



CPIC OPEN MEETING

June 6 - 7, 2019

St. Jude Children's Research Hospital

Memphis, TN

Clinical Pharmacogenetics
Implementation Consortium

WELCOME

Welcome to Memphis, St. Jude, and the CPIC Open Meeting



The Clinical Pharmacogenetics Implementation Consortium (CPIC®) is an NIH-funded international consortium dedicated to facilitating the use of pharmacogenetic tests for patient care. CPIC started as a shared project between PharmGKB and the Pharmacogenomics Research Network (PGRN) in 2009. Teri Klein (Stanford, PharmGKB) and I co-founded CPIC in 2009, and CPIC staff are located where we are: at St. Jude Children's Research Hospital and at Stanford. You will have the chance to meet many CPIC staff during the meeting. Our guidelines and much of our work is also made possible by selfless and dedicated volunteers and CPIC members, particularly our guideline authors who are experts in each guideline's content.

We are pleased to be able to host this CPIC meeting here in the Marlo Thomas Center for Global Education and Collaboration, opened at St. Jude in 2014. Marlo's father, the entertainer and humanitarian Danny Thomas, founded St. Jude, which opened its doors in 1962, with a mission that remains true today: to advance cures, and means of prevention, for pediatric catastrophic diseases through research and treatment. Consistent with the vision of Danny Thomas, no child is denied treatment based on race,

religion or a family's ability to pay. Research and patient care have always been integrated at St. Jude, consistent with Danny's vision, and thus at the same time CPIC was started, St. Jude began a clinical trial (PG4KDS) with a goal to implement preemptive clinical pharmacogenetic testing for all St. Jude patients. Over 5,000 patients have been enrolled on PG4KDS. Our dual interests in facilitating pharmacogenetic testing world-wide (via CPIC) and for all St. Jude patients has led us to organize this meeting. The meeting will feature external experts in clinical implementation of pharmacogenetics, in addition to sharing practical experience of St. Jude faculty and staff on the challenges involved in providing clinical pharmacogenetic testing for a large cohort of patients. Without St. Jude's support, our program in clinical implementation of pharmacogenetics would not be possible.

We have organized the program to include speakers from a variety of backgrounds, all dealing with practical "in the trenches" considerations. We have allotted a substantial percentage of the agenda to discussion by speakers, panelists and meeting registrants. With over 50 submitted abstracts covering a wide array of implementation topics, the poster session on Thursday evening will allow for further discussions and chances for sharing best practices among participants. Dr. Marc Williams will kick off the CPIC meeting with a talk on genomic medicine that will also be the St. Jude Grand Rounds lecture for the week, so you will see St. Jude faculty and clinical staff members joining the audience for some of the CPIC meeting.

Our meeting offers ACCME and ACPE-accredited continuing education for physician and pharmacist registrants. Our meeting objectives are to:

- 1. Identify practical considerations for choosing a genetic testing platform and clinical laboratory.**
- 2. Summarize the risks and benefits of returning pharmacogenetic test results directly to patients and provide examples of good practices.**
- 3. Describe barriers to implementation of pharmacogenetics using different EHRs and strategies to overcome barriers.**
- 4. Define successful implementation of pharmacogenetics and associated improvements in patient outcomes.**
- 5. Outline the current and emerging application of pharmacogenetics in the field of psychiatry.**
- 6. Describe the challenges to CPIC guideline development. Explain the method CPIC uses for evaluating pharmacogenetics literature.**
- 7. Identify methods (successes and pitfalls) used to implement pharmacogenetics successfully.**

We are grateful for the assistance of many individuals for organizing the meeting, particularly Dr. Kelly Caudle (CPIC Director kelly.caudle@stjude.org), Ms. Dawn Bowen (Coordinator – Pharmaceutical Sciences Administration dawn.bowen@stjude.org) and Ms. April Blankenship (Administrative Specialist, Pharmaceutical Sciences Department (april.blankenship@stjude.org)).

We hope that this is a productive and enjoyable meeting for all of you. Welcome!

Mary V. Relling, PharmD, Chair, Pharmaceutical Department, St. Jude Children's Research Hospital

GENERAL INFORMATION

LOCATION OF CONFERENCE

Marlo Thomas Center for Global Education and Collaboration, Main Auditorium
St. Jude Children's Research Hospital Campus
262 Danny Thomas Place
Memphis, TN 38105-3678
email dawn.bowen@stjude.org or april.blankenship@stjude.org for questions.

CHECK-IN HOURS

All attendees please pick up meeting materials in the Marlo Thomas Center Atrium on Thursday between 7:00 and 8:00 am. Check-in is located next to the Auditorium where the meeting will take place.

