaluate research ideas and formulate their own research questions.

Topics Covered

1. Understanding Academic Research
2. Characteristics of Academic Research
3. The Research Process
4. Exploring Research Sources
5. Evaluating Research Ideas
6. Formulating Research Questions
7. Identifying Research Gaps
8. Choosing and Refining Research Topics
9. Ethical Considerations in Research Topic Selection

Learning Objectives

By the end of this mini course, students will be able to:

Session 3

What is Academic Research and How to Identify Research Topics

Learning Objectives – Continued

1. Define academic research and its role in advancing knowledge.
2. Identify the key characteristics of academic research.
3. Understand the overall research process from idea generation to dissemination.
4. Explore various sources for identifying research topics.
5. Evaluate research ideas based on relevance, feasibility, and novelty.
6. Formulate research questions that are clear, specific, and aligned with research goals.
7. Identify research gaps in existing literature.

Session 4

Research Methodology

Date Time: Monday, July 8th, 2024, 18:30 – 21:30 EST

Professor: Dr. Peizhong Wang

Hybrid, In-person Location: 96 Scarsdale Rd, North York, M3B 2R7

ZOOM ID: 907 459 1435, **Passcode:** 168168

Course Description:

This mini course introduces students to the fundamentals of research methodology, equipping them with the necessary skills to design, conduct, and evaluate research studies. Students will learn about different research methods, data collection techniques, and ethical considerations, laying the groundwork for future research endeavors.

Topics Covered

1. Introduction to Research Methodology
2. Research Questions and Objectives
3. Research Design and Sampling
4. Quantitative Research Methods
5. Qualitative Research Methods
6. Data Collection and Analysis
7. Research Ethics and Integrity
8. Communicating Research Findings
9. Research in Practice: Examples and Case Studies

Learning Objectives

By the end of this mini course, students will be able to:

Session 4

Research Methodology

Learning Objectives – Continued

1. Define research methodology and its significance in various fields.
2. Formulate research questions and objectives.
3. Understand different research designs and sampling techniques.
4. Differentiate between quantitative and qualitative research methods.
5. Apply appropriate data collection and analysis techniques.
6. Discuss ethical considerations in research and maintain research integrity.
7. Present and communicate research findings effectively.
8. Explore real-life examples and case studies to understand research in practice.

Session 5

Introduction to Biostatistics and Data Analysis

Date Time: Tuesday, July 9th, 2024, 18:30 – 21:30 EST

Professor: Ms. Theresa Vo

ONLINE ONLY, ZOOM ID: 907 459 1435, **Passcode:** 168168

Course Description:

This mini course is to equip the students with basic skills that will enable them to manipulate the information – in the form of numbers – that they encounter as a health sciences professional in future. We will teach student to organize and summarize data and to teach students how to reach decisions about a body of large body of data by examining only a small part of the data. In addition, step-by-step, exercise-driven guide for students and practitioners who need to master Excel to solve practical biological and life science problems.

Topics Covered

1. Introduction to biostatistics
2. Descriptive statistics
3. Some basic probability concepts
4. Probability distributions
5. Some important sampling distributions
6. Estimation
7. Hypothesis testing
8. Analysis of Variance
9. Linear regression and correlation
10. One-Way Analysis of Variance (ANOVA) (OPTIONAL)

Session 5

Introduction to Biostatistics and Data Analysis

Learning Objectives

By the end of this mini course, students will be able to:

1. Students will gain knowledge of descriptive statistics terms and basic probability concepts and distributions
2. Students will learn the use of Microsoft excel to find mean, median, mode, standard deviation and correlation of the given data
3. Some basic concepts essential to understand hypothesis testing are presented
4. Correlation/Regression model and using the regression equations

Session 6

Survey Questionnaire Design and Data Analysis Using Excel

Date Time: Thursday, July 11th, 2024, **15:30 – 18:30 EST**

Professor: Ms. Fangli Xie

Hybrid, In-person Location: 96 Scarsdale Rd, North York, M3B 2R7

ZOOM ID: 907 459 1435, **Passcode:** 168168

Course Description:

In the field of health research, the ability to design effective questionnaires and analyze survey data is crucial. This course provides students with essential skills and knowledge to create well-structured surveys and analyze the resulting data using Excel. Through a practical example, students will learn the main steps of questionnaire design, data analysis, and graphing techniques, including how to visualize Likert scale responses.

This 3-hour course is designed for students interested in health research and survey methodology. It will cover the fundamentals of developing effective questionnaires and provide hands-on experience with Excel for data analysis and visualization.

Topics Covered

1. Principles of Questionnaire Design
2. Structuring Effective Surveys
3. Types of Survey Questions
4. Analyzing Survey Data with Excel
5. Graphing Likert Scale Responses

Session 6

Survey Questionnaire Design and Data Analysis Using Excel

Learning Objectives:

By the end of this course, students will be able to:

1. Design a simple questionnaire based on specific research questions.
2. Identify and utilize various types of survey questions.
3. Import, clean, and organize survey data in Excel.
4. Analyze survey data using Excel's tools, including basic formulas and PivotTables.
5. Create graphs to visualize survey data, specifically Likert scale responses.

