2017 | ACMG Annual Clinical Genetics Meeting

ACMG American College of Medical Genetics and Genomics
Translating Genes Into Health®

Hot Topics in Perinatal Genetics

Held in Phoenix, Arizona, March 21-25, 2017

Date of Release: April 3, 2017
Expiration Date: April 3, 2020 (CME, NSGC, P.A.C.E.®)
Estimate Time of Completion: 2 hours
Course must be completed by the expiration dates

COURSE DESCRIPTION

Perinatal genetics, like other sub disciplines of genetics, is advancing at a rapid pace. We are continuously challenged with evolving diagnostic tools, and new differential diagnoses. This session will provide updates regarding several important topics in perinatal genetics. Cell free DNA screening (cfDNA, NIPS) has evolved from screening for trisomy 21 to the non-invasive whole genome. Most recent updates and current guidelines for utilization of cfDNA in the clinical setting will be reviewed. The epidemiology of Zika virus, and its role in congenital microcephaly will be discussed, considering the "new" threat of Zika infection. Fetal therapy is of burgeoning interest in the prenatal practice. Current prenatal therapies, including fetoscopic and open procedures, will be reviewed. Utilization of rapid genome sequencing in the perinatal realm will be summarized. Finally, this session will also provide an overview of recurrent pregnancy loss.

Dr. Nahla Khalek (Update on Fetal Therapies), and Dr. Carol Saunders (Current Clinical Status of the Rapid Perinatal Genome) declined to release their slides but you will be able to listen to their presentations.

LEARNING OBJECTIVES

At the conclusion of this course, participants should be able to:

- Recognize the current clinical recommendations for cell free DNA screening
- Identify the risk for microcephaly following maternal Zika infection
- Describe current fetal therapies
- Discuss current applications of exome and genome sequencing in the perinatal setting
- Identify etiologies for recurrent pregnancy loss

TARGET AUDIENCE

All healthcare professionals interested in the diagnosis, management, treatment and prevention of genetic conditions and increasing their understanding of the genetic basis of common, chronic health problems affecting both children and

adults will find the programming applicable to their practice. These select sessions from the ACMG Annual Meeting are targeted for the following professionals:

- Medical and clinical geneticists
- Physicians of all specialties with an interest in genetics, genomics and the genetic basis of disease
- Genetic counselors
- Laboratory geneticists, directors, technicians and technologists
- Researchers
- Pathologists
- Educators
- Nurses
- Dietitians
- Physician assistants
- Biotechnology and pharmaceutical development professionals
- Fellows, Trainees and Students
- Public health professionals
- Genetic/consumer advocates
- Others with an interest in the science and art of medical genetics and genomics

SESSIONS

- Non-invasive Prenatal Screening: Current Trends and Guidelines- Anthony Gregg, MD, MBA, FACMG, FACOG
- An Update on Zika Virus as a Cause of Microcephaly and Other Birth Defects- Sonja Rasmussen, MD, MS
- Update on Fetal Therapies- Nahla Khalek, MD, MPH
- Current Clinical Status of the Rapid Perinatal Genome- Carol Saunders, PhD, FACMG
- Etiologies of Recurrent Pregnancy Loss- Britton Rink, MD, MS

Accreditation:

The American College of Medical Genetics and Genomics is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

Credit Designation:

The American College of Medical Genetics and Genomics designates this activity for a maximum of 2 *AMA PRA Category 1 Credit*s™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Genetic Counselor Credit

The National Society of Genetic Counselors (NSGC) has authorized American College of Medical Genetics and Genomics to offer up to 2 Category 1 contact hours for this OnDemand course. The American Board of Genetic Counseling (ABGC) will accept CEUs earned for this course for the purposes of genetic counselor certification and recertification. Reporting of credits is sent to NSGC quarterly. Additional fee (~$25) applies for NSGC credit that is billed by NSGC.