SHUTTLE BUS SERVICE

TLS shuttle bus service will provide transportation to St. Jude Children's Research Hospital from the Peabody Hotel each morning; return service will also be provided at the conclusion of Thursday's activities. Transportation from St. Jude to the Memphis International Airport will be provided on Friday. The bus schedule is detailed below.

| Date | Pick-Up Locations | Time |
|-------------------------|--|-------------------------|
| Thursday, June 6 | The Peabody Hotel | 6:45AM |
| | St. Jude, Marlo Thomas Center | 6:00PM |
| Friday, June 7 | The Peabody Hotel | 6:45AM |
| | St. Jude, Marlo Thomas Center <i>(to Memphis International Airport, shuttle departures will be every 30 minutes)</i> | 11:00AM - 5:00PM |

PARKING

Limited reserved parking will be set aside for attendees. The parking will be located in Garage 3, please see campus map. Please allow 15 - 30 minutes to clear security and find the Marlo Thomas Center Building. Attendee names will be provided to St. Jude Security.

UBER/LYFT/TAXI NOTE

Please allow time to get through St. Jude Security each morning. Ridesharing services (Uber, Lyft, taxis, etc.) will not be allowed on campus and you will be dropped off at the gate. Security will direct you to the conference site.

TWITTER

Join the conversation on Twitter by following @cpicpgx and using the meeting hashtag #CPIC2019.



@cpicpgx
#CPIC2019

GENERAL INFORMATION

DINING

Breakfast, lunch and coffee/tea breaks are provided for all registered meeting attendees on Thursday and Friday. Dinner is on your own, see the back page for a list of suggested restaurants in downtown Memphis. St. Jude also offers food services in the Kay Kafe cafeteria from 7:00 am to 9:00 pm.

SECURITY BADGES

St. Jude security requires that employees and visitors wear badges at all times while on campus.

POSTERS

Size of poster board is 47" wide x 64" tall. Poster boards will be available for viewing all day on Thursday.

MOTHERS ROOMS

St. Jude Children's Research Hospital offers several Mothers Rooms around the campus for symposium registrants. These rooms can be used to breastfeed your infant or to express and store milk while at the symposium. The closest rooms to use during symposium hours are the Mothers' Room located at the Chili's Care Center and Danny Thomas Research Center. Please seek staff assistance at Check-In for access to these rooms.

PHOTOGRAPHS

In order to respect their privacy, St. Jude Children's Research Hospital prohibits employees, visitors and guests from taking photographs of, or with, patients and/or families.

TOURS OF ST. JUDE

Optional tours can be arranged by appointment on Friday, June 7th at Noon or later. Please email dawn.bowen@stjude.org by May 28th to sign up.

INTERNET ACCESS

Computers, tablets, smartphones and other devices equipped with a functioning wireless network adapter can access St. Jude's wireless internet service HopeNet.

Connecting to HopeNet

1. Open the appropriate wireless connection window on your device and select HopeNet.

- Microsoft Windows PC users: Open the Windows Control Panel and select the Windows Network and Sharing Center. Select HopeNet from the list of available options
- Apple Mac users: Click the Network icon on the System Preferences page and select HopeNet
- Apple Tablets and Smartphones: From the Settings application, select Wi-Fi and select HopeNet
- Android Smartphones: Open the Wireless & Network Settings screen and select HopeNet

2. Your device should automatically open a page asking you to accept the terms and conditions. Once you accept the terms and conditions, you will be connected to our guest wireless network *** If it does not connect, please make sure HopeNet is selected and enter the following address in your internet browser: 10.0.0.1*

CONTINUING EDUCATION INFORMATION

PHARMACISTS

Pharmacists can claim credit for Day 1, Day 2, or both; credit is available to preregistered attendees only. Please see the instructions below. If you have any question, please contact Jennifer Pauley at jennifer.pauley@stjude.org.

DAY 1



CPIC Open Meeting Day 1 is approved for 7.00 credit hours (0.7 CEU). You must be present for the entire day to receive ACPE credit. The St. Jude Children's Research Hospital Pharmaceutical Department is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. This program was partially funded by NIH grant, U24HG010135. The program number for this activity is 0181-0000-19-163-L01-P. Pharmacy continuing education credit will be available to all participants who pay a registration fee, sign-in, attend all sessions, and complete a program evaluation and assessment. Credits will be uploaded and viewable on-line at www.napb.net within approximately two weeks following the date of the presentation.

DAY 2



CPIC Open Meeting Day 2 is approved for 3.25 credit hours (0.32 CEU). You must be present for the entire day to receive ACPE credit. The St. Jude Children's Research Hospital Pharmaceutical Department is accredited by the Accreditation Council for Pharmacy Education as a provider of continuing pharmacy education. This program was partially funded by NIH grant, U24HG010135. The program number for this activity is 0181-0000-19-164-L01-P. Pharmacy continuing education credit will be available to all participants who pay a registration fee, sign-in, attend all sessions, and complete a program evaluation and assessment. Credits will be uploaded and viewable on-line at www.napb.net within approximately two weeks following the date of the presentation.

