

**DEVELOP**  
*and*  
**TEST**  
*for the*  
**MOBILE**  
**FUTURE**



**MOBILE**  
**DEV + TEST**

**APRIL 12-17, 2015**  
**SAN DIEGO, CA**  
Manchester Grand Hyatt

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# AN INVITATION *from the* PROGRAM CHAIR

On behalf of TechWell, I'd like to invite you to join us for a knowledge-expanding and career-building experience in San Diego at the inaugural Mobile Dev + Test conference. The mobile developer and tester's worlds are changing, and today we are facing new challenges, pressures, and opportunities. This conference helps you learn what is new in mobile and smart software development and testing to grow your skills, supercharge your knowledge, and re-energize how you view your profession.

You'll have the opportunity to learn from thought leaders in the mobile software industry and chat with them in person about your challenges. Plus, San Diego is a great host city for the conference with all its entertainment venues. Please join us this April for Mobile Dev + Test!

Regards,

**Alison Wade**

Program Chair, Mobile Dev + Test



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## A WIDE VARIETY OF MOBILE TOPICS

What's happening now in mobile development and testing? Mobile Dev + Test offers a wide variety of mobile and smart topics at the conference:

- MOBILE TESTING
- MOBILE DEVELOPMENT
- WEARABLES
- SMART TECHNOLOGY
- MOBILE DESIGN
- MOBILE PROJECT MANAGEMENT
- iOS AND ANDROID DEVELOPMENT
- MOBILE SECURITY TESTING
- THE INTERNET OF THINGS

## WHO'S BEHIND THE CONFERENCE?



Learn. Connect. Contribute. TechWell/Software Quality Engineering (SQE) is a leader in the software industry for twenty-eight years, SQE delivers a variety of software training, conferences, publications, consulting, and website communities. [www.TechWell.com](http://www.TechWell.com)

## STAY CONNECTED



Stay up-to-date on all of the latest TechWell happenings—including conferences, training, publishing, and other valuable resources for the software industry. Join our mailing list at: <http://well.tc/AyT>  
Join the social conversation @TechWell #mobiledevtest!

# CONFERENCE OVERVIEW

Build your own conference—training classes, tutorials, keynotes, concurrent sessions, the Mobile Innovation & Leadership Summit, and more—packed with information covering the latest technologies, trends, and practices in mobile software development and testing.

## SUNDAY

Agile Tester Certification (2 days)  
Mobile Application Testing (2 Days)  
Product Owner Certification (2 days)



## MONDAY-TUESDAY

Multi-Day Training Classes Continue  
In-Depth Half- and Full-Day Tutorials



## WEDNESDAY-THURSDAY

Keynotes  
Concurrent Sessions  
The Expo  
Networking and Special Events  
...and More



## FRIDAY

### Mobile Innovation & Leadership Summit

Attend the Mobile Innovation & Leadership Summit Thursday evening and Friday. Join senior leaders from the industry to gain new perspectives and share ideas on today's mobile software issues. For more information on the Mobile Innovation & Leadership Summit, please visit <http://well.tc/Ayq>. (Summit registration required)



## CHOOSE THE CONFERENCE PACKAGE THAT WORKS BEST FOR YOUR BUDGET

SMART SAVER



Conference + 2 Days  
\$2,545

MOST POPULAR

BIG SAVER



Conference Only  
\$1,895

SUPER SAVER



2 Tutorial Days  
\$1,695

For a complete list of pricing options, go to: <http://mobiledevtest.techwell.com>

Prices valid when you register by March 13, 2015

# CONFERENCE SCHEDULE

## SUNDAY, APRIL 12

**8:30** **Multi-day training classes begin:** Mobile Application Testing • Agile Tester Certification • Product Owner Certification

## MONDAY, APRIL 13

**8:30** Multi-day training classes continue from Sunday (8:30am–5:00pm)

**8:30** Tutorials (8:30am–12:00pm)

### MONDAY FULL-DAY TUTORIALS

- MA** **Introducing the Swift Programming Language**—*Daniel Steinberg, Dim Sum Thinking, Inc.*
- MB** **Android Development Introduction: A Hands-On Workshop**—*Ken Kousen, Kousen IT, Inc.*
- MC** **Building Universal Apps for the Windows Platform**—*Mike Benkovich, Imagine Technologies, Inc.*
- MD** **Develop Your Mobile App Test and Quality Strategy**—*Jason Arbon, Applause*

**12:00** Lunch

**1:00** Full-Day Tutorials Continue (1:00pm–4:30pm)

## TUESDAY, APRIL 14

**8:30** Tutorials (8:30am–12:00pm)

### TUESDAY FULL-DAY TUTORIALS

- TA** **iOS 8 Quick Start: The Fundamental Pillars of iOS Development**  
*Daniel Steinberg, Dim Sum Thinking, Inc.*
- TB** **Testing Mobile Web Apps in the Cloud with Selenium**  
*Max Saperstone, Coveros*

### TUESDAY MORNING TUTORIALS

- TC** **Mobile App Project Kick Off: Get It Right the First Time**  
*Jaimee Newberry, Independent Consultant*
- TD** **Security Testing Mobile Applications**  
*Alan Crouch, Coveros*
- TE** **The Ionic Framework: Build Apps with AngularJS and PhoneGap**  
*Troy Miles, Kelley Blue Book*