P.A.C.E. CEUs – Laboratory Directors and Laboratory Personnel

ACMG is approved as a provider of continuing education programs in the clinical laboratory sciences by the American Society for Clinical Laboratory Science (ASCLS) Professional Acknowledgment for Continuing Education (P.A.C.E.®) Program. The American College of Medical Genetics and Genomics designates this course for a maximum of 2 contact hours. ACMG is approved by the Florida Board of Clinical Laboratory Personnel as CE Provider. ACMG is approved by the California Department of Health Services through the ASCLS P.A.C.E.® Program as CE Provider #275.

HIPAA Compliance

The ACMG supports medical information privacy. While the ACMG is not a "covered entity" under HIPAA 1996 and therefore is not required to meet these standards, ACMG wishes to take reasonable steps to ensure that the presentation of individually identifiable health information at ACMG-sponsored events has been properly authorized. All presenters have completed a form indicating whether they intend to present any form of individually identifiable healthcare information. If so, they were asked either to attest that a HIPAA-compliant consent form is on file at their institution, or to send ACMG a copy of the ACMG HIPAA compliance form. This information is on record at the ACMG Administrative Office and will be made available on request.

Content Validation

ACMG follows the ACCME policy on Content Validation for CME activities, which requires:

Content Validation and Fair Balance

1. ACMG follows the ACCME policy on Content Validation for CME activities, which requires:
    a) All recommendations involving clinical medicine must be based on evidence that is accepted within the profession of medicine as adequate justification for their indications and contraindications in the care of patients.
    b) All scientific research referred to, reported or used in CME in support or justification of patient care recommendations must conform to the generally accepted standards of experimental design, data collection and analysis.

2. Activities that fall outside the definition of CME/CE; "Educational activities that serve to maintain, develop, or increase the knowledge, skills, and professional performance and relationships that a physician uses to provide services for patients, the public, or the profession" (source: ACCME and AMA) will not be certified for credit. CME activities that promote recommendations, treatment, or manners of practicing medicine or pharmacy that are not within the definition of CME/CE or, are known to have risks or dangers that outweigh the benefits or, are known to be ineffective in the treatment of patients.
3. Presentations and CME/CE activity materials must give a balanced view of therapeutic options; use of generic names will contribute to this impartiality. If the CME/CE educational materials or content includes trade names, where available, trade names from several companies must be used.

Off-label Uses of Products

When an off-label use of a product, or an investigational use not yet approved for any purpose, is discussed during an educational activity, the accredited sponsor shall require the speaker to disclose that the product is not labeled for the use under discussion, or that the product is still investigational. Discussions of such uses shall focus on those uses that have been subject of objective investigation.

Disclaimer: *ACMG educational programs are designed primarily as an educational tool for health care providers who wish to increase their understanding of the application of genomic technologies to patient care. The ACMG does not endorse, or recommend the use of this educational program to make patient diagnoses, particular by individuals not trained in medical genetics. Adherence to the information provided in these programs does not necessarily ensure a successful diagnostic outcome. The program should not be considered inclusive of all proper procedures and tests or exclusive of other procedures and tests that are reasonably directed at obtaining the same results. In determining the propriety of any specific procedure or test, a healthcare provider should apply his or her own professional judgment to the specific clinical circumstances presented by the individual patient or specimen.*

2017 ACMG Program and Education Committee Members Disclosures

Members of the ACMG Staff, Education and Program Committees involved in planning the 2017 ACMG Annual Clinical Genetics Meeting are required to disclose relevant relationships which could be perceived by some as a real or apparent conflict of interest in planning. All disclosures have been reviewed and conflicts of interest resolved by the Education Committee COI sub-committee or the Executive Director and CME Associate Director and conflicts of interest are disclosed. In the cases where a conflict existed then the committee member refrained from the discussion.

Following is a list of program and education committee members who have disclosed one or more such relationships and names of companies with which those relationships exist:

EC = Education Committee; PC = Program Committee; S = ACMG Staff

1. Major stockholder/ownership interest 2. Grant/Research Support (External) 3. Salary/Employment/Royalty(ies)/Honoraria 4. Consultant/consulting fees/other remuneration 5. Speakers' bureau	6. Non-remunerative positions of influence such as officer, board member, trustee, or public spokesperson (All Committee Members Below are on ACMG Committees –Members with other affiliations are listed) 7. Receipt of intellectual property 8. Other