CONTINUING EDUCATION INFORMATION, CONT.

PHYSICIANS AND OTHER ATTENDEES



St. Jude Children's Research Hospital is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

St. Jude Children's Research Hospital designates this live activity for a maximum of 9.75 *AMA PRA Category 1 Credits*™. Physicians should only claim credit commensurate with the extent of their participation in the activity.

Evaluation and Claiming Certificates

To claim *AMA PRA Category 1 Credit* or attendance credit for this activity, you must attend the sessions and complete the evaluation by following the instructions below:

- Go to cme.stjude.org
- Sign in using the email address you used when registering for this conference and your password (to set or re-set your password, click "forgot my password" and follow the instructions; St. Jude employees should choose "Sign in with your St. Jude ID")
- Click the gray MyCME button in the menu bar of your screen and choose Evaluations and Certificates
- Click "Complete Evaluation" by Clinical Pharmacogenetics Implementation Consortium (CPIC) Meeting to complete the evaluation for this activity
- You will then be returned to the Evaluations and Certificates screen to print, download, or email your certificate.

If you have questions about claiming your CME or attendance certificate, please contact us at cme@stjude.org.

DISCLOSURE OF FINANCIAL RELATIONSHIPS

All individuals in a position to control the content of this activity (such as faculty, presenters, and planners) were asked to complete a statement regarding all relevant financial relationships between themselves or their spouse/partner and any commercial interest (defined by the ACCME as "any entity producing, marketing, re-selling, or distributing health care goods and services consumed by, or used on, patients"). All relevant relationships are disclosed below. St. Jude CME has reviewed and resolved any conflicts of interest that were identified.

No other speakers, planners, or other individuals with control over content have disclosed relevant financial relationships with commercial interests for themselves or their spouse/partner.

| Name | Company | Type of Relationship |
|------------------------------|---------------------------------|-------------------------------|
| Mark H. Dunnenberger, PharmD | Vertias Genetics, Admera Health | Consultant fees |
| Philip E. Empey, PharmD, PhD | 23andMe | Supported/contracted research |
| Vicky M. Pratt, PhD | Boston Healthcare | Consultant fees |
| Mary V. Relling, PharmD | Servier Laboratories | Supported/contracted research |

CAMPUS MAP

The meeting is being held in the Marlo Thomas Center for Global Education and Collaboration, Auditorium

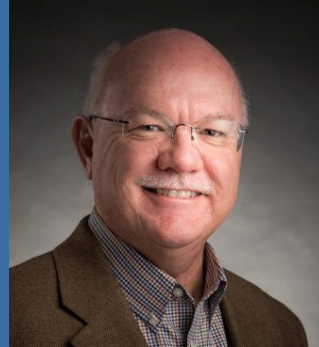


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|----------------------|--------------------------------|----------------------------|----------------------------|
| Entrance Gate (1-5) | Danny Thomas/ALSAC Pavilion | Kay Research & Care Center | Kmart St. Jude Life Center |
| Patient Only Parking | Patient Care Center | 545 Danny Thomas Place | Longinotti Building |
| Marlo Thomas Center | Richard C. Shadyac ALSAC Tower | 595 Building | Barry Building |
| Kay Kafe | Danny Thomas Research Center | 567 Danny Thomas Place | Tri Delta Place |
| Mail Room | Integrated Research Center | 505 Building | ALSAC Gift Shop |
| Dock (1-7) | Central Energy Plant | 305 Building | St. Jude GMP Facility |
| | AutoZone Garage 1 | Tamer-Rashid (ALSAC HQ) | 448 North Second |
| | Incinerator/Hazardous Waste | Domino's Event Center | 160 Shadyac Avenue |
| | Chili's Care Center | AutoZone Garage 2 | Garage 3 |

SPEAKERS & PANELISTS



SAMUEL 'SANDY' ARONSON, MA
Parnters Healthcare
Partners Personalized Medicine
Boston, MA



DONALD BAKER, PHARM D, MBA
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Hospital
Memphis, TN



GILLIAN BELL, PHARM D
Mission Health
Fullerton Genetics Center
Asheville, NC



JEFFREY BISHOP, PHARM D
University of Minnesota
College of Pharmacy
Minneapolis, MN



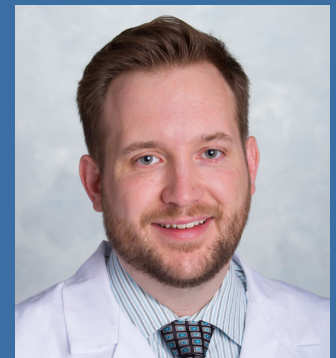
KELLY CAUDLE, PHARM D, PH D
CPIC DIRECTOR
St. Jude Children's Research Hospital
Memphis, TN



