

DIVISION OF CANCER PREVENTION

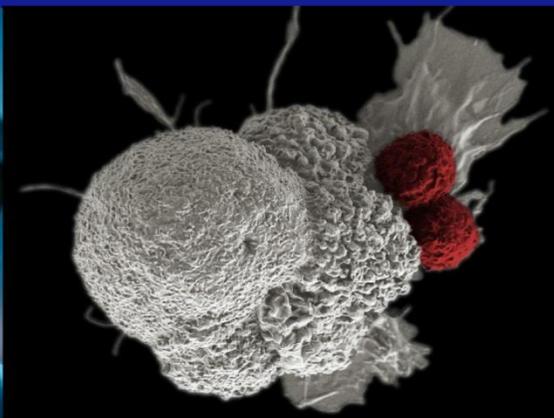
Cancer Prevention Fellowship Program

**2019 Summer Curriculum
in
Cancer Prevention**

**MOLECULAR CANCER PREVENTION
COURSE**

AUGUST 5 - 9, 2019

SYLLABUS



Molecular Cancer Prevention Course

Date: August 5 – August 9, 2019

Time: Course begins daily at 9:00 am unless noted otherwise; please arrive ~10 minutes early each day to sign in and locate a seat

Location: 6001 Executive Boulevard
Rooms C & D (main floor)
Rockville, MD 20852
Check-in/Security Desk – +1 (301) 435-1470

Course Director: Hala Azzam, PhD, MPH, CPH, CPLP
Deputy Director

Course Coordinators: Aili Ellen Evert
Brittany Gardner
Yelena Shnayder, MS (Center for Global Health - CGH)

Course presented by: Cancer Prevention Fellowship Program (CPFP)
Lisa B. Signorello, ScD, ScM
Director

CPFP Program Staff: Aili Ellen Evert
Brittany Gardner
Laticia Maldonado
Ann Maxson
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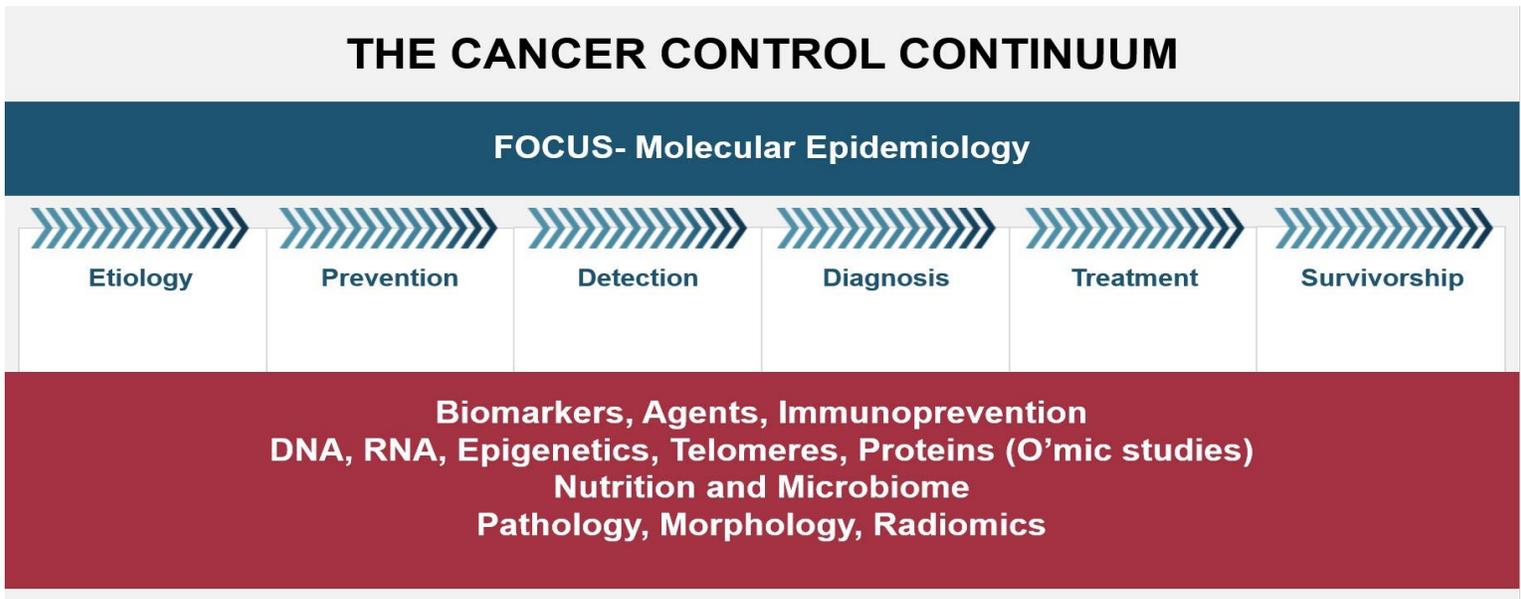
Email: NCISummerCurriculum@NIH.Gov

Website: <https://cpfp.cancer.gov/summer-curriculum>

Course Description

Overview

This one-week summer course provides an overview in the field of molecular prevention with an emphasis on cancer prevention. The course provides a background in the molecular biology and genetics of carcinogenesis and an overview of cutting-edge research and techniques in the field of molecular epidemiology, biomarkers, multi-omics and translational research. Below is an illustrative conceptual framework for the course:



A. Target Audience

Public health professionals, physicians and other healthcare professionals, research fellows, and scientists who have an interest in cancer prevention and control. A background in cancer biology is helpful, but not required. Preference is given to individuals with a doctoral degree, to those with relevant experience in cancer biology, and to those who have not previously participated in the Molecular Prevention course.