Course Materials

1. Lecture slides and notes
2. Excel tutorial guides
3. Sample datasets for practice
4. [Program Evaluation Tip Sheet: Constructing Survey Questions](#)

Homework

1. Design a sample questionnaire for a hypothetical scenario
2. Analyze provided survey data using Excel and create visualizations
3. Assigned readings on advanced survey design and data analysis techniques

Session 7

Academic Presentation

Date Time: Friday, July 12th, 2024, 18:30 – 21:30 EST

Professor: Dr. Xiao Han

Hybrid, In-person Location: 96 Scarsdale Rd, North York, M3B 2R7

ZOOM ID: 907 459 1435, **Passcode:** 168168

Course Description:

This course equips students with the skills to create and deliver compelling academic presentations. Emphasizing both structure and delivery, students will learn to organize content logically, design effective visual aids, and engage diverse audiences. The course covers techniques for handling questions, managing presentation anxiety, and utilizing multimedia tools. By the end of the course, students will be adept at delivering clear, persuasive, and professional presentations in academic settings.

Topics Covered

1. Introduction to Academic Presentation
2. Planning and Structuring Your Presentation
3. Designing Effective Visual Aids
4. Engaging Your Audience
5. Delivery Techniques
6. Managing Questions and Interactions
7. Utilizing Multimedia Tools
8. Practical Application and Feedback
9. Conclusion and Next Steps

Session 7

Academic Presentation

Learning Objectives:

By the end of this course, students will be able to:

1. Structure academic presentations logically and coherently.
2. Design and utilize effective visual aids to enhance communication.
3. Engage and maintain audience interest through dynamic delivery techniques.
4. Handle audience questions confidently and professionally.
5. Manage presentation anxiety and improve public speaking skills.
6. Integrate multimedia tools to support and enrich presentations.
7. Critically evaluate and provide constructive feedback on peer presentations.
8. Present research findings and scholarly work clearly, persuasively, and professionally.

Nine-Mini Medical School

Courses

Course Name	Presenter
Antimicrobial Resistance	Dr. Peter Daley
Hip and Knee Arthritis: Nuts and Bolts of it all!	Dr. Craig Stone
End of Life Care: Palliative Care and Physician Assisted Death	Dr. Susan MacDonald
Beyond Clinical Skills: The Importance of Scholarly Pursuits in Medical Education	Dr. Nic Fairbridge
Community Hubs Update	Dr. Robert Greenwood
Cognitive Decline in the Elderly	Dr. Khalid Jat
Low Consumption And Minimalist Lifestyle: The Only Solutions for Current Planetary Health Crisis	Dr. Atanu Sarkar
Understanding Diabetes: An Approach to Live Well & Reduce the Risk of Complications	Dr. Zaina Albalawi
When Seconds Count: Recognizing the Top 5 Signs and Symptoms that Worry an Emergency Medicine Physician	Dr. Margo Wilson



1. Course Recordings and Presentation Slides are available on Google Classroom. Students need to go through the materials and select one course from the curriculum to lead a discussion on.
2. Course selection should be completed by **2nd July**.
3. Students must submit their top three course preferences in order of priority to the TA by **2nd July**.
4. The camp TA will assign courses based on preferences and availability, ensuring an even distribution of topics among students.

Two Field Trips



University of Toronto Lab visiting tour

Dr. Yan Wang, **July 15th, 9:30 – 11: 30 AM**

UTSC Campus, Building SW (Science Wing), #542

Medical Imaging Centre visiting tour

Amy Zhang, Radiologist, CRGS, RDMS, **August 13th, 9:00 – 11:00 AM**

Taigu X-ray and Ultrasound, 3447 Kennedy Rd, #223, Scarborough

Public Seminars



Date	Topic	Speaker
July 17 th , @19:30 EST	Unlocking Your Potential: Mastering Communication and Leadership Skills in medical field	Fran Paradiso-Hardy Vice President and Head of Global Medical Communications
August 3 rd , @19:30 EST	Navigating Your Path: Academic and Career Planning for MPH Graduates in Public Health	Kieran Gill, MPH Memorial University
August 18 th , @19:30 EST	Public Health Research in Contentious Times on Controversial Topics: Harm reduction, substance use and the Canadian overdose crisis.	Dr. Gillian Kolla Faculty of Medicine, Memorial University
August 24 th , @15:00 EST	Vaccination in Youth	Dr. Vivien Brown

Research Projects



2024 CNIW Research-oriented Summer Camp Students Composition Breakdown

- **Grade 10 Students:** 4
- **Grade 11 Students:** 4
- **Undergraduate Students:** 2

Students will be grouped into four research teams, each comprising one team lead, one teaching assistant (TA), and one research supervisor. Each team will be provided with a selection of research projects. The specific topics and team member assignments will depend on the course progression.

**Final Group Research
Presentation and a Written Report
August 24th, 2024 13:30 – 16:00 EST**



To culminate the research-oriented program, each research group is required to present a final academic presentation and submit a comprehensive written research report. This will demonstrate the group's findings, methodologies, and the significance of their research.

CNIW Summer Camp Organizing Committee

Co-Chair: Dr. Peizhong Wang

Co-Chair: Dr. Xiao Han

Coordinator: Ms. Helen Cao, CFA

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