LARISA CAVALLARI, PHARM D
University of Florida
College of Pharmacy
Gainesville, FL



ANDRIA DEL TREDICI, PH D
Millennium Health
San Diego, CA



MARK DUNNENBERGER, PHARM D
NorthShore University
Healthsystem
Evanston, IL



PHIL EMPEY, PHARM D, PH D
Pitt/UPMC Institute of Precision
Medicine
Pittsburgh, PA



ANDREA GAEDIGK, PH D
Children's Mercy Hospital
Kansas City, MO



DAVID GREGORNIK, PHARM D
University of Minnesota
College of Pharmacy
Minneapolis, MN



H.J. GUCHELAAR, PHARM D
Leiden University; Leiden Academic
Centre for Drug Research
Leiden, The Netherlands

SPEAKERS & PANELISTS



CYRINE HAIDAR, PHARM D
St. Jude Children's Research
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Memphis, TN



JAMES HOFFMAN, PHARM D, MS
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Stanford University
Biomedical Data Science
Stanford, CA



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of Medicine
Nashville, TN



RON VAN SCHAIK, PH D
Erasmus University Medical Center
Rotterdam, The Netherlands



MICHELLE WHIRL-CARRILLO, PH D
Stanford University
Stanford, CA



MARC WILLIAMS, MD
Geisinger Health System
Danville, PA

MEETING AGENDA

THURSDAY, JUNE 6, 2019

BREAKFAST

7:00AM - 8:00AM Marlo Thomas Center Atrium

St. Jude Grand Rounds: Implementation of Genomic Medicine - Marc S. Williams, MD, Geisinger

8:00AM - 9:00AM Marlo Thomas Center Auditorium

BREAK

9:00AM - 9:15AM Marlo Thomas Center Atrium

Practical Considerations for Choosing a Genetic Testing Platform and Clinical Lab

Moderator: Ron van Schaik, Ph.D., Erasmus MC

9:15AM - 11:00AM

CYP2C19 Genotyping Recommendations: A Report of the Association for Molecular Pathology
9:15AM - 9:35AM *Vicky M. Pratt, Ph.D., Indiana University School of Medicine*

Unexpected Results due to Pitfalls in Quality of Pharmacogenomic Testing
9:35AM - 9:55AM *Gwen McMillin, Ph.D., ARUP Laboratories*

PharmCAT - A Pharmacogenomics Clinical Annotation Tool
9:55AM - 10:15AM *Michelle Whirl-Carrillo, Ph.D., Stanford University*

Panel Discussion: Genotyping platforms and Clinical Labs
10:15AM - 11:00AM
Vicky Pratt, Ph.D., Indiana University
Gwen McMillin, Ph.D., ARUP Laboratories
Michelle Whirl-Carrillo, Ph.D., Stanford University
Andria Del Tredici, Ph.D., Millennium Health
Andrea Gaedigk, Ph.D., Children's Mercy Kansas City

COFFEE BREAK

11:00AM - 11:10AM Marlo Thomas Center Atrium

Getting Results to Patients

Moderator: Sara Van Driest, M.D., Ph.D., Vanderbilt University School of Medicine

11:10AM - 12:00PM

Risks and benefits of returning results directly to patients
11:10AM - 11:30AM *Phil Empey, Pharm.D., Ph.D., Pitt/UPMC Institute of Precision Medicine*

Electronic access to results via SmartCard
11:30AM - 11:50AM *Henk-Jan Guchelaar, Pharm.D., Ph.D., Leiden University*

11:50AM - 12:00PM Q&A

LUNCH BREAK

12:00PM - 1:00PM
Buffet Lunch: Marlo Thomas Center Atrium

Eating Areas: Auditorium; Meeting Room 5; open areas, outdoors

Dissemination Workgroup working lunch, room to be announced
Informatics Workgroup working lunch, room to be announced

MEETING AGENDA

THURSDAY, JUNE 6, 2019

Instantiating Pharmacogenomic Electronic Clinical Decision Support: real-world challenges and opportunities associated with implementing CDS

Moderator: James Hoffman, Pharm.D., St. Jude Children's Research Hospital

1:00PM - 3:00PM Marlo Thomas Center Auditorium

Informatics perspective

1:00PM - 1:20PM

Samuel Aronson, Partners Healthcare

Implementer's perspective: Navigating the electronic health record at a rural community health system

1:20PM-1:40PM

Gillian Bell, Pharm.D., Mission Health

Implementer's perspective: Implementing pharmacogenetics at a community health system

1:40PM-2:00PM

Mark Dunnenberger, Pharm.D., NorthShore University Healthsystem

Panel Discussion: Biggest and unanticipated challenges in developing and using pharmacogenomic CDS in the EHR