**12:00** Lunch

**1:00** Tutorials (1:00pm–4:30pm)

### TUESDAY FULL-DAY TUTORIALS (CONTINUED)

- TA** **iOS 8 Quick Start: The Fundamental Pillars of iOS Development**  
*Daniel Steinberg, Dim Sum Thinking, Inc.*
- TB** **Testing Mobile Web Apps in the Cloud with Selenium**  
*Max Saperstone, Coveros*

### TUESDAY AFTERNOON TUTORIALS

- TF** **Super Rad Brainstorming**  
*Jaimee Newberry, Independent Consultant*
- TG** **Designing Apps for Android Devices**  
*Luke Wallace, Bottle Rocket*
- TH** **Building Cross-Platform Mobile Apps**  
*Troy Miles, Kelley Blue Book*

**4:30** Welcome Reception (4:30pm–5:30pm)

## CONFERENCE BONUS!

Digital Subscription to *Better Software Magazine!*

Mobile Dev + Test conference attendees receive a digital subscription to *Better Software* magazine. Delivering relevant, timely information, *Better Software* magazine helps you tackle the challenges of building high-quality software, regardless of your role in the software development lifecycle. [www.BetterSoftware.com](http://www.BetterSoftware.com)



# CONFERENCE SCHEDULE

## WEDNESDAY, APRIL 15

8:30	<b>KEYNOTE: Crazy (and Focused) Mobile App Development</b> —Daniel Steinberg, Dim Sum Thinking, Inc.		
9:30	Networking Break • Visit the Expo, 9:30am–3:15pm		
	Mobile Development	Mobile Testing	Wearables/Smart Technology
10:00	<b>W 1</b> <b>Real-Time Contextual and Social Relevance in Mobile</b> Jason Arbon, Applause.com/uTest.com	<b>W 2</b> <b>Automate Your Way to Sanity in the Chaos of Mobile App Development</b> Josh Anderson, Dude Solutions	<b>W 3</b> <b>Embed Yourself in Our Wearable Future</b> Noble Ackerson, Byte an Atom Research
11:00	<b>W 4</b> <b>Mastering Android Development Tools</b> Luke Wallace, Bottle Rocket	<b>W 5</b> <b>Continuous Mobile Testing for Critical Business Apps</b> Steven Winter, FIS Mobile	<b>W 6</b> <b>Wearing UX—When Our Clothes Become the Interface</b> Jason Snook, CapTech Consulting
11:45	Lunch • Visit the Expo • Meet the Speakers		
	Mobile Development	Mobile Testing	Wearables/Smart Technology
1:00	<b>W 7</b> <b>From Web Developer to Hybrid App Developer</b> Greg Avola, Untappd	<b>W 8</b> <b>Mobile Test Automation with Big Data Analytics</b> Tarun Bhatia, Microsoft	<b>W 9</b> <b>Using Apps to Help Users Experience Wearables and IoT Devices</b> Chris Beauchamp, Crittercism
2:00	<b>W 10</b> <b>A DevOps Approach for Building 100 iOS Apps</b> Leigh Williamson, IBM	<b>W 11</b> <b>Mobile Testing Trends and Innovations</b> Melissa Tondi, Denver Automation and Quality Engineering	<b>W 12</b> <b>The Coming Avalanche of Wearable Mobile Apps</b> Philip Lew, XBOSoft
2:45	Networking Break • Visit the Expo, 2:45pm–3:15pm		
3:15	Lightning Vendor Talks		
4:00	<b>KEYNOTE: Designing for Engagement</b> —Jaimee Newberry, Independent Consultant		
5:00	Reception in the Expo Hall, 5:00pm–6:00pm		

## THURSDAY, APRIL 16

8:30	<b>KEYNOTE: The Perfect Storm: Mobile Application Quality</b> —Jeffery Payne, Coveros, Inc.		
9:45	<b>KEYNOTE: Thought: The Future of Mobile and Embedded Application Input</b> —Jim McKeeth, Embarcadero Technologies		
10:30	Networking Break • Visit the Expo, 10:30am–3:15pm		
	Mobile Development	Mobile Testing	Wearables/Smart Technology
11:00	<b>T 1</b> <b>Today and Tomorrow: Mobile's Impact on Development and Testing</b> James Montemagno, Xamarin	<b>T 2</b> <b>A Look into the Future: App Testing and Quality in 2025</b> Jason Arbon, Applause	<b>T 3</b> <b>The Software Developers Guide to Prototyping Wearable Devices</b> Lance Gleason, Polyglot Programming, Inc.
11:45	Lunch in the Expo		
	Mobile Development	Mobile Testing	Wearables/Smart Technology
1:00	<b>T 4</b> <b>Plotting a Better Beer with Geolocation: An Untappd Case Study</b> Greg Avola, Untappd	<b>T 5</b> <b>Mobile Application Dev and QA Testing with Simulated Environments</b> Wayne Ariola, Parasoft	<b>T 6</b> <b>Wearables and Contactless Technology—for Payment Processing and Much More</b> David Meyer, FIS Mobile
2:00	<b>T 7</b> <b>Windows Azure: Connecting the Dots for a Mobile Workforce</b> Mike Benkovich, Imagine Technologies, Inc.	<b>T 8</b> <b>Tips and Tricks for Building Secure Mobile Apps</b> Jeffery Payne, Coveros, Inc.	<b>T 9</b> <b>The Internet of Things and You</b> Jim McKeeth, Embarcadero Technologies
2:45	Networking Break • Visit the Expo, 2:45pm–3:15pm		
	Mobile Development	Mobile Testing	Wearables/Smart Technology
2:00	<b>T 10</b> <b>Architect a Winning Mobile Application</b> Shadi Saifan, FIS Mobile	<b>T 11</b> <b>Mobile Performance Testing Crash Course</b> Dustin Whittle, AppDynamics	<b>T 12</b> <b>Software Attacks for Embedded, Mobile, and Internet of Things</b> Jon Hagar, Independent Consultant
4:30	Mobile Innovation & Leadership Summit Welcome Reception		

