



RCIGM Genomics 101 Course Syllabus

I. Activity Title, Date and Location

RCIGM Genomics 101

Release Date: April 13, 2021

Expiration Date: April 12, 2022

Enduring Course on RCIGM Panopto Learning Network

II. Course Description

The RCIGM Genomics 101 course is designed to provide learners with a foundational knowledge of genomics and genomic medicine at the Rady Children's Institute for Genomic Medicine. The series was created to equip learners with an overview of genomic medicine from start to finish. The modules explore the benefits and limitations of genetic tests available in the clinical setting from identifying and consenting a patient to delivering a final report.

The learning series will focus on the following areas:

- Genome Biology and Genetic Tests
- Whole Genome Sequencing
- Clinical Genomic Medicine

III. Target Audience

This course is designed for healthcare professionals interested in becoming part of the genomics community.

IV. Learning Objectives

At the completion of the course participants should be able to:

- Describe the principles of genomic medicine and whole genome sequencing
- Discuss the uses, benefits and limitations of genomic testing technologies
- Recognize when and how to refer patients for whole genome sequencing
- Identify tools and other practical resources for implementation of whole genome sequencing
- Determine early ascertainment for patients who may benefit from whole genome sequencing
- Recognize how to collaborate with an interdisciplinary team of health professionals

V. Needs Assessment

Genomic medicine is a new healthcare approach that utilizes various technologies to accurately identify patients with specific variations in their genetic code that result in disease and/or mortality. It is a large, somewhat diffuse field of study that encompasses diverse disciplines.

While the practice of whole genomic sequencing could be a key technology leveraged by NICUs and PICUs to assist in making treatment decisions of acutely ill babies, a pediatric genomic medicine knowledge gap currently exists between many healthcare providers in the United States.

Genomic medicine is a relatively recent development in the healthcare sphere that was introduced only 18 years ago with the completion of the first human genome. Incorporating genomics into clinical decision making has only been feasible with the advent of improved technologies allowing cost-effective genomic analysis. Genomic diagnostic and decision-making tools are being developed at a higher rate now than ever before. Unfortunately, didactic coursework in healthcare curricula that prepare healthcare professionals to utilize genomic medicine has been slow to catch up. This has left many practicing healthcare professionals in the workforce without formal training in genomic medicine, which is hampering the adoption of genomics in the care of acutely ill children. (Weil, A. R. (2018). Precision Medicine.)

VI. Education Course

RCIGM Genomics 101

Module 1: Basics of Genetics and Genomics - Terence Wong, PhD (20 minutes)
Module 2: Basics of Genetic Variation and Inheritance - Lisa Salz, MS CGC (20)
Module 3: Types of Genetic Tests - Nathaly Sweeney, MD, MPH, MS (20)
Module 4: Overview of WGS at RCIGM - Lucia Guidugli, PhD, FACMG, CGMBS (20)
Module 5: WGS Pros & Cons - Lucia Guidugli, PhD, FACMG, CGMBS (20)
Module 6: Case Analysis and Variant Classification - Kasia Ellsworth, PhD, FACMG (20)
Module 7: Patient Selection - Erica Sanford Kobayashi, MD (20)
Module 8: Next Generation Phenotyping - Kristen Wigby, MD (20)
Module 9: Genetic Test Selection Considerations - Kristen Wigby, MD (20)
Module 10: What Type of Genetic Test to Order - Nathaly Sweeney, MD, MPH, MS (20)
Module 11: Informed Consent - Jerica Lenberg, MS CGC (20)
Module 12: How to Deliver a WGS Result - Kelly Watkins, MS CGC (20)
Additional Resources (15 minutes)

VII. Planning Committee & Faculty/Presenter List

UC San Diego Course Director/Faculty:

Kristen Wigby, MD FACMG

Clinical Investigator

UC San Diego School of Medicine; Rady Children's Institute for Genomic Medicine

Role: Faculty Speaker

Nathaly Sweeney, MD

Pediatric Cardiologist and Clinical Investigator

Rady Children's Hospital; UC San Diego School of Medicine; Rady Children's Institute for Genomic Medicine