2:00PM - 3:00PM

Samuel Aronson, Partners Healthcare

Gillian Bell, Pharm.D., Mission Health

Mark Dunnenberger, Pharm.D., NorthShore University Healthsystem

David Gregornik, Pharm.D., University of Minnesota, College of Pharmacy

Henk-Jan Guchelaar, Pharm.D., Ph.D., Leiden University

COFFEE AND SNACK BREAK

3:00PM - 3:15PM

Marlo Thomas Center Atrium

Creating a Database of CPIC Guidelines with Access via an API

3:15PM - 4:15PM

Teri Klein, Ph.D., Stanford University

Implementation and Outcomes with CYP2D6-Guided Opioid Prescribing for Pain Management

4:15PM - 4:45PM

Larisa Cavallari, Pharm.D., University of Florida

POSTER SESSION, WINE & CHEESE, NETWORKING

4:45PM - 6:00PM

Marlo Thomas Center Atrium

MEETING AGENDA

FRIDAY, JUNE 7, 2019

BREAKFAST

7:00AM - 8:00AM

Marlo Thomas Center Atrium

Pharmacogenetics in psychiatry: challenges and opportunities in advancing research and patient care

8:00AM - 8:45AM

Jeff Bishop, Pharm.D., University of Minnesota

“Hands On” Program: From Guideline to Implementation

Moderator: Kelly E. Caudle, Pharm.D., Ph.D., BCPS

Challenges to CPIC guideline development

8:45AM - 9:15AM

Following the CPIC guideline development process: Exceptions to the rules

Kelly Caudle, Pharm.D., Ph.D., St. Jude Children’s Research Hospital

Challenges to variant classification

Michelle Whirl-Carrillo, Ph.D., Stanford University

Open Discussion

9:15AM - 9:25AM

Pharmacogenetics Implementation: St. Jude Perspectives

9:25AM - 9:50AM

Positioning Pharmacogenetics within the Health-System

James Hoffman, Pharm.D., St. Jude Children’s Research Hospital

Clinical Implementation of Pharmacogenetics: Daily Challenges

Cyrine Haidar, Pharm.D., St. Jude Children’s Research Hospital

Open Discussion

9:50AM - 10:05AM

Pharmacogenomic decision support: Integration from laboratory into the EHR

10:05AM-10:45AM

Data receipt, QC issues, result integration in EHR, and CDS.

Don Baker, Pharm.D., and

Nancy Kornegay, M.B.A., St. Jude Children’s Research Hospital

Anticipating challenges as the pixels meet the pavement

Sara Van Driest, M.D., Ph.D., Vanderbilt University School of Medicine

Open Discussion

10:45AM - 11:15AM

The Future of CPIC

11:15AM - 11:30AM

Mary Relling, Pharm.D., St. Jude

Box lunches provided for pick-up in the Marlo Thomas Center Atrium

11:30AM

Tours of St. Jude

12:00PM - 1:00PM

by appointment, must pre-register

ABSTRACTS

Predicting Novel Regulatory Snps And Adverse Drug Reactions In Pharmacogenes With Snpclinic V.1.0 Software

Author(s):

Ernesto Prado Montes de Oca, Ph.D.; Rocío del Carmen Chávez Álvarez, Ph.D.

Personalized Medicine National Laboratory

Development And Initial Assessment Of A Pharmacogenetics Education Module For Genetic Counseling Students

Author(s):

Rachel Mills, MS; Jennifer Eichmeyer, MS; Kristin Maloney, MS; Allison Hazell, MS; Emily Glogowski, MS; Kayla Sheets, MS; Tara Schmidlen, MS.

Duke University; Boise State University; University of Maryland; MedCan; GeneDx; Vibrant Gene; Geisinger

Initial Characterization And Evaluation Of Pharmacogenetic Best Practice Alerts At Sanford Health

Author(s):

Jordan Baye, PharmD, MA, BCPS; Natasha Petry, Pharm D BCACP; Amanda Massmann, PharmD; Aissa Aifaoui, PharmD; April Schultz, PharmD

Sanford Imagenetics

Evaluation Of The Impact Of Pharmacogenomic Testing Results On Psychopharmacotherapy Prescribing Patterns

Author(s):

Jill Nofziger, PharmD, BCPS; Sandra Mullen, PharmD, BCPP
Virginia Commonwealth University Health System

First Year Experiences Of A Pharmacogenetics Service At A Large Academic Medical Center

Author(s):

Kristen Ward, PharmD; Amy Pasternak, PharmD; Mohammad Ateya, PharmD; Hae Mi Choe, PharmD; Amy Thompson, PharmD; John S. Clark, PharmD; Vicki Ellingrod, PharmD
University of Michigan

The Potential Impact Of Pharmacogenetic Testing In Alberta, Canada

Author(s):

Chad Bousman, PhD; Mikayla Fan, BSc
University of Calgary

Pilot Evaluation Of A Computable Pharmacogenetics Toolkit To Interpret And Provide Cpvc Treatment Recommendations.