## FRIDAY, APRIL 17



### Mobile Innovation & Leadership Summit

Attend the Mobile Innovation & Leadership Summit Thursday (4:30pm) and Friday (all day). Join senior leaders from the industry to gain new perspectives and share ideas on today's mobile software issues. For more information on the Mobile Innovation & Leadership Summit, please visit <http://well.tc/Ayq> (Summit registration required).

# PRE-CONFERENCE TRAINING

Enhance your conference experience by attending our pre-conference training classes. Taught by industry leaders with years of practical experience, combining training and the conference is the best way to maximize your learning experience.

## Mobile Application Testing

Sunday, April 12–Monday, April 13 • 8:30am–4:30pm

Many testers attempt to apply what they know to mobile testing, and while that may work for some functional testing, it often leaves many critical features untested. Critical errors that go untested can mean a swift end to a mobile application. Learning how to identify common issues in mobile applications and how to test the unique aspects of a mobile application is the only way to be truly successful. This course will cover usability across multiple platforms and resolutions, network and security testing, creating application unit tests, mobile UI automation, and performance testing for various devices over various networks and carriers. **A mobile device such as a smartphone or tablet is required.**

- Understand what makes mobile application testing different from standard software testing
- Learn some of the underlying technologies behind mobile devices and how those technologies affect testing
- Discover how mobile applications work and different techniques for testing them
- Explore the different types of mobile applications and how to test for each



Max Saperstone

## Agile Tester Certification

Sunday, April 12–Monday, April 13 • 8:30am–4:30pm

Agile software practices are being employed within many development organizations worldwide. More and more test teams and testers are participating in agile projects or are embedded within agile teams. Many testers struggle to understand the agile development process and their place in it. Learn the fundamentals of agile development, the role of the tester in the agile team, and the agile testing processes.

- Discover how testing is implemented in different agile environments
- Learn about user stories and how to test them
- Explore key agile testing practices—ATDD, BDD, TDD, and ET
- Examine technical and team skills you need for success
- Recognize the main agile testing challenges and how to address them



Robert Sabourin

## Product Owner Certification

Sunday, April 12–Monday, April 13 • 8:30am–4:30pm

This two-day Certified Scrum Product Owner certification course provides the jumping off point for you to take on the hardest role in Scrum, being a Product Owner. Being an effective Product Owner is difficult, but, if executed well, it can be incredibly rewarding as speed to market and value will grow substantially. On completion of the course you are registered as a Certified Scrum Product Owner (CSPO) with a two-year membership in the Scrum Alliance ([www.scrumalliance.org](http://www.scrumalliance.org)) where valuable materials and information are available exclusively to CSPOs.

- Articulating clear visions with measurable business objectives—Practice Lean Startup techniques such as the lean canvas
- Describing and prioritizing stakeholders—Practice techniques from agile user-experienced design such as personas, and customer development methods from the Lean Startup
- Expressing requirements as testable outcomes—Practice story writing and acceptance test driven methods to objectively express requirements and focus development efforts on achieving business results
- Prioritizing new product development, maintenance, and non-software work—Learn to prioritize by product, customer and market risk, cost of delay, and more
- Planning releases and sprints—Practice advanced techniques like story mapping and visual management systems for programs
- Tracking and reporting outcomes—Use quantitative techniques from lean and Lean Startup



Sanjiv Augustine

# NETWORKING EVENTS



## Welcome Reception

Tuesday, April 14 • 4:30–5:30pm

Kick off the conference with a welcome reception! Mingle with experts and colleagues while enjoying complimentary food and beverages.

## Meet the Speakers at Lunch

Wednesday, April 15 and Thursday, April 16  
During Lunch

Meet with industry experts for open discussions in key areas of mobile software development and testing. On both days, there will be lunch tables designated by topic of interest. Come pose your toughest questions!

## Bookstore and Speaker Book Signings

Tuesday, April 14–Thursday, April 16

Purchase popular industry books—many authored by Mobile Dev + Test Conference speakers—from BreakPoint Books. Authors are available for questions and book signings during session breaks and Expo hours.

## Expo Reception

Wednesday, April 15 • 5:00–6:00pm

Network with peers at the Expo reception and enjoy complimentary food and beverages. Be sure to play the Passport game for your chance to win great prizes!





### MA Introducing the Swift Programming Language

*Daniel Steinberg, Dim Sum Thinking, Inc.*



If you are an experienced developer who is interested in the new Swift programming language, this hands-on workshop is for you. Daniel Steinberg introduces standalone Swift functions that are not part of a class or other Swift type. Then, he shows how to give or hide external names for parameters. Daniel shares examples of four fundamental Swift entities: String, Int, Dictionary, and Arrays. You'll practice creating mutable and immutable arrays and explore different ways of iterating through them, changing values along the way. Learn to save the application's state, and much more. Daniel dives into Swift types—classes, objects, protocols, structs, modules, and enumerations including how they differ, initialization, and how to add properties and methods to them. In conclusion Daniel discusses optionals, generics, and closures, and shows you how to use the Swift REPL and Playgrounds to explore all aspects of this new language.