Georgianne L. Arnold, MD, FACMG - Horizon, 2; Recordati, 2; Biomarin, 2; Actelion, 2; SIMD, 6; ACGME, 6; AAP, 6; ASHG, 6 (PC)
Karen W. Gripp, MD, FACMG – Wiley Publishing Inc., 3; FDNA, 4; Novartis, 4 (PC)
Fuki M. Hisama, MD, FACMG – Horizon Pharmaceuticals, 4; ABMGG, 6 (PC)
Christine A. Curtis, PhD, FACMG - CSI Laboratories, 3 (EC)
Thomas E. Mullen, PhD, MS, FACMG - Good Start Genetics Inc., 3 (EC)
Christian P. Schaaf, MD, PhD, FACMG - Springer Publishing Company, 3 (PC), (EC)
Katrina M. Dipple, MD, PhD, FACMG – ACGME, 6; AAP, 6; ASHG, 6; LA BioMed DSMB, 4; SIMD 6 (PC)

Following is a list of committee, education members and staff who have no relationships to disclose:

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Penelope Freire, CMP (PC), (S)

SPEAKERS AND MODERATORS

Faculty Disclosures:

As a sponsor accredited by the ACCME, the American College of Medical Genetics and Genomics must ensure balance, independence, objectivity and scientific rigor in all its sponsored educational activities. All faculty participating in a CME-certified activity are expected to disclose to the audience any relevant financial interest(s) or other relationship(s) with the manufacturer(s) of any commercial product(s), provider(s) of commercial services or any commercial supporters, including diagnostic laboratories, of the activity discussed in an educational presentation. Relevant financial interest(s) or other relationship(s) can include such things as grants or research support, consultancy, major stock holder, etc. The intent of this disclosure is not to prevent a planner or speaker with a relevant financial or other relationship from course planning or making a presentation, but rather to provide learners with information on which they can make their own judgments. It remains for the audience to determine whether the speaker's interests or relationships may influence the presentation with regard to exposition or conclusion. All conflicts of interests have been reviewed and resolved by the education and CME subcommittee.

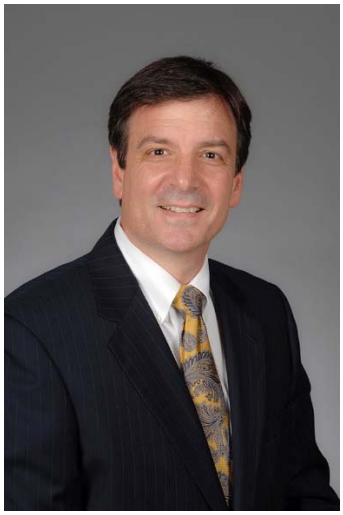
Moderator: Susan Klugman, MD, FACOG, FACMG
Director, Division of Reproductive and Medical Genetics, Montefiore Medical Center, Albert Einstein College of Medicine
No financial relationships to disclose.

r. Susan Klugman is the Director of the Division of Reproductive and Medical Genetics as well as the Medical Director for the Program for Jewish Genetic Health at Montefiore Medical Center/Albert Einstein College of Medicine where she also is a Professor of Obstetrics and Gynecology and Women's Health. She is a board–certified obstetrician gynecologist and a board certified geneticist. Dr. Klugman, received her medical degree from New York University in 1988 after completing her undergraduate studies in Biometry and Statistics at Cornell University. She then completed a residency in Obstetrics and Gynecology at the Albert Einstein College of Medicine and the Montefiore Medical Center where she continues to practice. In 1993, she founded the Larchmont Women's Center, a faculty practice office. In 2004, she completed a second residency in Medical Genetics at the same institution and since 2008 has served as the Director of Reproductive Genetics at Montefiore Medical Center. Dr. Klugman is also the Program Director for the residency in Medical Genetics. At Einstein, she is a member of several committees including Faculty Senate and Admissions Committee. Nationally, she is on the Board of Directors for the American College of Medical Genetics, the Committee on Genetics for the American College/Congress of Obstetrics and Gynecology, and the Residency Review committee for Medical Genetics for the Accreditation Council for Graduate Medical Education. She has lectured locally and nationally over the past three decades on various topics pertaining to women's health and genetics.