Author(s):

Amy Pasternak, PharmD; David Hayes, PharmD Candidate; Allen Flynn, PharmD, PhD
University of Michigan

Cyp2c19 Genotype-Guided Voriconazole Prophylaxis After Allogeneic Hematopoietic Cell Transplant

Author(s):

Jai Patel, PharmD; Issam Hamadeh, PharmD; Myra Robinson, MSPH; Zainab Shahid, MD; James Symanowski, PhD; Nury Steuerwald, PhD; Emily Reese, PhD; Dragos Plesca, PharmD, PhD; Justin Arnall, PharmD; Margaret Taylor, PharmD; Jigar Trivedi, PharmD; Michael Grunwald, MD; Nilanjan Ghosh, MD, PhD; Belinda Avalos, MD; Edward Copelan, MD

Levine Cancer Institute

Physicians? Opinions And Expectations Towards Pharmacogenetic Testing And Pharmacists? Expanded Role

Author(s):

Suhaib Muflih, PhD, PharmD; Barry Bleidt, PhD; Lynn Lafferty, PharmD; Mohammad Shawaqfeh, PhD, PharmD

Jordan University of Science and Technology; Nova Southeastern University; King Saud Bin Abdulaziz University for Health Sciences

High Stakes Poker: Cyp2d6 Haplotype Prediction By Computational Phasing Using 1000 Genomes Project Data

Author(s):

Charity Nofziger, PhD; Giada Scantamburlo, PhD; Simone Vanoni, PhD; Markus Paulmichl, MD; Erin C Boone, PhD; Ryan F Lata, PhD; Andrea Gaedigk, PhD

PharmGenetix GmbH; Humanomed; Children's Mercy Kansas City

Characterization Of Reference Materials For Genetic Testing Of Rare Cyp2d6 Alleles: A Get-Rm Collaborative Project

Author(s):

Andrea Gaedigk, PhD; Amy Turner, PhD; Robin Everts, PhD; Stuart Scott, PhD; Praful Aggarwal, PhD; Ulrich Broeckel, PhD; Gwendolyn McMillin, PhD; Roberta Melis, PhD; Erin Boone, PhD; Victoria Pratt, PhD

Children's Mercy Kansas City; Medical College of Wisconsin; RPRD Diagnostics LLC; Agena Bioscience; Icahn School of Medicine; Sema; University of Utah; ARUP Laboratories; Indiana University

Prospective Cyp2c19 Genotyping To Guide Antiplatelet Therapy Following Percutaneous Coronary Intervention. A Pragmatic Randomized Clinical Trial

Author(s):

Sony Tuteja, PharmD, MS; Henry Glick, PhD; William Matthai, MD; Irving Nachamkin, DrPH, MPH; Ashwin Nathan, MD; Gene Chang, MD; Taisei Kobayashi, MD; Saif Anwaruddin, MD; John Hirshfeld, MD; Robert L. Wilensky, MD; Howard C. Herrmann, MD; Daniel M. Kolansky, MD; Daniel J. Rader, MD; Jay Giri, MD, MPH

University of Pennsylvania Perelman School of Medicine

ABSTRACTS

An E.M.R. Based Study To Determine Frequency, Prescribing Pattern And Characteristics Of Patients Receiving Drugs With Pgx Guidelines

Author(s):

Alexander Stoddard, MS; George MacKinnon, PhD; Raul Urrutia, MD; Bradley Taylor, BS; Ulrich Broeckel, MD
CTSI, Medical College of Wisconsin, School of Pharmacy, Medical College of Wisconsin; Genomic Sciences and Precision Medicine Center, Medical College of Wisconsin

Are Cyp2d6 Phenotypes Associated With Adverse Outcomes Related To Codeine And Tramadol?