**Laptop Required:** To participate fully in this session, you should bring a Mac laptop with the most recent version of Xcode 6 already installed.

**Daniel Steinberg** is the author of the best selling books *A Swift Kickstart* and *Developing iOS 7 Apps for iPad and iPhone* (the official companion book to the popular iTunes U series from Stanford University). He has written apps for the iPhone and the iPad since the SDKs first appeared and has written programs for the Mac all the way back to System 7. Daniel presents iPhone, Cocoa, and Swift training and consults through his company Dim Sum Thinking. He is the host of the CocoaConf Podcast. When he's not coding or talking about coding for the Mac, the iPhone, and the iPad he's probably cooking or hanging out with his wife and daughter. Information on his books, training, and speaking are available on the Editors Cut website.



### MB Android Development Introduction: A Hands-On Workshop

*Ken Kousen, Kousen IT, Inc.*



With more than one billion active Android users, the demand for Android apps is skyrocketing. James Harmon, who teaches Android development to enterprise development teams, offers participants hands-on experience developing a native Android app that incorporates the major components in the Android framework. The workshop format is short lectures followed by demonstrations and hands-on practice. You'll start by building the UI with layouts and the list view widget. Your app will use the built-in SQLite database for saving content locally. To minimize the performance impact on the UI, participants will convert the data access layer to a background service. Then, you'll add a cloud backend to save and retrieve data remotely. During this workshop, you'll become familiar with writing unit tests, building broadcast receivers to react to changes in the phone state, and making HTTP requests to the cloud. Walk away with enough experience to start building apps that could eventually be published to the Google Play Store.

**Programming Skills Required:** Participants should have strong programming skills.



**Laptop Required:** To participate fully in this workshop, you should bring a laptop with Java and the Android Studio IDE already installed. Download the Java JDK at [www.oracle.com/technetwork/java/javase/downloads](http://www.oracle.com/technetwork/java/javase/downloads). Download Android Studio and update the Android SDK with the most recent components at [developer.android.com/sdk/installing/studio.html](http://developer.android.com/sdk/installing/studio.html).

**Ken Kousen** is the President of Kousen IT, Inc., through which he does technical training, mentoring, and consulting in all areas related to Java, specializing in Android, Spring, Hibernate, Groovy, and Grails. He is the author of the Manning book "Making Java Groovy" and the upcoming O'Reilly book "Gradle for Android". Ken is a regular speaker on the No Fluff, Just Stuff conference tour, as well as at many other international conferences. In 2013 he won a JavaOne Rock Star award. Over the past decade he has taught thousands of developers in business and industry. In addition to owning several technical certifications, his academic background includes two BS degrees from M.I.T., an MS and a Ph.D. from Princeton, and an MS in Computer Science from R.P.I.



### MC Building Universal Apps for the Windows Platform

*Mike Benkovich, Imagine Technologies, Inc.*



Microsoft calls it Windows reimaged, providing developers with powerful frameworks and technologies for building apps—if you know the tools and how to use them. In this hands-on session, Mike Benkovich demonstrates what you need to know to launch or improve your development efforts to build universal—mobile, tablet, or desktop—apps for Windows. Starting with the basics of the framework options of C# and JavaScript through how you can use the universal nature of the UX to target everything from phones to widescreens, Mike works you through all the layers of building an app. You'll use the latest frameworks and technologies for working with the UX, data, and service. Practice using the Universal app framework to target both tablet and phone devices, and connect your app to data in the cloud. From liquid smooth graphics and layouts to the cloud and contracts, we put the tools to work and give you the background you need to build great Windows apps.



**Laptop Required:** To participate in this session, you should bring a Windows laptop with any version of Visual Studio 2013 or later installed.

**Mike Benkovich** brings it all—energy, laughter, and a contagious passion for coding—with him. In a career that has taken him from minion to business owner, from database administrator to developer, from author to evangelist, Mike has seen it all. In more than twenty-five years of working in the technology industry, he has been part of the latest waves to sweep the industry. Whether delivering MSDN events live or webcast presentations, on the developer resource site BenkoTips or his blog, Mike brings enthusiasm for tools and an energy for the search to find a better way. Follow Mike on Twitter @mbenko.



### MD Develop Your Mobile App Test and Quality Strategy

*Jason Arbon, Applause.com/uTest.com*



Let's build a mobile app quality and testing strategy together. Whether you have a web, hybrid, or native app, building a test and quality strategy means first understanding your customers and your competitors, and then testing your app under real-world conditions. Most importantly, it means having the data and tools to make quick, agile decisions on feature implementations and bug fixes. Jason Arbon guides you through the latest techniques, data, and tools to ensure you have an awesome mobile app test and quality strategy. Leave this interactive session with a strategy for your very own app (or one you pretend to own). The information Jason shares is based on Applause.com/uTest's thousands of mobile app test cycles on hundreds of top mobile apps, data analytics on millions of apps, hundreds of millions of appstore reviews, development of mobile apps, and consultations with top app development teams.