Moderator: Myra Wick, MD, PhD, FACMG
Consultant, Mayo Clinic
No financial relationships to disclose.

Myra Wick is a Consultant and Assistant Professor in the Department of Medical Genetics and Obstetrics and Gynecology at the Mayo Clinic. She also has an appointment in the Department of Laboratory medicine, and is the lead for the Section of Reproductive Genetics at Mayo Clinic. She is board certified by The American Board of Obstetricians and Gynecologists and the American Board of Medical Genetics. Dr. Wick received her PhD from Mayo Graduate School of Medicine and her MD from Mayo Medical School. She completed residencies in the Department Of Obstetrics and Gynecology and the Department of Medical Genetics through the Mayo Graduate School of Medicine. Dr. Wick's clinical practice focuses on prenatal genetics and the genetics of hereditary cancer syndromes, particularly those associated with gynecologic cancers. Research interests include biobanking of umbilical cord blood and placental tissue, the genetics of hypoplastic left heart syndrome, and prenatal molecular diagnostics, including perinatal whole genome sequencing. She is a member of The Mayo Clinic Genomic Odyssey Board, The NCCN Committee on High Risk Breast and Ovarian Cancer, and the ACMG Program Committee. She is also involved in teaching for the Mayo Medical School Year I Genetics Course. She is passionate about high school and college sports, especially cross country, hockey and soccer. She also enjoys gardening, roller blading and exploring MN State Parks.

Speaker: Anthony Gregg, MD, MBA, FACMG, FACOG
BL Stalnacker Professor and Chief, Division of Maternal-Fetal Medicine, University of Florida, University of Florida College of Medicine
No financial relationships to disclose.

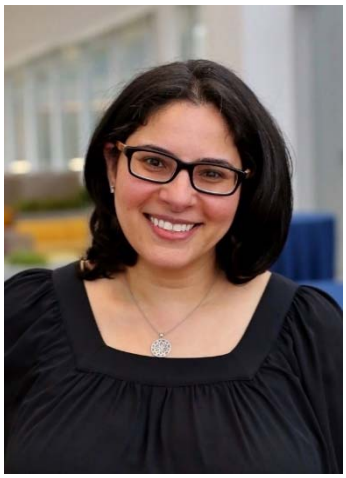


Anthony R. Gregg, M.D., Professor & Chief Maternal-Fetal Medicine Medicine, UF ObGyn – Dr. Gregg is Professor, and Chief, Division of Maternal-Fetal Medicine at the University of Florida in the Department of Obstetrics and Gynecology. He is also the Director of Obstetrics at the UF Health Shands Hospital, and the Director of the Maternal Fetal Medicine Fellowship. Dr. Gregg is a Chicago native and received his undergraduate, medical school and residency education at Loyola University and Loyola Foster McGaw Hospital. After residency, Dr. Gregg completed a Maternal-Fetal Medicine Fellowship at the University of Iowa followed by a fellowship in Medical Genetics at Baylor College of Medicine in Houston. His research interest was mouse modeling of preeclampsia and abnormal parturition. Dr. Gregg held faculty positions at the University of Iowa, Baylor College of Medicine in Houston and the University of South Carolina in Columbia, South Carolina. He is Board-Certified in Obstetrics and Gynecology, Maternal-Fetal Medicine, and Medical Genetics. Dr Gregg recently received an MBA from the University of Florida, Hough School of Business. He has had research funding by private organizations, foundations, and small NIH awards. He has served on the Board of the American College of Medical Genetics and Genomics (ACMG) and is past Chair of the American College of Obstetricians and Gynecologists Committee on Genetics. He is currently liaison to this committee for the ACMG. He is interested in professional organization policies that impact incorporation of genomic technologies into clinical practice.

Speaker: Sonja Rasmussen, MD, MS
Editor-in-Chief, Morbidity and Mortality Weekly Report (MMWR) Series, and Director, Division of Public Health Information Dissemination, CDC, Centers for Disease Control & Prevention
No financial relationships to disclose.