Author(s):

Guilherme Lopes, PhD; Suzette Bielinski, PhD, MEd, FAHA; John Black, MD; Ann Moyer, MD, PhD; Debra Jacobson, MS; Ruoxiang Jiang, BS; Jennifer St. Sauver, PhD
Mayo Clinic – Rochester MN

Clinical Implementation Of Preemptive Ryr1/Cacna1s Genotyping On Pg4kds

Author(s):

Keito Hoshitsuki, PharmD; Cyrine Haidar, PharmD; Kristine Crews, PharmD; Colton Smith, PhD; Wenjian Yang, PhD; James Hoffman, PharmD, MS; Kayla Hamilton, MS; Ulrich Broeckel, MD; Mary Relling, PharmD; Michael Rossi, DO
St. Jude Children's Research Hospital; RPRD Diagnostics LLC

Asymmetric Pharmacodynamic Effects Of Nonsynonymous Mutations

Author(s):

Noam Morningstar-Kywi, PharmD Candidate; Ian Haworth, PhD; Roger Duncan, PhD; Scott Mosley, PharmD
USC School of Pharmacy

Clinical Implementation Of Pharmacogenomics Via A Health System-Wide Research Biobank: The University Of Colorado Experience

Author(s):

Christina Aquilante, PharmD; David Kao, MD; Kristy Crooks, PhD; Emily Hearst, MHA; Yee Ming Lee, PharmD; Jan Lowery, PhD; Rasika Mathias, ScD; Andrew Monte, MD, PhD; Nicholas Rafaels, MS; Matthew Rioth, MD; Katy Trinkley, PharmD; Connie Williamson, MS; Kathleen Barnes, PhD
University of Colorado; UHealth; Johns Hopkins University

Pharmacogenetics Of Risperidone Therapy In Autism: Association Analysis Of Dopamine Receptor D2 Genes With Prolactin Elevation And Response To Risperidone

Author(s):

Yaowaluck Hongkaew, PhD; Nattawat Ngamsamut, MD; Wiranpat Kittitharaphan, MD; Penkhae Limsila, MD, Ph; Bob Wilffert, PhD; Chonlaphat Sukasem, PhD
Division of Pharmacogenomics and Personalized Medicine, Department of Pathology, Faculty of Medicine Ramathibodi Hospital, Mahidol University, Bangkok, Thailand; Yuwaprasart Waithayopatham Child and Adolescent Psychiatric Hospital, Department of Mental Health Services, Ministry of Public Health, Thailand; Department of Pharmacotherapy, -Epidemiology & -Economics, Groningen Research Institute of Pharmacy, University of Groningen, Groningen, the Netherlands.

Use Of Pharmacogenomic (Pgx) Information In A Referential Drug Information Database

Author(s):

Kandace Schuft, PharmD; Sarah Warren, PharmD; Nadia Haque, PharmD; Sarah Isley, PharmD; Stephen Stout, PharmD; Daniel Streetman, PharmD, MS
Wolters Kluwer

The Integration Of Cpic Guidelines Into A Referential Drug Information Database

Author(s):

Kandace Schuft, PharmD; Sarah Warren, PharmD; Nadia Haque, PharmD; Sarah Isley, PharmD; Stephen Stout, PharmD, MS; Daniel Streetman, PharmD, MS
Wolters Kluwer

Variants In Htr2a And Slc6a4 Influence Sertraline Dose, Response, And Tolerability In Pediatric Anxiety And Depressive Disorders

Author(s):

Ethan Poweleit, BS; Stacey Aldrich, MS; Lisa Martin, PhD; David Hahn, PhD; Jeffrey Strawn, MD; Laura Ramsey, PhD
Cincinnati Children's Hospital Medical Center; University of Cincinnati

Paper To Provider: A Systematic Approach To Comprehensive Reporting Of Complex Pharmacogenomic Data

Author(s):

Vaishnavi Soundararajan, PharmD, MS; Wrenda Teeple, PharmD; Megan Adelman, PharmD; Lauren Lemke, PharmD Candidate; Kathleen Bosse, PharmD
OneOme, LLC

Parc Report: A Health-System Focus On Reimbursement And Patient Access To Pharmacogenomic Testing

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Annotation Of Cpic Guidelines On Pharmgkb

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Landscape Of Pharmacogenomic Testing In A Us Managed Care Population

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A Systematic Approach To Designing Pharmacogenetic Clinical Decision Support For Medication Classes Affected By Multiple Genes

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Identification Of Novel Cyp2d6 Haplotypes That Interfere With Taqman Copy Number Analysis

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The Pharmacoscan Array: Performance Across Biological Specimens

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Tpmt And Nudt15 Genotyping For Comprehensive Detection Of Thiopurine Sensitivity In Multi-Ethnic Populations

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Slco1b2-Genotype Guided Methotrexate Dosing Provides Equivalent Exposure And Therapeutic Response In A Murine Model Of Collagen-Induced Arthritis

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Population-Wide Pharmacogenetic Actionability Between African Americans And European Americans In Alabama

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Effects Of Cyp2c19 And Cyp2d6 Gene Polymorphisms And Methylation On Plasma Levels Of Escitalopram And Aripiprazole And Treatment Outcome In The Can-Bind-1 Sample

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Preemptive Pgx Population Sequencing Using Ngs Reveals Rare, Predicted Lof Variants In Tpm1 And Nudt15