**Note:** Bringing a laptop or tablet to this tutorial is preferred but is not required.

Director of product strategy at Applause.com/uTest.com, **Jason Arbon** worked previously on Google Chrome, ChromeOS, personalized web search, and Microsoft teams including Bing, Biztalk, WindowsCE/Internet Explorer, and WinFS. A frequent conference speaker on software quality, Jason has also delivered mobile app quality and testing workshops and keynotes at software company internal engineering conferences. He founded herecandy.com, a mobile app company that made web browsing and sharing smarter on mobile devices. Jason co-authored *How Google Tests Software* and published *App Quality: Secrets for Agile App Teams*. In his free time...oh, wait, he doesn't have any.

TUESDAY, APRIL 14, 8:30–4:30 (FULL-DAY)



## TA iOS 8 Quick Start: The Fundamental Pillars of iOS Development

Daniel Steinberg, *Dim Sum Thinking, Inc.*



If you are an experienced developer who is new to iOS development, join Daniel Steinberg as he facilitates this hands-on workshop to teach participants how to write great iPad, iPhone, and iPod Touch apps. Daniel introduces Xcode 6 and Apple's suite of freely-available developer tools. He demonstrates how to use Xcode's visual tools and storyboards to create your app's GUI. Learn to use Outlets and Actions to connect the visual elements to code and interact with them. Examine the Swift code that implements your application's Model and Controller layers. Add logic through multiple source files that illustrate how to partition code into useful objects and functions. Take a close look at view controllers and how they manage the view with which users are interacting. Conclude with a look at multiple scenes, and learn how to create and configure segues that allow user transition across different scenes. By the end of the day, you'll be ready to begin work on your own iOS apps.



**Laptop Required:** To participate fully in this session, you should bring a Mac laptop with the most recent version of Xcode 6 already installed.

**Daniel Steinberg** is the author of the best selling books *A Swift Kickstart* and *Developing iOS 7 Apps for iPad and iPhone* (the official companion book to the popular iTunes U series from Stanford University). He has written apps for the iPhone and the iPad since the SDKs first appeared and has written programs for the Mac all the way back to System 7. Daniel presents iPhone, Cocoa, and Swift training and consults through his company Dim Sum Thinking. He is the host of the CocoaConf Podcast. When he's not coding or talking about coding for the Mac, the iPhone, and the iPad he's probably cooking or hanging out with his wife and daughter. Information on his books, training, and speaking are available on the Editors Cut website.



## TB Testing Mobile Web Apps in the Cloud with Selenium

Max Saperstone, *Coveros*



With the burgeoning number of mobile OSs, browsers, and platform combinations, comprehensive mobile app testing can be a nightmare—but it doesn't have to be! Max Saperstone demonstrates ways to leverage the open source Selenium (IDE) with cloud services to test mobile apps across multiple browsers and platforms. Through hands-on exercises, you will experience how Selenium interacts with web browsers below the GUI to test actions, inputs, and expected outcomes. Max and participants will examine how the Selenium framework works and learn how to expand Selenium tests to improve device and platform coverage. Employing a cloud-based mobile testing tool from Sauce Labs as an example service, you will learn to execute tests recorded in Selenium on a cloud based emulation system across multiple devices, browsers, and platform configurations. Finally, Max discusses common errors and bug analysis techniques, focusing on testing responsive web applications. Take back a set of proven practices for developing mobile application tests with extensive coverage while minimizing test script maintenance.



**Laptop Required:** With their laptops, participants will connect remotely via Google Chrome VNC to a specialized virtual environment for the hands-on portion of this session.

For almost a decade, **Max Saperstone** has been a test engineer focusing on test automation and the continuous integration/continuous delivery process. Max specializes in open source tools—Selenium, JMeter, AutoIT, Cucumber, and Chef. He has led several testing automation efforts, including developing an automated suite focused on web-based software to operate over several applications. Max headed a major project developing an automated testing structure to run Cucumber tests over multiple test interfaces and environments, while developing a system to keep test data "ageless." He is currently developing a new testing architecture for SecureCI to support testing multiple interfaces and custom reporting while reducing test upkeep.

# MOBILIZE *your* TEAM

Bring your team and save up  
to 20% on each registration!



*See page 22 for more details.*



## TC Mobile App Project Kick Off: Get It Right the First Time

@JAIMEEJAIMEE

*Jaimee Newberry, Independent Consultant*

The critical steps that need to happen before coding starts are all-too-often brushed over or skipped entirely. Join Jaimee Newberry as she discusses how to identify and gain buy-in and involvement from all the right stakeholders. Because user experience (UX) will make or break every new app, you have to get it right the first time. Jaimee explores brand/product voice and personality questions that help teams quickly map out the direction that affects everything—product experience, visual design, and timing of animations and transitions. Learn how to write copy and where to position it—from alerts to error messages and beyond. Jaimee demonstrates ways to identify your target users; empathize with their wants and needs; create user personas; and map out the most important UX scenarios. Jaimee addresses feature prioritization and discusses the secrets of great team communication. Walk away prepared to kick off a new product or evaluate your current project's trajectory to ensure development is on the right track.

Independent consultant **Jaimee Newberry** provides executive and personal coaching, and shares lessons in empathy, communication, experience design, and technology worldwide. Jaimee moved to GUI design and information architecture in the web start-up days; taught management information systems, graphic design, and interface design at UNLV; partnered in Eatdrink, a boutique animation/interactive shop; and led the efforts behind Zappos' first iPad, iPhone, and Android apps. As Black Pixel's director of user experience she worked on top secret iOS projects for Fortune 100 companies and promising startups.



