



# **2017 ACMG GENETICS AND GENOMICS REVIEW COURSE ONDEMAND**

**HELD IN TAMPA, FLORIDA  
MAY 4 - 7, 2017**

Date of Release: May 8, 2017  
Expiration Date: May 8, 2019 (NSGC)  
Expiration Date: May 8, 2020 (CME, P.A.C.E.)  
Estimate Time of Completion: Maximum of 21.5 hours  
Course must be completed by expiration date.

# 2017 ACMG GENETICS AND GENOMICS REVIEW COURSE CONTINUING EDUCATION

## Course Description & Course Format

The ACMG Genetics and Genomics Review Course offers a 3 day format that provides an intense learning environment with exam preparation lectures that cover a broad range of genetic and genomic topics presented by recognized experts in the field. Topics include:

- Cell Biology/Genomics
- Molecular Biology
- Clinical Cytogenetics
- Molecular Genetics and Genomics
- Genetic Transmission
- Biochemical Genetics
- Developmental Genetics
- Cancer Genetics
- Genetic Counseling & Risk Assessment
- Newborn Screening
- Neurogenetics
- Reproductive Genetics
- Systems-Based Disorders
- Genomic Medicine

## Included in this course are the following:

- Video of recorded sessions
- Audio files that you can download
- Practice exam
- Exam preparation and exam tips
- In-depth coverage of exam content areas
- Course syllabus including PDF of slides (downloadable)
- Over 500 sample exam questions
- Supplement on “Syndromes Every Geneticist Should Know”

## Course Objectives

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

- Identify common genetic syndromes and discuss their clinical features
- Interpret standard molecular data and explain how to communicate results to families
- Perform simple quantitative genetic calculations and solve related problems
- Describe basic cytogenetics and identify features of common chromosomal disorders
- Recognize clinical features of selected metabolic disorders and describe their molecular basis and review how to provide counseling about them
- Discuss the extents and limits of prenatal tests and explain how to perform routine prenatal counseling
- Explain clinical and molecular aspects of inherited cancer syndromes and know how to provide counseling for common human cancers

Course Objectives approved by the NSGC for Genetic Counselors

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

- Identify common genetic syndromes
- Interpret standard molecular data
- Perform simple quantitative genetic calculations
- Describe basic cytogenetics
- Recognize clinical features of selected metabolic disorders
- Explain how to perform routine prenatal counseling
- Explain clinical and molecular aspects of inherited cancer syndromes

### **Target Audience**

This course is designed to assist genetics healthcare professionals who are seeking to update and reinforce their general knowledge of medical genetics. This course is designed to assist genetics healthcare professionals who are seeking to update and reinforce their general knowledge of medical genetics. This course also allows ABMGG individuals to prepare for Board Certification or Recertification. Genetic counselors are also welcome.

### **Continuing Medical Education Credit**

This activity has been planned and implemented by the American College of Medical Genetics and Genomics in accordance with the Essential Areas and Policies of the Accreditation Council for Continuing Medical Education.

### **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.

### **CME Credit Designation**

The American College of Medical Genetics and Genomics designates this enduring material for a maximum of 21.5 hours in *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

### **Genetic Counselor CEUs :**

**The National Society of Genetic Counselors (NSGC) has authorized the American College of Medical Genetics and Genomics to offer up to 21.5 Category 1 contact hours for the event: 2017 ACMG Genetics and Genomics Review Course.** The American Board of Genetic Counseling (ABGC) will accept CEUs earned at this program for the purposes of certification and recertification.

ACMG reports your passing test score and evaluation to NSGC twice a year, the last days of June and December. NSGC processes the December reports in early January. Additional fee (~\$25) applies for NSGC credit that is billed by NSGC.

### **Continuing Education Units (Clinical Laboratory Scientists, Directors, and 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 College designates the 2017 ACMG Genetics and Genomics Review Course enduring

activity for a maximum 21.5 contact hours. *ACMG is approved by the Florida Board of Clinical Laboratory Personnel as CE Provider #275.*

*ACMG is approved by the California Department of Health Services through the ASCLS P.A.C.E.® Program as CE Provider # 0001.*

**To obtain educational credits you must:**

1. Take a pre-test (not graded)
2. Review the videos and course materials
3. Complete the Session evaluation
4. Take the Post Test Exam (score 80% or better to pass)
5. Complete Course evaluation
6. Claim credits and Print Certificate

# 2017 ACMG GENETICS AND GENOMICS REVIEW COURSE ONDEMAND

## AGENDA

### Thursday, May 4, 2017

7:00 pm - 7:30 pm	Introduction to Course	Bruce R. Korf, MD, PhD, FACMG
7:30 pm – 8:30 pm	ABMGG Review and Exam Preparation Tips	Miriam G. Blitzer, PhD, FACMG Gary S. Gottesman, MD, FAAB, FACMG

### Friday, May 5, 2017

8:00 am – 9:00 am	Cell Biology/Genomics	Christa Lese Martin, PhD, FACMG
9:00 am – 10:00 am	Genomics - Basics	Madhuri Hegde, PhD, FACMG
10:30 am – 11:30 am	Clinical Cytogenetics	Christa Lese Martin, PhD, FACMG
11:30 am – 12:30 pm	Clinical Molecular Genetics	Madhuri Hegde, PhD, FACMG
2:00 pm – 3:00 pm	Genetic Transmission	Bruce R. Korf, MD, PhD, FACMG
3:00 pm – 4:00 pm	Newborn Screening	John A. Phillips, III, MD, FACMG
4:30 pm – 5:30 pm	Developmental Genetics	Tony Wynshaw-Boris, MD, PhD, FACMG
5:30 pm – 6:30 pm	Cancer Genetics I	Sharon Plon, MD, PhD, FACMG

