A Team Sport

ISCC, Bethesda, 01/14/16

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Kathleen R. Blazer, EdD, CGC
Associate Director, Cancer Genomics Education Program

The City of Hope Intensive Course and Clinical Cancer Genomics Community of Practice: multimodal professional development for community clinicians
Introduction

- Genetic cancer risk assessment (GCRA) is a standard of care specialty practice that uses genetic/genomic information to
  - Identify individuals and families with inherited cancer risk
  - Prescribe high-risk screening, preventive care and targeted therapies
- Market forces and advances in genetic technologies are fueling demand for providers with GCRA training
- Patients in community care settings have limited/no access to cancer genetics services and research resources
How have we learned cancer genetics practice in the past?

“The hard way”

- Self-directed studies
- Hands on experience
- Gleaning the literature
- Formal fellowship training
  (Medical Oncology, Clinical Genetics, ? Both)
City of Hope Division of Clinical Cancer Genetics
Established in 1996

Dedicated to Standards of Excellence in Cancer Genetics

- Patient Care
- Research
- Education and Training
<table>
<thead>
<tr>
<th>PI</th>
<th>Grant Number Title</th>
<th>Start and End dates</th>
<th>Target Populations</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weitzel</td>
<td>Maternal Child Health Bureau-Genetics Services-1MCJ-0161020-01-0 Cancer Genetics Education for Primary Care Providers</td>
<td>1997-2000</td>
<td>Primary care physicians and allied health professionals in managed care organizations, to develop screening and referral level competence</td>
<td>2,800 participants</td>
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</table>
| Weitzel  | R25 CA75131 Cancer Genetics Education Program                                        | 1998-2007           | Cancer center faculty; community oncologists, managed care administrators, underrepresented minority institutions | Full Day Conferences (N=10) 1, 2 1,423 participants  
One hour seminars: 22,704 participants |
2005-2010  
2012-2017 | Pilot Intensive Course  
Community-based physicians, genetic counselors, and master’s nurses, to develop practitioner level competence in clinical cancer genetics | 532 Participants  
>150 each: Genetic Counselors; APNs; Physicians  
Others: PA, PhD/Psych |
| Weitzel  | R25 CA85771 Cancer Genetics Career Development Program                                | 2001-2011           | Oncology or genetics clinicians (physicians, genetic counselors, advanced practice nurses) to become translational researchers in cancer genetics | 18 Participants  
7 Physicians  
4 Doctoral nurses  
2 Master’s level nurses  
5 Genetic counselors |

Cancer Genetics Education Program Components/Goals

Department of Clinical Cancer Genetics

Cancer Genetics Education Program

Cancer Genetics Career Development Program (NCI-R25T)

Cancer Genetics and Community-based Research Course (NCI-R25E)

Cancer Screening & Prevention Program - Community Laboratory

CME
For Primary Care/Specialty Practitioners (NCI-R25E)

Advisory Committee
Multidisciplinary intra/extramural professionals

Beckman Research Institute Graduate School of Biological Sciences

USC Dept of Preventive Medicine Claremont Graduate University Global H.
Initially awarded February 2001 (NCI R25T CA85771) - competing continuation funded through 2011

Purpose: To provide interdisciplinary clinical, didactic and collaborative research training in cancer genetics and prevention

Target Audience: Physicians and doctoral nurses with oncology or genetics credentials and academic career potential

Goal: To develop program leaders in basic, translational and clinical cancer genetics research
Community Cancer Genomics and Research Training

Objectives

• To train master’s-level genetic counselors, advanced practice nurses and physicians for practitioner-level competency in GCRA and research collaboration essentials through an intensive CME/CEU-accredited (>100 hrs) cancer genomics training course

• To increase access to competent GCRA services and promote community-based research participation
Didactic lectures, case working conferences and all day seminars:

<table>
<thead>
<tr>
<th>Topic domain</th>
<th>Curriculum modules</th>
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</thead>
<tbody>
<tr>
<td>Genetics</td>
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<tr>
<td>Basic Genetics</td>
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<tr>
<td>The Science of Cancer Genetics</td>
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<tr>
<td>Documenting the Family Cancer History</td>
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<tr>
<td>Genetic Testing Methods for Inherited Cancer Susceptibilities</td>
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<tr>
<td>Molecular Genetics Wet Lab</td>
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<tr>
<td>Understanding Variants of Uncertain Significance</td>
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<tr>
<td>Basic Clinical Oncology</td>
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<tr>
<td>Cancer Cytogenetics</td>
<td></td>
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<tr>
<td>Staging Schema for Solid Tumors</td>
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<tr>
<td>Principles/Toxicities of Cancer Therapy</td>
<td></td>
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<tr>
<td>Introduction to Pedigree Drawing</td>
<td></td>
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<tr>
<td>Fundamentals of the Cancer Risk Counseling Session</td>
<td></td>
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<tr>
<td>Ethical, Legal, and Social Issues in Cancer Genetics</td>
<td></td>
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<tr>
<td>Breast/Ovarian Cancer Risk Assessment</td>
<td></td>
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<tr>
<td>Gastro-Intestinal Cancer Risk Assessment</td>
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<tr>
<td>Mock Cancer Risk Assessment Counseling Session</td>
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<tr>
<td>Practice Counseling Sessions</td>
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<tr>
<td>ELSI Workshop and Case Presentations</td>
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<tr>
<td>Establishing a Cancer Risk Assessment Clinic</td>
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<td>Patients' Perspectives</td>
<td></td>
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<tr>
<td>Hereditary cancer syndromes</td>
<td></td>
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<tr>
<td>Hereditary Breast/Ovarian Cancer Syndromes</td>
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<tr>
<td>Hereditary Gastro-Intestinal Cancer Syndromes</td>
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<tr>
<td>Hereditary Endocrine Neoplasia Syndromes</td>
<td></td>
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<tr>
<td>Genodermatoses</td>
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<tr>
<td>Genitourinary Cancer Syndromes</td>
<td></td>
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<tr>
<td>Pediatric Cancer and Rare Syndromes</td>
<td></td>
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<tr>
<td>CCG Working Group (Interdisciplinary case conference)</td>
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<tr>
<td>Special clinical and educational training and resources</td>
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<tr>
<td>Clinical Breast Exam, Breast Self Exam Course</td>
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<tr>
<td>Topics in Cancer Genetics Research (Journal Club)</td>
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<tr>
<td>Genetics Link Web board</td>
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<tr>
<td>“Advances in Cancer Screening and Prevention: Practical Applications Across the Full Spectrum of Risk”</td>
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<tr>
<td>“Gastrointestinal Cancers: Critical Advances in Risk Assessment, Screening and Management”</td>
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<tr>
<td>“Issues in Women’s Healthcare: Cancer, Genetics and the Hormone Controversy”</td>
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Multimodal Curricular and Training Activities
(distance didactics, face-to-face training, professional development, case-based support)

Course Orientation (via Web conference)
- Participant/faculty introductions
- Curriculum/technical overview

Two Months Distance-mediated Didactics
27 Core Curriculum Modules
3 to 4 one-hour lectures per week (via Web-download or CD-ROM)
Weekly Review Sessions
Q&A / evidence-based updates (via Web download & discussion board)

Five Days Face-to-face Training
21 Case-based practice development workshops (at City of Hope campus)

12 Months Prescribed Professional Development Activities
CCG Working Group Web conference
Topics in CCG Research Web conference
Cancer Genetics Link Discussion board

Outcomes Assessments and Learning Evaluations
(knowledge, skills, professional self-efficacy, practice change)

Baseline Data Collection
Application (Level 1)
Knowledge test (Levels 3A/B)
Professional self-efficacy survey (Level 4)
Professional practice survey (Level 5)
Case Scenario #1 (Level 4)

Weekly Phase 1 Data Collection
Post-module knowledge tests (Levels 3A/B)
Post-module evaluations (Level 1)

Post Phase 2 Data Collection
Professional self-efficacy survey
Case Scenario #2 (Level 4)
Roundtable discussion session (Level 4)
Knowledge test (Levels 3A/B)
Course evaluation (Level 1)

Post Phase 3 Data Collection
Professional self-efficacy survey (Level 4)
Professional Practice Survey (Level 5)
Activities Tracking (Level 5)

Expanded CME Outcomes Assessment *
LEVEL 1 Participation
LEVEL 2 Satisfaction
LEVEL 3A Declarative Knowledge (Knows)
LEVEL 3B Procedural Knowledge (Knows how)
LEVEL 4 Competence (Shows How)
LEVEL 5 Performance (Does)
LEVEL 6 Patient Health
LEVEL 7 Community Health

*Adapted from Moore, et al. (2009)