## TD Security Testing Mobile Applications



*Alan Crouch, Coveros*

The sensitive nature of personal information stored on smart devices makes security testing vital when building mobile applications. Alan Crouch explores the unique characteristics of mobile devices—how they store data, the fluid trust boundaries between applications, and the unique aspects of device security models. Learn about the many different threat types and use cases in the mobile arena that make security testing mobile applications so challenging. Alan offers hints and tips for comprehensive security testing of mobile applications during the development process. He shares when and where in that process to perform each type of testing. Tips include how to test for data privacy, secure session management, and the presence of malicious applications. Take back approaches for finding traditional application security vulnerabilities that also may be present in mobile applications. Leave with an understanding of what it takes to security test your mobile applications and practical knowledge to make your mobile apps less vulnerable.

**Alan Crouch** is a senior software security specialist with Coveros, Inc. a Virginia-based firm focusing on agile, software quality, and application security. Alan has worked closely with federal agencies and private companies to advise, audit, and support IT security and governance teams. In addition to his cyber security experience, he has a strong background in highly structured software engineering, test analysis, test automation, agile software development, and security testing. With a passion for software and security, Alan's career has focused on building secure software and developing better software security practices.



## TE The Ionic Framework: Build Apps with AngularJS and PhoneGap

*Troy Miles, Kelley Blue Book*

Ionic is an open source, front-end framework for building hybrid mobile apps with HTML5. Using the Ionic framework, you can combine PhoneGap and AngularJS—the hottest web MVC framework around for building fast, testable web applications—to create cross-platform apps using standard web development tools like HTML, CSS, and JavaScript. Troy Miles introduces you to the Ionic framework and discusses how to use it with AngularJS. Participants will build a simple, full-featured application that offers a great overview of Ionic's key features. You will run the app on the Genymotion Android emulator, so you won't need a smartphone for testing. Learn how to debug the app in two different ways. The first: Run it as a web app and use the tools of the Chrome browser. The second: Run the app on the emulated device and use Chrome's remote debugging capabilities. Leave with the knowledge and tools you need to develop enterprise-ready cross-platform mobile apps with Ionic.

**LAPTOP REQUIRED** **Laptop Required:** To participate fully in this session, you should bring a laptop with a web-capable IDE, Google Chrome, and Oracle's VirtualBox installed. Download VirtualBox at: [www.oracle.com/technetwork/server-storage/virtualbox/downloads](http://www.oracle.com/technetwork/server-storage/virtualbox/downloads).

**Troy Miles**, aka the Rock-n-coder, has been coding for more than thirty years, writing games for C64, Apple II, and IBM PCs in assembly language. Troy moved on to Windows application and system programming, and caught Internet fever just before the dot net bubble burst. Realizing that mobile devices were the perfect window into back-end data, he added mobile programming to his repertoire. Troy builds web services with ASP.NET MVC or Node.js on the back-end and web or mobile up front. He loves coding, competing in hackathons, attending developer events, and randomly posting interesting code nuggets on his blog. Reach Troy at [rockncoder@gmail.com](mailto:rockncoder@gmail.com).

## IN-DEPTH TRAINING *is* WITHIN REACH

Save almost \$200 when you attend any of the multi-day training classes and the conference.

(Discount already reflected in the conference pricing)  
See page 6 for more details.



TUESDAY, APRIL 14, 1:00–4:30 (HALF-DAY – AFTERNOON)



## Tf Super Rad Brainstorming

@JAIMEEJAIMEE

*Jaimee Newberry, Independent Consultant*

Ever had a brainstorming session that failed to produce the quality results you'd hoped for? Think you already have good brainstorming sessions but know there's room for improvement? Facilitating Super Rad Brainstorming sessions for eons now, Jaimee Newberry is an industry leader in improving brainstorming skills and surfacing incredible ideas. Work together as Jaimee facilitates a real time, hands-on brainstorming session that highlights tips and tricks for making your own brainstorming sessions more productive. Participants will collectively decide which challenge to tackle and brainstorm together. Learn what supplies to bring, how to prepare for a session, and how to handle common sticking points that prevent many brainstorming sessions from being productive. Take away tips and practices you can use immediately back at the office. With time for sharing your own tips, tricks, and methods, this is an excellent platform for learning, collaborating—and having a lot of fun.

Independent consultant **Jaimee Newberry** provides executive and personal coaching, and shares lessons in empathy, communication, experience design, and technology worldwide. Jaimee moved to GUI design and information architecture in the web start-up days; taught management information systems, graphic design, and interface design at UNLV; partnered in Eatdrink, a boutique animation/interactive shop; and led the efforts behind Zappos' first iPad, iPhone, and Android apps. As Black Pixel's director of user experience she worked on top secret iOS projects for Fortune 100 companies and promising startups.



## Tg Designing Apps for Android Devices

bottle rocket

*Luke Wallace, Bottle Rocket*

With the many versions of Android available today on hundreds, even thousands, of device types, just how do you build something that will look good on Android devices you've never seen? Is it possible to build an app that will look good on the newest devices and not look strange on your grandma's phone from 2012? Luke Wallace clears a path through the jungle of Android-based hardware and takes on the fragmentation beast. See how his company, Bottle Rocket, one of the top mobile development companies, handles this challenge day-in-and day-out—without compromising the experience. Luke shares the design principles that guide the Android team within Google itself. Learn their latest recommendations for getting apps featured in Google Play. It's not easy, but with a few guiding principles, you'll be well on your way to a happy Android development team—and even happier customers.