Role: Faculty Speaker

Visiting Faculty:

Karen Garman, EdD MAPP BCC

Director of Education and Engagement

Rady Children's Institute for Genomic Medicine

Role: Editor, Reviewer

Amanda Le, MA

Education Coordinator

Rady Children's Institute for Genomic Medicine

Role: Editor, Reviewer

Terence Wong, PhD

Clinical Genomics Analyst

Rady Children's Institute for Genomic Medicine

Role: Faculty Speaker, Editor, Reviewer

Kasia Ellsworth, PhD FACMG

Associate Lab Director

Rady Children's Institute for Genomic Medicine

Role: Faculty Speaker, Reviewer

Erica Sanford Kobayashi, MD

Pediatric Intensivist

Rady Children's Institute for Genomic Medicine/ Cedars Sinai Medical Center

Role: Faculty Speaker

Jerica Lenberg, MS CGC

Licensed Certified Genetic Counselor

Rady Children's Institute for Genomic Medicine

Role: Faculty Speaker

Lisa Salz, MS LCGC

Alliance Manager - Genomics
Rady Children's Institute for Genomic Medicine
Role: Faculty Speaker

Kelly Watkins, MS CGC

Licensed Certified Genetic Counselor
Rady Children's Institute for Genomic Medicine
Role: Faculty Speaker

Lucia Guidugli, PhD, FACMG, CGMBS

Associate Laboratory Director
Rady Children's Institute for Genomic Medicine
Role: Faculty Speaker, Editor, Reviewer

VIII. Disclosure Summary

It is the policy of the University of California San Diego School of Medicine to ensure balance, independence, objectivity and scientific rigor. All persons involved in the selection, development and presentation of content are required to disclose any real or apparent conflicts of interest. All conflicts of interest will be resolved prior to an educational activity being delivered to learners through one of the following mechanisms 1) altering the financial relationship with the commercial interest, 2) altering the individual's control over CME content about the products or services of the commercial interest, and/or 3) validating the activity content through independent peer review. All persons are also required to disclose any discussions of off label/unapproved uses of drugs or devices. Persons who refuse or fail to disclose are disqualified from participating in the CME activity. Participants will be asked to evaluate whether the speaker's outside interests reflect a possible bias in the planning or presentation of the activity. This information is used to plan future activities.

The CME staff, meeting planners, planning committee, speakers, and CME committee reviewers do not have any relevant financial relationships to disclose.

IX. Accreditation Statement and Credit Designation Statement

UC San Diego School of Medicine

The University of California San Diego School of Medicine is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

The University of California San Diego School of Medicine designates this enduring material for a maximum of **4.25 AMA PRA Category 1 Credits™**. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

X. Cultural and Linguistic Competency

California Assembly Bill 1195 requires continuing medical education activities with patient care components to include curriculum in the subjects of cultural and linguistic competency. It is the intent of the bill, which went into effect on July 1, 2006, to encourage physicians and surgeons, CME providers in the state of California, and the Accreditation Council for Continuing Medical Education to meet the cultural and linguistic concerns of a diverse patient population through appropriate professional development. The planners, speakers and authors of this CME activity have been encouraged to address issues relevant in their topic area. In addition, a variety of resources are available that address cultural and linguistic competency, some of which are included in your syllabus or handout materials. Additional resources and information about AB1195 can be found on our website at <http://cpd.ucsd.edu>

XI. Media Used

The training modules are available on our RCIGM Panopto Learning Network. Each learner is created an individual account and can access the 12 video modules along with pre-tests and post-tests.

A reliable, fast internet connection is recommended.

XII. Registration Information

A registration form will be available on our website. Learner accounts take 1-2 business days to process. Each learner will receive an email from RCIGM Panopto Learning Network with their username and temporary password with access to the video modules.