Trending Topics in Precision Medicine: Individualizing Care for Your Patient Online Course

Activity Description

For this online learning course, we are presenting impactful and important presentations and discussions from Mayo Clinic's 2022 and 2023 Individualizing Medicine Conferences. We highlight the exposome in which Mayo Clinic is a global leader, as well as the evolution of omics and multiomics, digital and telehealth, and clinical research, including direct to patient trials. The online modules offer the opportunity for clinicians, researchers and healthcare professionals interested in genetics and genomics to remain current with advances in individualized medicine.

Target Audience

The online modules offer the opportunity for clinicians, researchers and healthcare professionals interested in genetics and genomics to remain current with advances in individualized medicine.

Learning Objectives

Upon conclusion of this activity, participants should be able to:

- Identify Exposomic discoveries impacting the understanding of health and disease.
- Recognize the emerging science of the Exposome, environment and exposure research.
- Identify the potential clinical impact of multi-omics in patient care.
- Recognize the generic efforts in the space of Direct-to-Patient Omics-based Clinical Trials.

Attendance at this Mayo Clinic course does not indicate nor guarantee competence or proficiency in the performance of any procedures which may be discussed or taught in this course.

Accreditation Statement



In support of improving patient care, Mayo Clinic College of Medicine and Science is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC) to provide continuing education for the healthcare team.

Credit Statement(s)

AMA

Mayo Clinic College of Medicine and Science designates this enduring material for a maximum of 16.50 *AMA PRA Category 1 Credits* $^{\text{TM}}$. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

ANCC

Mayo Clinic College of Medicine and Science designates this enduring material for a maximum of 16.50 ANCC contact hours. Nurses should claim only the credit commensurate with the extent of their participation in the activity.

ACHE

By attending the Trending Topics in Precision Medicine: Individualizing Care for Your Patient Online Course offered by Mayo Clinic College of Medicine and Science participants may earn up to 16.50 ACHE Qualified Education Hours toward initial certification or recertification of the Fellow of the American College of Healthcare Executives (FACHE) designation.

Other Healthcare Professionals

A record of attendance will be provided to all registrants for requesting credits in accordance with state nursing boards, specialty societies or other professional associations.

Disclosure Summary

As a provider accredited by Joint Accreditation for Interprofessional Continuing Education, Mayo Clinic College of Medicine and Science must ensure balance, independence, objectivity and scientific rigor in its educational activities. All who are in a position to control the content are required to disclose all financial relationships with any ineligible company. Faculty will also identify any off-label and/or investigational use of pharmaceuticals or instruments discussed in their content for FDA compliance.

Listed below are individuals with control of the content of this program who have disclosed...

Relevant financial relationship(s) with ineligible companies:

Name	Nature of Relationship	Company
Eric W. Klee, Ph.D.	Patent Royalties	Decipher Biosciences, Inc.
Gary W. Miller, Ph.D.	Consultant	Oxford University Press, Academic Press
	Grant/Research Support	NIH/NIEHS, NIEHS, NIH/NIDDK, EU Horizon 2022, NIH/HIA, NIH, Department of the Army, NSF, DARPA
Prasad Iyer, M.D.	General Consulting	Ambu Exact Sciences
	Honoraria	Ambu, Inc., Castle Biosciences Incorporated, CDx Diagnostics, Covidien LP
	Intellectual Property	EXACT Sciences Corporation (fka EXACT Laboratories, Inc.), Symple Surgical, Inc.
	Other	Research funding from Exact Sciences, Pentax Medical, Consulting for Medtronic
Tufia Haddad, M.D.	Intellectual Property	NxGen Port Inc
	Research Grant	Takeda Oncology
Mira Keddis, M.D.	Consultant	MIRC Approved Consulting: Allena Pharmaceuticals FirstThought
Yan Asmann, Ph.D.	Intellectual Property	Cancer Genetics, Inc. (CGI)~Oncospire Genomics, LLC
Yanyan Lou, M.D.	Advisory Board	AstraZeneca Pharmaceuticals
	Honoraria	AstraZeneca Pharmaceuticals LP
		Clarion Healthcare
		Horizon CME
		Janssen Scientific Affairs, LLC
		Lilly Oncology OncLive
		Turning Point Therapeutics

All relevant financial relationships listed for these individuals have been mitigated.