**Luke Wallace** leads all Android development at Bottle Rocket. Luke wrote several of the first Android apps for Bottle Rocket and continues to oversee every project to maintain quality and push the bounds of what's possible. A strong proponent of the Android platform, he is an invaluable resource for getting the Android perspective on news and trends within the industry. With his technical knowledge and humor, Luke loves educating people about Android.



## Th Building Cross-Platform Mobile Apps

*Troy Miles, Kelley Blue Book*

PhoneGap (aka Cordova) is a cross-platform framework for developing mobile apps using standard web development tools like HTML, CSS, and JavaScript. Join Troy Miles to learn how to create mobile apps with PhoneGap by building a simple but full-featured app during this hands-on class. Troy explores PhoneGap's important capabilities, including GPS, camera, and audio recordings. Because JavaScript has a reputation as a somewhat difficult language, Troy teaches techniques for keeping your code robust and clean. To give your app the appropriate look and feel for the device on which it is running, the class will use the open source Chocolate Chip UI framework for testing. Troy shares ways to debug the code by running it as a web app, using browser development tools, or as a phone app, using the Chrome browser's remote debugging features. Leave with the basics you need to start building your own cross-platform mobile apps.

**LAPTOP REQUIRED** **Note:** To participate fully in this session, you should bring a laptop with a web-capable IDE, Google Chrome, and Oracle's VirtualBox installed. Download VirtualBox at: [www.oracle.com/technetwork/server-storage/virtualbox/downloads](http://www.oracle.com/technetwork/server-storage/virtualbox/downloads).

**Troy Miles**, aka the Rock-n-coder, has been coding for more than thirty years, writing games for C64, Apple II, and IBM PCs in assembly language. Troy moved on to Windows application and system programming, and caught Internet fever just before the dot net bubble burst. Realizing that mobile devices were the perfect window into back-end data, he added mobile programming to his repertoire. Troy builds web services with ASP.NET MVC or Node.js on the back-end and web or mobile up front. He loves coding, competing in hackathons, attending developer events, and randomly posting interesting code nuggets on his blog. Reach Troy at [rockncoder@gmail.com](mailto:rockncoder@gmail.com).



## MOBILE INNOVATION AND LEADERSHIP SUMMIT

### Leadership On the Edge

Thursday, April 16 (evening) and Friday, April 17 (all day)

- Participate in insightful and informative sessions focusing on leadership issues
- Meet and network with your peers in the industry
- Join in the "think tank" discussion with industry veterans
- Develop new ideas and action plans for mobile innovation within your organization

# KEYNOTES

WEDNESDAY, APRIL 15 8:30AM

## Crazy (and Focused) Mobile App Development

*Daniel Steinberg, Dim Sum Thinking, Inc.*

Developers mostly focus on improving their creation skills—learning about programming languages and coding techniques; attending dev conferences; downloading and analyzing code; reading blogs, and listening to podcasts. However, they often become so focused on the delivery deadline that they forget they aren't just building an app for some arbitrary faceless customer. They are trying to help real people solve real problems. So, before the coding starts, there is lots of work to do to identify THAT customer. Narrow your scope. Picture just one person and imagine the problem your app will help him solve. So, perhaps you find yourself saying, "That's crazy. We want to build an app for the widest audience possible." Then join Daniel Steinberg as he explores this paradox: If you focus on meeting the needs of a single user who precisely represents your target audience, you will create an app that many, many people want. If you focus on meeting the many needs of the many, your app will fail. Through the discussion of this paradox, Daniel explains how you and your team can—and will—design winning applications.



**Daniel Steinberg** is the author of the best selling books *A Swift Kickstart* and *Developing iOS 7 Apps for iPad and iPhone* (the official companion book to the popular iTunes U series from Stanford University). He has written apps for the iPhone and the iPad since the SDKs first appeared and has written programs for the Mac all the way back to System 7. Daniel presents iPhone, Cocoa, and Swift training and consults through his company Dim Sum Thinking. He is the host of the CocoaConf Podcast. When he's not coding or talking about coding for the Mac, the iPhone, and the iPad he's probably cooking or hanging out with his wife and daughter. Information on his books, training, and speaking are available on the Editors Cut website.

WEDNESDAY, APRIL 15 4:00PM

## Designing for Engagement

*Jaimee Newberry, Independent Consultant*

Do the products you're creating engage users on an emotional level? Do you deliberately design in the personality and tone of your product? Are you thinking comprehensively about every touchpoint your product has with a user? Jaimee Newberry has been helping Fortune 500 companies and startups with their digital products for more than seventeen years. Through years of refinement, Jaimee knows how to create products that engage and empathize with users. Her abilities evoke client responses such as "You've earned our trust," "You understand who we are," and "Thank you. We love you!" Jaimee shares key considerations when creating winning mobile products—whether concept, startup, corporation, or enterprise apps—that connect emotionally with users and make them want to come back. Jaimee explores her proven app design and personality thinking, on-boarding dos and don'ts, and copywriting tips to help you develop and deliver products that are more fun, emotionally engage your users, and delight the business.