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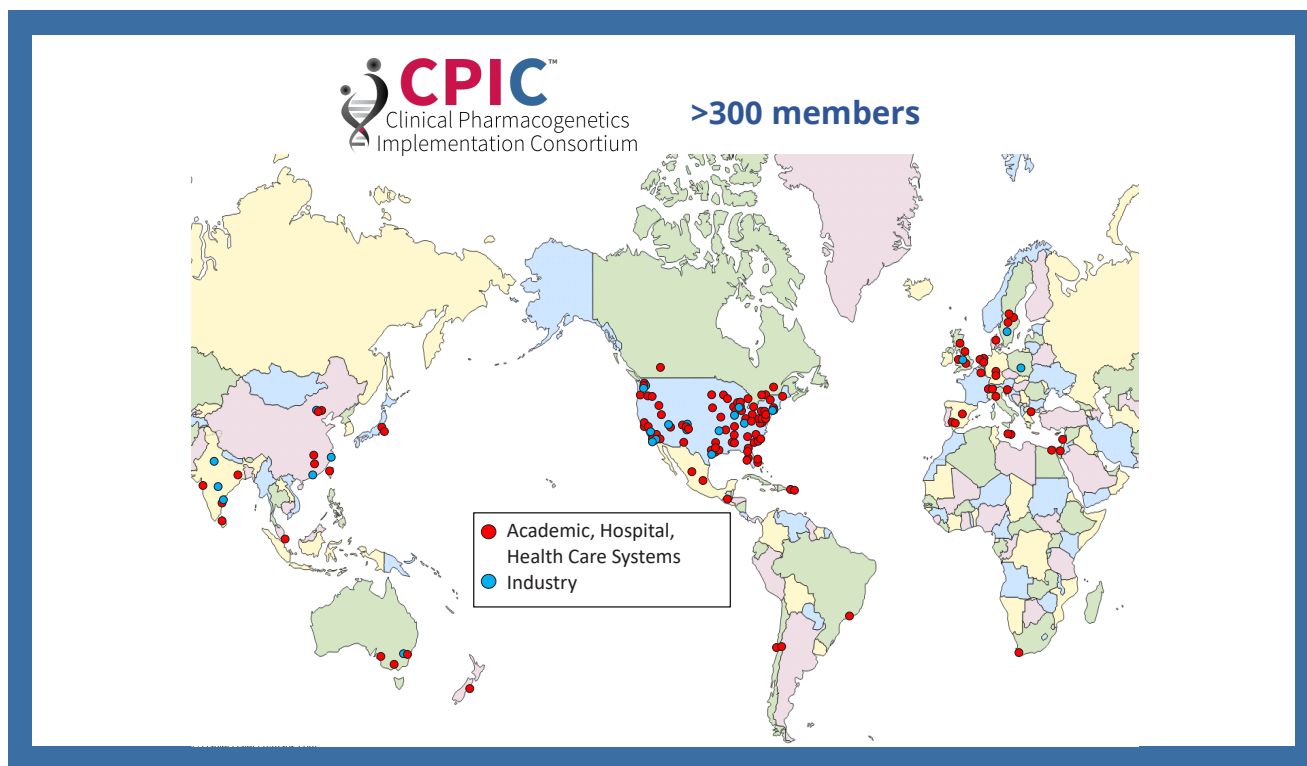
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A Probabilistic Method For Comprehensive Allele Typing Of Cyp2d6 Applied To 15K Exomes

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THINGS TO DO IN MEMPHIS

DOWNTOWN MEMPHIS RESTAURANTS

- [Automatic Slim's](#)
- [Felicia Suzanne's](#)
- [Spindini](#)
- [The Majestic Grille](#)
- [Arcade Restaurant](#)
- [Paulette's](#)
- [Aldo's Pizza Pie](#)
- [McEwen's](#)
- [The Gray Canary](#)
- [Huey's Downtown](#)
- [Pearl's Oyster House](#)
- [Rendezvous](#)
- [Central BBQ Downtown](#)
- [Mesquite Chop House Downtown](#)
- [Gus's World Famous Fried Chicken](#)
- [Rizzos](#)
- [Maciel's Tortas & Tacos](#)
- [South of Beale](#)
- [Flight Restaurant & Wine Bar](#)
- [Catherine and Mary's](#)
- [Local Gastropub](#)



THINGS TO DO IN MEMPHIS

- [The National Civil Rights Museum](#)
- [Graceland](#)
- [Sun Studios](#)
- [Stax Museum of American Soul Music](#)
- [Beale Street](#)
- [Bass Pro Shops at the Pyramid](#)



**Memphis is a vibrant, exciting city and our downtown has much to offer with live music, award-winning restaurants, and more. However, please exercise caution when sight-seeing on your own. Pay attention to your surroundings and be aware of others. Please see separate map.*

DOWNTOWN MEMPHIS WALKING ROUTES