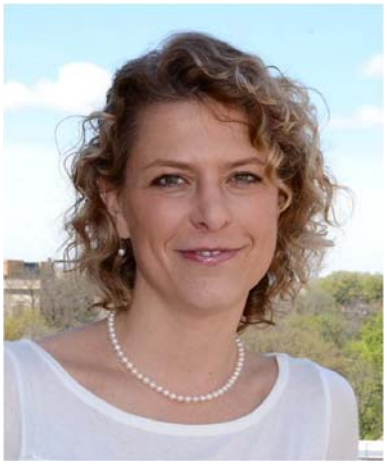
Sonja Rasmussen, MD, MS is Editor-in-Chief of CDC's Morbidity and Mortality Weekly Report (MMWR) Series and Director of the Division of Public Health Information Dissemination. Since joining CDC in 1998, Dr. Rasmussen has held several positions in the National Center on Birth Defects and Development Disabilities including Medical Officer, Associate Director for Science, and Senior Scientist. While there, she worked collaboratively with other experts across CDC on pandemic planning efforts for pregnant women, which guided CDC recommendations for pregnant women during the 2009 H1N1 pandemic. From 2011-2014, she served as Deputy Director of the Influenza Coordination Unit, which is responsible for CDC's pandemic influenza preparedness. Before her current position, Dr. Rasmussen served for six months as the Acting Director of the Office of Public Health Preparedness and Response, the office responsible for CDC's public health preparedness and response activities, including its Emergency Operations Center. Dr. Rasmussen has played leadership roles in several CDC emergency responses to infectious diseases, including 2009 H1N1 influenza, Middle East Respiratory Syndrome (MERS) coronavirus, Ebola virus, and Zika virus. Dr. Rasmussen received her BS in Biology and Mathematics with magna cum laude honors from the University of Minnesota-Duluth, her MS degree in Medical Genetics from the University of Wisconsin, and her MD degree with honors from University of Florida. She is board certified in pediatrics and clinical genetics and is an author on over 200 peer-reviewed papers.

Speaker: Nahla Khalek, MD, MPH
The Children's Hospital of Philadelphia
No financial relationships to disclose.



Dr. Nahla Khalek is an attending physician at the Center for Fetal Diagnosis and Treatment at Children's Hospital of Philadelphia and assistant professor of Clinical Obstetrics and Gynecology at the Perelman School of Medicine at The University of Pennsylvania. She specializes in maternal-fetal medicine, prenatal diagnosis, fetal therapy and reproductive genetics. Dr. Khalek's clinical focus is in prenatal dysmorphology and placental pathology. She has expertise using advanced diagnostic tools to diagnose rare and complex prenatal syndromes in utero. Dr. Khalek became interested in fetal medicine during her residency and fellowship, and was drawn to the Center for Fetal Diagnosis and Treatment because of its multidisciplinary and comprehensive approach. Prior to joining the Center team in 2010, Dr. Khalek served as Assistant Clinical Professor of Obstetrics, Gynecology and Women's Health in the Division of Maternal-Fetal Medicine and Clinical Genetics at the Albert Einstein College of Medicine, Bronx, NY. She also served as the Director of Obstetric Ultrasound at Jacobi Medical Center, Bronx, NY. Dr. Khalek earned her B.S. at the Sophie Davis School of Biomedical Education, City College of New York, and her medical degree from New York Medical College. She received her Masters in Public Health at Columbia University's Mailman School of Public Health. She completed her residency in obstetrics and gynecology and fellowships in maternal-fetal medicine and clinical genetics at Wayne State University School of Medicine, Detroit, MI. She is board certified in obstetrics and gynecology, maternal-fetal medicine and clinical genetics. In spring 2015, Dr. Khalek appeared in a three-part documentary series airing on PBS called TWICE BORN: Stories from the Special Delivery Unit. The Emmy® Award-winning documentary offered a look inside the Center for Fetal Diagnosis and Treatment at Children's Hospital of Philadelphia, and its unique Garbose Family Special Delivery Unit.

Speaker: Carol Saunders, PhD, FACMG
Director, Clinical Molecular Genetics Laboratory, Children's Mercy Kansas City
No financial relationships to disclose.