Intensive Course Outcomes

**LEVEL 1**
Participation

**LEVEL 2**
Satisfaction

**LEVEL 3A**
Declarative Knowledge (Knows)

**LEVEL 3B**
Procedural Knowledge (Knows how)

**LEVEL 4**
Competence (Shows How)

**LEVEL 5**
Performance (Practice Change)

**LEVEL 6**
Patient Health (Records; Report)

**LEVEL 7**
Community Health

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A. Change in Declarative & Procedural Knowledge (Assessment Levels 3A/B)

- **Pre-post Knowledge Test**
  - Baseline: 59, 66, 67, 72
  - Post Phase 2: 58, 62, 64, 64

- **Key**
  - MD (n=48)
  - Advanced Practice Nurse (n=41)
  - Genetic Counselor (n=42)
  - Total (n=131)

B. Change in Case-based Skills (Assessment Level 4)

- **Pre-post Case Scenarios**
  - Baseline: 44
  - Post Phase 2: 51, 51, 59

- **Key**
  - MD (n=27)
  - Advanced Practice Nurse (n=28)
  - Genetic Counselor (n=28)
  - Total (n=83)

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Contribution to COIF ACCME Accreditation with Commendation

Pilot Phase
Intensive Course/Clinical Cancer Genetics Community of Practice Alumni through Winter 2015

532 Participants representing 48 states and 19 countries
59 International Participants:

Argentina - 2
Brazil - 15
Canada - 3
Chile - 4
Colombia - 6
Germany - 1
Hong Kong - 2
Hungary - 1
India - 1
Mexico - 10
Nigeria - 1
Peru - 4
Philippines - 1
Puerto Rico - 2
Spain - 1
Saudi Arabia - 1
Taiwan - 1
Trinidad - 1
Turkey - 1
Uruguay - 1
Community of practice – Central construct of *situated learning* (Lave and Wenger 1991)

Defined by a commitment to explore, co-generate knowledge and build relationships toward a “…shared practice, which directly affects the behaviors and abilities of its members.” (Wenger, et al., 2002)

*The essence of the community of practice is its members, who are connected by common learning and professional development goals*
**Weekly Clinical Cancer Genetics Working Group**

(Multidisciplinary team: medical and surgical oncologists, clinical geneticist, molecular geneticist, cancer risk counselors, clinical research associates)

**GCRA Delivery Method**
- GCRA with cancer risk counselor alone
- Initial GCRA with genetic counselor; MD seen on follow up visit
- Initial and follow-up GCRA with genetics team (genetic counselor and MD)

**Quality Assurance**
- Strategies for risk assessment
- Recommendations for Surveillance and Risk

**GCRA Research**
- Identify clinically relevant research themes
- Health services, clinical and behavioral outcomes research
- Enrollment in clinical cancer prevention trials
- Enrollment in Hereditary Cancer Registry
- Identify clinically relevant research themes

**Strategies for risk assessment**

**Recommendations for Surveillance and Risk**

- A CME-accredited Web-based forum for interdisciplinary review of GCRA cases
- Conducted every Wednesday 10:00-11:30 am PST

**Resources**
- Working Group Essentials Toolkit
- Working Group Discussion Board
- Recorded Sessions Archived (Streaming Media)
- Case conferencing helped participants identify their unique GCRA knowledge and skills gaps
- Deeper knowledge and skills needs reflected complex GCRA competencies
- Many gaps congruent with new knowledge identified (Finding #1)

<table>
<thead>
<tr>
<th>Knowledge/Skills Domain</th>
<th>Frequency</th>
<th>Knowledge Gap Identified by Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Genetics/ Recognizing Features of Hereditary Cancer</td>
<td>98</td>
<td>“I need to be much more familiar with criteria for Cowden and other syndromes and to apply them in my practice.” – MD Participant</td>
</tr>
<tr>
<td>Interpreting Genetic Test Results</td>
<td>89</td>
<td>“I need to learn more about what positive/negative/uninformative [test] results mean for the patient and the family.” – APN Participant</td>
</tr>
<tr>
<td>Documenting; Verifying Cancer Family History</td>
<td>79</td>
<td>“I am impressed with how confirmation of cancer histories makes a difference...this should help me be more aggressive about getting accurate histories.” – MD Participant</td>
</tr>
<tr>
<td>Assessing Cancer Family History; Developing Differential Diagnoses</td>
<td>70</td>
<td>“Need to reinforce my knowledge of more syndromes...to determine when pedigrees with multiple cancer types may be concerning.” – APN Participant</td>
</tr>
<tr>
<td>Estimating Mutation Probabilities/Empiric Cancer Risks</td>
<td>66</td>
<td>“I need to become more comfortable using different models to assess probabilities and risk.” – GC Participant</td>
</tr>
<tr>
<td>Developing Personalized Risk Management Recommendations</td>
<td>68</td>
<td>“I need to learn current recommendations for risk-reducing [surgeries]. Surprised to hear they might be recommended in an older patient.” – GC Participant</td>
</tr>
</tbody>
</table>