B. Overall Educational Objectives

After taking this course, participants will be able to:

1. Describe the hallmarks of carcinogenesis and illustrate aspects that are applicable to cancer prevention
2. Understand the role of pathology in characterizing tumor etiology
3. Describe the role and function of miRNAs and LncRNAs
4. Describe the role of epigenetics in cancer prevention and control
5. Discuss the role of telomeres in cancer prevention and control
6. Compare and contrast the different types of biomarkers and their use in cancer prevention and control
7. Discuss the strengths and weaknesses of multi-omic approaches

C. Homework

Please read the following articles prior to attending the course:

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4820069/>

- <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4789096/pdf/nihms-754340.pdf>

D. Resources and Reading Materials

Lecture presentations, case studies, and other reading materials will be posted on the Summer Curriculum Portal. Details will be provided to the participants prior to their arrival to the course.

Monday, August 5

8:00 am - 8:45 am	Security Check-in & Course Registration	NCI Cancer Prevention Fellowship Program (CPFP) Staff NCI Center for Global Health (CGH) Staff
9:00 am - 9:45 am	Welcoming Remarks & Course Overview: What is Molecular Cancer Prevention?	Hala Azzam, PhD, MPH, CPH, CPLP
9:45 am - 11:00 am	Molecular Basis of Carcinogenesis	Goli Samimi, PhD, MPH
11:00 am - 11:30 am	Break	
11:30 am - 12:45 pm	Principles of Pathology and Epidemiological Research: More Than Meets the Eye	Stephen Hewitt, MD, PhD
12:45 pm - 1:45 pm	Lunch	
1:45 pm - 3:00 pm	miRNAs in Mammalian Physiology and Disease	Joana Vidigal, PhD
3:00 pm - 3:40 pm	All <i>new</i> International Participants attending <i>only</i> - Molecular Course: Collection of Documents	Rhonda Robinson (CGH)
3:40 pm - 4:00 pm	CGH Funded Participants: Orientation Session	CGH and CRDF Staff

Tuesday, August 6

9:00 am - 10:15 am	NCI's Early Detection Research Network	Sudhir Srivastava, PhD, MPH
10:15 am - 10:30 am	Break	
10:30 am - 11:45 am	Applying Molecular Markers within Population-based Studies	Gretchen Gierach, PhD, MPH
11:45 am - 12:45 pm	Lunch	
12:45 pm - 1:00 pm	Break	
1:00 pm - 1:30 pm	Group Photos	

Wednesday, August 7

9:00 am - 10:15 am	Epigenetics in the Precision Medicine Era	Mukesh Verma, PhD
10:15 am - 10:30 am	Break	
10:30 am - 11:45 am	Human Microbiome and Cancer Prevention	Emily Vogtmann, PhD, MPH
11:45 am - 1:45pm	Shuttle to NIH Main Campus & Lunch	(Bring your ID for Security Check-in; Lunch in Bldg. 10)

2:00 pm - 3:00 pm	Lab Visits on NIH Main Campus (<i>Optional Activity – Visits to individual NCI labs; attendance varies</i>)	NCI Center for Cancer Research (CCR) Staff
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Thursday, August 8

9:00 am - 10:15 am	Nutrigenomics	Sharon Ross, PhD, MPH
10:15 am - 10:30 am	<i>Break</i>	
10:30 am - 11:45 am	Metabolomics and Cancer	Erikka Loftfield, PhD
11:45 am - 12:45 pm	<i>Lunch</i>	
12:45 pm - 2:00 pm	Reproducibility in 'Omics Studies	Laura M. Yee, PhD
2:00 pm - 2:15 pm	<i>Break</i>	
2:15pm - 3:30pm	Telomeres and Cancer	Sharon Savage, MD

Friday, August 9

9:00 am - 10:15 am	Applying Lung Cancer Radiomics Across the Cancer Continuum	Matthew Schabath, PhD
10:15 am - 10:30 am	<i>Break</i>	
10:30 am - 11:45 am	Cancer Immunoprevention	Sasha Stanton, MD, PhD
11:45 am - 12:45 pm	<i>Lunch</i>	
12:45 pm - 2:00 pm	Translational Genomics	Mitchell Machiela, ScD, MPH
2:00 pm - 3:00 pm	Closing Remarks & Take-Home Message	Hala Azzam, PhD, MPH, CPH, CPLP