Dr. Saunders is a board certified clinical molecular geneticist with a PhD in molecular genetics from the University of Kansas. She is a Professor at the University of Missouri-Kansas City School of Medicine and has directed the Clinical Molecular Genetics Laboratory at Children's Mercy Hospital in Kansas City for 14 years. She was at the forefront of the rapid changes in the field of genetics, intimately involved in the inception of the Center for Pediatric Genomic Medicine (CPGM), which was the first genome center located in a pediatric hospital. The CPGM has been a leader in applying genomic approaches for the rapid and early diagnosis of childhood diseases, and is currently one of the only laboratories performing clinical whole genome sequencing. Her research interests relate to the utility of clinical next generation sequencing, new associations of rare Mendelian pediatric diseases with genes; in particular, of neurodevelopmental and mitochondrial disorders. She is the director of the fellowship program in molecular genetics at Children's Mercy Hospital, and pathology residency training in molecular genetics.

Speaker: Britton Rink, MD, MS
Director Perinatal Genetics, Mount Carmel Health Systems
No financial relationships to disclose.

Dr. Rink is Director of Perinatal Genetics in the Mount Carmel Health System, Columbus, Ohio. She is dual board certified in Maternal Fetal Medicine and Genetics and maintains a practice in both subspecialties. Dr. Rink is the incoming Chair to the ACOG Committee on Genetics after serving on the committee for several years and most recently as the Vice Chair. She has particular interest in prenatal diagnosis, advanced fetal imaging, fetal therapy and recurrent pregnancy loss. Dr. Rink has authored several book chapters and publications on genetic testing and screening in pregnancy. She resides in Columbus, Ohio with her husband and four children.

Participation Instructions

1. Participant logs into ondemand.acmg.net
2. Once logged in the participant will access the session they would like to view. They will be asked if they would like to claim credit for the meeting, or if they will not claim credit for the meeting. Then, this information (Course description) will appear, and participant will have to attest that they have read the information. They will then click Continue.
3. After that, the participant will be able to select the credit types to claim.
4. For each session with a post-test, the participant will need to mark and complete the matching pre-test.
5. Then the participant will watch the session presentations.
6. Participant will complete viewing all session content. "Check marks" indicate which presentations have been viewed.
7. After viewing all presentations within a session, participant will click the "Claim Credit for Session" button under the CME dropdown at the top of the page.
8. Participant should take and then successfully pass the post-test. If they do not pass with a score of 80% or higher, they will have unlimited tries to pass the post-test.
9. Participant will continue the steps above to earn credits for additional sessions.
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Stream Requirements	
Network	For best results, use a hardwired network connection instead of wireless
Full Screen Viewing	If you would like to view the webcast full screen, display the tool bar at the bottom and click the double arrow in the far right corner. The screen will enlarge to the full screen of you system. To restore the size, press the "ESC" key
Refresh Browser Window	If the webcast freezes and does not recover in 3-4 seconds, refresh browser window
Freezing or Stuttering Issues	Adjust the amount of bandwidth needed by putting your mouse anywhere over the video window. A tool bar will appear at the bottom. On the right side you will see a "HD" button, click on that button and you will see a list of options. The top is "auto", with decreasing numbers below. Select a lower bandwidth (such as 360p) to see if your webcast improves

For Technical Support call	1-800-504-5379

Mobile Viewing Requirements

Android Devices	Android 2.3+ with Adobe Flash Player 10.2 or better installed Install Flash Player
Apple Devices	iOS 4+

Online Viewing Requirements

Bandwidth	512kbps
Required Hardware and Software	Screen resolution of 1024X768 or larger Sound card and speakers/headphones
Browser	Microsoft Internet Explorer 7.0 or better Mozilla Firefox 4 or better Safari 5 or better
Windows	Operating System: Windows 8 desktop mode, Windows 7; Windows Vista; Windows XP Service Pack 2 or 3 x86 or x64 (Browsers must be in 32-bit mode) 1.6-gigahertz (GHz) or higher processor 512MB of RAM
Mac OS	Operating System: Apple Mac OS X 10.4.8 or above Intel Core™ Duo 1.83GHz or faster processor 512MB of RAM

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ACMG Members and ACMG Trainees: ($50)
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