* Frequencies based on number of times each category of open-ended response was documented on Case Conference Feedback Forms.*
LinkedIn CCGCoP Group

City of Hope Clinical Cancer Genetics
Community of Practice

City of Hope Clinical Cancer Genetics Community of Practice brings cancer genetics practitioners from diverse practice settings together for professional learning, enduring patient-centered support and dynamic community-based research collaborations to promote quality care and improved patient outcomes across the U.S. and internationally.

Joanna Rudnick's IN THE FAMILY... watch it for free
Bita Nohoray, MS, LCGC
If you haven't yet seen Joanna Rudnick's IN THE FAMILY, you can view it online for free. Enjoy!

http://www.cultureunplugged.com/play/3605/in-the-Family

FIND FILMS ON: cultureunplugged.com
Watch films (documentaries, short films, talks & more) at this online film festival. Discover film-makers and their voices. Learn about social issues prevalent in the current world. Vote for the art & entertainment that is evolved and exists for...

Like (2) • Comment • Follow • 2 days ago

Ugur Ozbek, Abelardo Arias like this
City of Hope Clinical Cancer Genetics Community of Practice brings cancer genetics practitioners from diverse practice settings together for professional learning, enduring patient-centered support and dynamic community-based research collaborations to promote quality care and improved patient outcomes across the U.S. and internationally.
Evolving Model for Academic Health Center-mediated Communities of Practice

**Full Spectrum Program Training**
- **Synchronous and asynchronous distance learning & case-based training**
- **12 Weeks Distance Didactic Modules**
  - 2 to 3 per week
- **Weekly Web Conference Review Sessions**
- **CCG Working Group Web-based Case Conferences**
  - (City of Hope, Univ. of Chicago, US Oncology)
- **Community Genetics Link Discussion Board**
- **4 Days Face-to-face Workshops**
  - (City of Hope campus)

**Sub-Specialty Training Tracks**
- **8 Weeks Distance Didactic Modules**
  - Breast/Ovarian Gastrointestinal Subsets
- **Weekly Web Conference Review Sessions**
- **CCG Working Group Web-based Case Conferences**
  - (City of Hope, Univ. of Chicago, US Oncology)
- **Community Genetics Link Discussion Board**

**Enduring Practice-centered Professional Development**
- **Topics in Cancer Genetics Research Web Conferences**
- **Cancer Genetics Community Link Discussion Board**
- **CCG CoP Knowledge Center Web-based CME/practice Resources**
- **Cancer Screening & Prevention Program Network Affiliates**
- **Clinical Cancer Genetics Community Research Network**
- **Interdisciplinary Clinical/Research Faculty**
- **GCRA training alumni in community practices (U.S. & Int’l.)**

**Supported by NCI R25-CA171998-01A1 (Co-PI’s Blazer and Weitzel)**
City of Hope
Clinical Cancer Genomics Community of Practice (CCGCoP)
R25CA171998-01A1

Synchronous and asynchronous distance learning & case-based training

- 12 Weeks Distance Didactic Modules
- Weekly Web Conference Review Sessions
- Community Genetics Link Discussion Board

Full-spectrum program development

- 4 Days Face-to-face Workshops (City of Hope campus)

Continuing professional development & practice-based support

- Annual Face-to-face Update/Networking Conferences (City of Hope, Univ. of Chicago)

Track 1: Full Spectrum Multi-modal Training

- 12 Weeks Distance Didactic Modules
- Weekly Web Conference Review Sessions
- Community Genetics Link Discussion Board

Track 2: Full Spectrum Distance-only Training

- 12 Weeks Distance Didactic Modules
- Weekly Web Conference Review Sessions
- Community Genetics Link Discussion Board

Synchronous and asynchronous distance learning & case-based training

- CCG Working Group Web-based Case Conferences (City of Hope, Univ. of Chicago, US Oncology)