### Saturday, May 6, 2017

8:00 am – 9:00 am	Genetic Counseling & Risk Assessment	Pamela L. Flodman, MSc, MS, LCGC
9:00 am – 10:00 am	Biochemical Genetics I	Gerard Berry, MD, FACMG
10:30 am – 11:30 am	Neurogenetics	Bruce R. Korf, MD, PhD, FACMG
11:30 am – 12:30 pm	Reproductive Genetics I	Louise E. Wilkins-Haug, MD, PhD, FACMG
2:00 pm – 3:00 pm	Cancer Genetics II	Sharon Plon, MD, PhD, FACMG
3:00 pm – 4:00 pm	Biochemical Genetics II	Gerard Berry, MD, FACMG
4:00 pm – 5:00 pm	Systems-Based Disorders I	Bruce R. Korf, MD, PhD, FACMG
6:30 pm – 8:00 pm	Exam Workshop	Gary S. Gottesman, MD, FAAP, FACMG

### Sunday, May 7, 2017

8:00 am – 9:00 am	Systems-Based Disorders II	John A. Phillips, III, MD, FACMG
9:00 am – 10:00 am	Reproductive Genetics II	Louise E. Wilkins-Haug, MD, PhD, FACMG
10:30 am – 11:30 am	Genomic Medicine	Bruce R. Korf, MD, PhD, FACMG
11:30 am – 12:00 pm	Course Wrap Up	Bruce R. Korf, MD, PhD, FACMG John A. Phillips, III, MD, FACMG

# 2017 ACMG GENETICS AND GENOMICS REVIEW COURSE

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## 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.

### **The following have reported disclosures:**

Bruce R. Korf, MD, PhD, FACMG

Dr. Korf receives grant/research support from Novartis. He is on the Advisory Board for Accolade and Genome Medical. He is on the Board of Directors for the American College of Medical Genetics and Genomics and the Children's Tumor Foundation. He is an advisor for the Neurofibromatosis Therapeutic Acceleration Project, a Founding Member of Envision Genomics. He receives a salary from the University of Alabama at Birmingham.

Madhuri Hegde, PhD, FACMG

Dr. Hegde is an advisor for Genzyme (Pompe program), PTC (DMD program), Coriell Cell Repositories, and PerkinElmer Genetics Inc.

Christa Lese Martin, PhD, FACMG

Dr. Martin is employed by Geisinger Health System and is a consultant the The Jackson Laboratory.

John A. Phillips, III, MD, FACMG

Dr. Phillips is a Site Investigator for the following: 1) PKU: BMN 015 &165, 2) Achondroplasia: BMN 111-901, 201 & 202 Clinical Trials BioMarin Pharmaceutical Inc. & 3) FAOD: UX007 Ultragenyx Pharmaceuticals, Inc. He is Principal Investigator for TN State Genetics Contract & Member TN Genetics Advisory Committee. A Co-PI: Vanderbilt Undiagnosed Disease Network (UDN) Clinical Center and a Co-I: Dr Blackwell's PPG "Mechanisms of Familial Pulmonary Fibrosis".

Sharon Plon, MD, PhD, FACMG

Dr. Plon is an employee of Baylor College of Medicine (BCM) which derives revenue from genetic testing, including whole exome sequencing. BCM and Miraca Holdings Inc. have agreed on a joint venture with shared ownership and governance of the clinical genetics diagnostic laboratories. Dr. Plon will also discuss off-label use and/or investigational use of drug target tumors.

### **The following faculty members have nothing to disclose:**

Gerard Berry, MD, FACMG

Pamela L. Flodman, MSc, MS, LCGC

Gary S. Gottesman, MD, FAAP, FACMG

Louise E. Wilkins-Haug, MD, PhD, FACMG

Anthony J. Wynshaw-Boris, MD, PhD, FACMG

Miriam G. Blitzer, PhD, FACMG

Jane Radford, MHA, CHCP (ACMG Staff)



## 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:**

This review course is designed as an educational resource for medical geneticists and other health care providers. Its use does not, and should not be considered to ensure a successful outcome on the certification examinations offered by the American Board of Medical Genetics and Genomics or the American Board of Genetic Counseling, or any other examinations. The course should not be considered inclusive of all appropriate information or all available sources of information that may be useful in preparing for the examinations or for any other purpose.

The ACMG does not endorse, or recommend the use of this educational program to make patient diagnoses, particularly 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.

## Participation Instructions

For Technical Support call 1-703-948-3001 (USA) or Email [acmg-customersupport@echo360.com](mailto:acmg-customersupport@echo360.com)

1. Participant logs into 2017 Genetics and Genomics Review Course OnDemand.
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 course information will appear, and participant should 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. The participant will need to complete the 50-question practice test before viewing the material.
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.
10. If a session does not have a test attached, the participant will not need to take a post-test, but will have to complete a session evaluation to claim credit.
11. To print their certificate, the participant will click the "Print Certificate" button under the CME dropdown at the top of the page. Participant must complete the course evaluation (one time only) before they can access their certificate. After completing the course evaluation, Participant will then choose their certificate(s).

### 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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