No relevant financial relationship(s) with ineligible companies:

Name	•
Akhilesh Pandey, M.D., Ph.D.	Matthew Ferber, Ph.D.
Ann Mond Johnson	Pieter Dorrestein, Ph.D.
Arjun Athreya, Ph.D., M.S.	Richard Presutti, D.O.
Cathy Wurzer	Rick Woychik, Ph.D.
David Wishart, Ph.D.	Robert Barouki, M.D., Ph.D.
Dean Jones, Ph.D.	Stacie Lindsey
Douglas Walker, Ph.D.	Susan Sumner, Ph.D.
Ellen Thomas, M.D.	Theresa Kruisselbrink, M.S, CGC
Ellen Wright Clayton, JD, M.D.	Trevor Archer, Ph.D.
James Lu, M.D., Ph.D.	William C. Palmer, M.D.
Joshua Denny, M.D.	Corinne Irish
Judy Wawira Gichoya, M.D.	Ane Muskaj
Kara L. Mangold, M.S.	
Lola Fashoyin-Aje, M.D.	
Marilyn Marolt	
Martine Vrijheid, Ph.D.	

References to off-label and/or investigational usage(s) of pharmaceuticals or instruments in their presentation:

_				
	Name	Manufacturer/Provider	Product/Device	
	None			

For disclosure information regarding Mayo Clinic School of Continuous Professional Development accreditation review committee member(s) please visit: https://ce.mayo.edu/content/disclosures.

Disclaimer

Participation in this Mayo Clinic educational activity does not indicate nor guarantee competence or proficiency in the performance of any procedures which may be discussed or taught in this course. You should be aware that substantive developments in the medical field covered by this recording may have occurred since the date of original release.

Prerequisites for Participation

There are no prerequisites needed prior to participating in this education activity.

Method of Participation

Participation in this activity consists of reviewing the educational material, completing the learner assessment and evaluation.

How to Obtain Credit

To obtain credit, complete the assessment, evaluation and submit.

Release and Expiration Dates

Release Date: November 1, 2023 Renewal Date: (If applicable) Expiration Date: October 31, 2026

Acknowledgement of Commercial Support

No commercial support was received in the production of this activity.

Faculty and Course Director Listing and Credentials Course Director(s)

William C. Palmer, M.D. Mira T. Keddis, M.D.

Mayo Faculty

Akhilesh Pandey, MD, PhD
Arjun Athreya, PhD
Eric Klee, PhD
Matthew Ferber, PhD
Prasad Iyer, MD
Richard Presutti, DO
Teresa Kruisselbrink, MS, CGC
Tufia Haddad, MD
Yan Asmann, PhD
Yanyan Lou, PhD

Guest Faculty

Ann Mond Johnson Cathy Wurzer David Wishart, PhD Dean Jones, PhD Douglas Walker, PhD Ellen Thomas, MD Ellen Wright Clayton, JD, MD Garv Miller, PhD James Lu, MD, PhD Joshua Denny, MD Judy Wawira Gichoya, MD Lola Fashovin-Aje, MD Martine Vrijheid, PhD Pieter Dorrestein, PhD Rick Woychik, PhD Robert Barouki, MD, PhD Stacie Lindsey Susan Sumner, PhD Trevor Archer, PhD

Bibliographic Resources

Athreya, A. P., & Lazaridis, K. N. (2021). Discovery and Opportunities With Integrative Analytics Using Multiple-Omics Data. Hepatology (Baltimore, Md.), 74(2), 1081–1087. https://doi.org/10.1002/hep.31733

Horak, P., Heining, C., Kreutzfeldt, S., Hutter, B., Mock, A., Hüllein, J., Fröhlich, M., Uhrig, S., Jahn, A., Rump, A., Gieldon, L., Möhrmann, L., Hanf, D., Teleanu, V., Heilig, C. E., Lipka, D. B., Allgäuer, M., Ruhnke, L., Laßmann, A., Endris, V., ... Fröhling, S. (2021). Comprehensive Genomic and Transcriptomic Analysis for Guiding Therapeutic Decisions in Patients with Rare Cancers. Cancer discovery, 11(11), 2780–2795. https://doi.org/10.1158/2159-8290.CD-21-0126

Niedzwiecki MM, Walker DI, Vermeulen R, Chadeau-Hyam M, Jones DP, Miller GW. The Exposome: Molecules to Populations. Annu Rev Pharmacol Toxicol. 2019 Jan 6;59:107-127. doi: 10.1146/annurev-pharmtox-010818-021315. Epub 2018 Aug 10. PMID: 30095351.

Cheung AC, Walker DI, Juran BD, Miller GW, Lazaridis KN. Studying the Exposome to Understand the Environmental Determinants of Complex Liver Diseases. Hepatology. 2020 Jan;71(1):352-362. doi: 10.1002/hep.31028. Epub 2019 Dec 24. PMID: 31701542; PMCID: PMC7329010.

Vermeulen R, Schymanski EL, Barabási AL, Miller GW. The Exposome and Health: Where Chemistry Meets Biology. Science, 367 (6476) (2020), pp. 392-396. DOI: 10.1126/science.aay3164

Copyright

Mayo Foundation for Medical Education and Research. All rights reserved. Copyright 2023