Interdisciplinary Clinical/Research Faculty

Clinical Cancer Genetics Community Research Network

GCRA training alumni in community practices

Cancer Genetics Community Link

Discussion Board

Topics in Cancer Genetics Research Web Conferences

CCG CoP Knowledge Center Web-based CME/practice Resources

Cancer Screening & Prevention Program Network Affiliates

Orientation Nov. 6, 2015

Phase 1
Nov. 9, 2015 - Feb 16, 2016

Phase 2
Feb 22-25, 2016

Phase 3
Mar, 2016 – Mar, 2017

Update Conference April 8-9, 2016
Annual Genomics Update Conferences: Opportunities to earn collaboration from community based clinicians, while enhancing quality

Next in Chicago, April 8-9, 2016
Clinical Cancer Genetics Community Research Network

- Growing Cancer Epidemiology Cohort
- Represents community-based oncogenetic practices across the U.S and Latin America
- Engages community-based clinicians, including underserved outreach clinics
- Same data collection instruments and protocols used across all collaborating sites

*Key ingredients for robust translational research*
Safety-net County Hospitals and Underserved Community Practices (4)
- Dekalb Medical Center, Decatur, GA
- John H. Stroger Hospital of Cook County, Chicago, IL
- Maricopa Medical Center, Phoenix, AZ
- Olive View Medical Center, Sylmar, CA

Community-Based Regional Medical Center (27)
- Aultman Hospital, Canton, OH
- The Cancer Center of Paoli Hospital, Paoli, PA
- Cancer Center of Santa Barbara, Santa Barbara, CA
- Edwards Comprehensive Cancer Center, Huntington, WV
- Emanuel Cancer Center, Turlock, CA
- Frederick Memorial Hospital, Oncology Care Consultants, Frederick, MD
- Good Samaritan Banner Health System, Phoenix, AZ
- Hall-Perrine Cancer Center, Cedar Rapids, IA
- Holy Cross Hospital - Michael & Dianne Bienes Cancer Center, Fort Lauderdale, FL
- Hunterdon Cancer Center, Flemington, NJ
- John Muir Medical Center, Concord, CA
- Kadlec Medical Center, Richland, WA
- Kootenai Cancer Center, Coeur d'Alene, ID
- Lynn Cancer Institute, Boca Raton, FL
- ProHealth Care Regional Cancer Center, Waukesha, WI
- Reading Hospital, West Reading, PA
- Saddleback Memorial Medical Center, Laguna Hills, CA
- Saint Alphonsus Regional Medical Center, Boise, ID
- St. Charles Hospital, Bend, OR
- St. Joseph Hospital, Orange, CA
- St. Jude Medical Center, Fullerton, CA
- Sutter Roseville Medical Center, Roseville, CA
- Texas Tech University, El Paso, TX
- UConn Health Center, Farmington, CT
- UF Health Cancer Center - Orlando Health, Orlando, FL
- Yakima Memorial Hospital, Yakima, WA
- Yuma Regional Medical Center, Yuma, AZ

Latin American Settings (6)
- Clinica del Country, Bogotá, Colombia
- Hospital of Porto Alegre, Brazil
- INCAN (Instituto Nacional de Cancerologia), Mexico City, Mexico
- INEN (Instituto Nacional de Enfermedades Neoplasicas), Lima, Peru
- University of Guadalajara, Guadalajara, Mexico
- University of Puerto Rico, San Juan, Puerto Rico

Individual/Multi-Physician Community Practices (11)
- Affinity Health System, Appleton, WI
- Agnesian Healthcare - Central Wisconsin Cancer Program, Fond du Lac, WI
- The Breast Institute at Northern Westchester Hospital, Mount Kisco, NY
- The Cancer Center at Presbyterian, Albuquerque, NM
- Covenant Health, Joe Arrington Cancer Research, Lubbock, TX
- Doctors' Hospital of Laredo, Laredo, TX
- New Mexico Oncology Hematology Consultants, Albuquerque, NM
- Mission Breast Center, Mission Viejo, CA
- Ohio Valley Surgeons, Inc., St. Clairsville, OH
- Suburban Hospital (Johns Hopkins Medicine), Bethesda, MD
CCGCRN informatics: High quality Pedigrees from a distributed consortium
### City of Hope Division of Clinical Cancer Genetics

*Center of excellence in cancer genetic/genomic risk assessment, research and education*

#### Cancer Screening & Prevention Program

- Registry/CCGCRN Cohort Research Enterprise
  - Biospecimens, family history, Risk factor and patient follow-up data

#### Epidemiology & Molecular Genetics Laboratory

- **Epidemiology**
  - Genotype/phenotype
  - Gene/environment effects

- **Health Outcomes**
  - Survival, new primary cancers
  - Effectiveness of interventions

- **Health Services**
  - Risk assessment methods
  - Tech-enabled delivery
  - mHealth applications

- **Health Behaviors**
  - Patient behaviors
  - Family communications

- **Health Disparities**
  - Promoting access/equity
  - Identifying/addressing barriers

- **Basic/Molecular**
  - Genomic discovery
  - Functional analysis
  - Tumor genomics

- **Translational Applications**
  - Genomic testing platforms
  - Cell free DNA cancer screening

- **Clinical Trials**
  - Prevention/Screening
  - Targeted treatment

#### Cancer Genetics Education Program

- **Intensive Course in Cancer Risk Assessment**
  - Practitioner-level competence for Healthcare Professionals
  - Source of engagement for CCGCRN

- **Clinical Cancer Genetics Community of Practice**
  - Procedural standardization and quality improvement
  - Professional satisfaction
  - CCGCRN member retention

- **Patient Conferences & Public Education**
  - Patient support/Public awareness
  - CCGCRN cohort outreach

- **Registry/CCGCRN Cohort Research Enterprise**
  - Biospecimens, family history, Risk factor and patient follow-up data

- **National & International Collaborations**
  - Molecular Epidemiology
  - Clinical Outcomes Consortia
Multiplex Genetic Testing for Cancer Susceptibility: Out on the High Wire Without a Net?

Susan M. Domchek and Angela Bradbury, University of Pennsylvania, Philadelphia, PA
Judy E. Garber, Dana-Farber Cancer Institute, Boston, MA
Kenneth Offit and Mark E. Robson, Memorial Sloan-Kettering Cancer Center and Weill Cornell Medical College, New York, NY

Genetic Cancer Susceptibility Testing: Increased Technology, Increased Complexity

Peter Paul Yu, Palo Alto Medical Foundation, Palo Alto, CA
Julie M. Vose, The University of Nebraska Medical Center, Omaha, NE
Daniel F. Hayes, The University of Michigan Comprehensive Cancer Center, Ann Arbor, MI
Next-Generation Testing for Cancer Risk: Perceptions, Experiences, and Needs Among Early Adopters in Community Healthcare Settings

Kathleen R. Blazer,1 Bita Nehoray,1 Ilana Solomon,1 Mariana Niell-Swiller,1 Julie O. Culver,1 Gwen C. Uman,2 and Jeffrey N. Weitzel1

<table>
<thead>
<tr>
<th>Knowledge/Expertise</th>
<th>Results, N=1 Respondent</th>
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<tbody>
<tr>
<td>Cost to patient/Lack of insurance coverage</td>
<td>23</td>
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<tr>
<td>“Cancer patients are burdened with many bills and I would not want to contribute to the anxiety caused by these bills, especially when the clinical yield may be low.” GC Respondent</td>
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<tr>
<td>Confusing/Ambiguous test results</td>
<td>10</td>
</tr>
<tr>
<td>“There is a greater chance that we would get ambiguous results, VUS, or a mutation that may not track with the cancer in other family members, all of which could lead to confusion.” GC Respondent</td>
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*Number of times each category of response was documented on open-ended survey prompts.*
Community clinician utilization of next-generation sequencing tools for GCRA

Rapidly changing landscape: 6-month interval change in use

From: Blazer, et al. ASCO 2013; Genetic Testing and Biomarkers 2015
CCGCoP Case Conferences
Multigene Panel Results (N=204) Jan 2012-2013

*112 total VUSs
(16 cases w 2; 6 w 3; 1 w 4)

- Variant of Uncertain Significance*
  n=95 (47%)
- Deleterious Low/Moderate Risk
  n=16 (8%)
- Deleterious High Penetrance
  n=24 (12%)
- Inconclusive
  n=2 (1%)
• ASCO affirms that it is sufficient for cancer risk assessment to evaluate genes of established clinical utility that are suggested by the patient’s personal and/or family history.
• Because of the current uncertainties and knowledge gaps, providers with particular expertise in cancer risk assessment should be involved in the ordering and interpretation of multigene panels.
Conclusions

- Training in genomic cancer risk assessment and counseling is important for clinical implementation of precision medicine for more effective treatment and prevention, and should be disseminated.

Participating in Web-based case conferences concurrently with distance didactics:
- Generates new learning and reinforced existing knowledge in a broad spectrum of GCRA knowledge and skills domains.
- Prompted participants to identify knowledge gaps, apply new knowledge and improve practice.
- Participation in research registries is a critical contribution to wellness.
- The remarkable advances in genomic analysis technologies should be brought to bear to enhance access globally.