Independent consultant **Jaimee Newberry** provides executive and personal coaching, and shares lessons in empathy, communication, experience design, and technology worldwide. Jaimee moved to GUI design and information architecture in the web start-up days; taught management information systems, graphic design, and interface design at UNLV; partnered in Eatdrink, a boutique animation/interactive shop; and led the efforts behind Zappos' first iPad, iPhone, and Android apps. As Black Pixel's director of user experience she worked on top secret iOS projects for Fortune 100 companies and promising startups.

# INTERNATIONAL EXPERTS *on the* MOBILE FUTURE

THURSDAY, APRIL 16

8:30AM

## The Perfect Storm: Mobile Application Quality

*Jeffery Payne, Coveros*

Mobile applications are fraught with risk. The unique, portable nature and multiple uses of mobile devices bring a wide variety of critical quality properties into play: reliability, usability, security, availability, and maintainability. Allocating the effort to identify and ensure these properties is a difficult challenge—and not for the faint of heart. New testing and validation approaches must be used if we are to meet quality goals for mission-critical and widely distributed mobile applications. Jeffery Payne discusses the perfect storm that is mobile application quality, and how developers and testers can mitigate mobile risks. Learn about the many problems introduced by mobile devices and applications and how they influence the testing process. Discover the risks that impact quality properties and the how to address them during unit, integration, and system testing. Leave with an understanding of how to best allocate scarce resources to best assure that your apps will be successful. Take home knowledge about new mobile testing techniques and tools to help you weather the perfect storm that is mobile application quality.



**Jeffery Payne** is CEO and founder of Coveros, Inc., a software company that builds secure software applications using agile methods. Since its inception in 2008, Coveros has become a market leader in secure agile principles and was recognized by Inc. magazine as one of the fastest growing private US companies. Prior to founding Coveros, Jeffery was chairman of the board, CEO, and cofounder of Cigital, Inc., a market leader in software security consulting. Jeffery has published more than thirty papers on software development and testing, and testified before Congress on issues of national importance, including intellectual property rights, cyber terrorism, and software quality. Follow Jeffery on Twitter @jefferypayne.

THURSDAY, APRIL 16

9:45AM

## Thought: The Future of Mobile and Embedded Application Input

*Jim McKeeth, Embarcadero Technologies*

Control of complex machines by human thought has been a mainstay of science fiction writing and films for years. In the movie *Firefox*, Clint Eastwood steals a highly advanced Russian fighter jet that is controlled by the pilot's thoughts. But real devices are now appearing that purport to use our brainwaves as input. Is this technology a reality today? If not, how far away is it? What sort of thought input is possible and where could it be used? Jim McKeeth examines the roots of the technologies that allow a view of—and the possibilities for direct input from—the human mind and the augmentation of the mind, perception, and thought processes. Jim shares these processes which include real-world examples and a demonstration with volunteers controlling software and hardware using only their thoughts and feelings. Come see how this still-evolving and little-known technology works today, learn how it can be used in some applications, and explore its longer-term implications.



As lead developer evangelist at Embarcadero Technologies, **Jim McKeeth** is a key part of Embarcadero's developer community outreach. With more than twenty years of programming experience, Jim travels the world speaking at conferences and sharing his excitement and knowledge. He holds a patent for the swipe to unlock and pattern unlocks used on both iPhone and Android phones, plus a number of other computer- and software-related patents. When not traveling, Jim is an improvisational performer with ComedySportz Boise and enjoys spending time with his family.

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# CONCURRENT SESSIONS

WEDNESDAY, APRIL 15, 10:00am

## W1 MOBILE DEVELOPMENT

### Real-Time Contextual and Social Relevance in Mobile

Jason Arbon, [Applause.com/u/Test.com](http://Applause.com/u/Test.com)

Personalized mobile user experience is a hot topic today because a smarter app will delight users, keep them coming back, and make your business stand out from the crowd. The extreme version of personalization is real-time contextual and social relevance. According to Jason Arbon, the contextual brain for your app is only a few API calls away. Based on lessons learned working on search relevance and personalization at Google, Bing, and a stealth mobile app startup, Jason describes the value, limitations, performance, and data-privacy of local and web services available today. He demonstrates practical examples of leveraging APIs such as Foursquare, Yelp, Google Places, Facebook, Location APIs (latlong + velocity), and Twitter. Then, Jason describes available natural language processing APIs such as NSLinguisticTagger and illustrates ways to use in-app usage data to improve an application's contextual experience. Take away ideas for making your users happier—and you and your app look smarter.

## W2 MOBILE TESTING

### Automate Your Way to Sanity in the Chaos of Mobile App Development

Josh Anderson, *Dude Solutions*

Mobile app development and testing are hard. Mobile at scale is even harder. As you scale to the enterprise, automation is the only option. However, many organizations have barely started automating their mobile dev/test efforts. So, how do you actually automate the building, testing, and deploying of hundreds of mobile apps across multiple operating systems and different app stores? Josh Anderson explains that the mobile ecosystem is in its infancy compared to the tools supporting web application development, testing, and deployment. This means that you must get comfortable with alpha versions of open source projects, constantly changing APIs, and some good, old-fashioned software engineering duct tape. Josh takes you through the challenges he and his teams have encountered along the path to automation and explores the direction for those that remain. Take home the lessons Josh and his teams learned so you can more easily pave your own path to mobile automation.

## W3 WEARABLES/SMART TECHNOLOGY

### Embed Yourself in Our Wearable Future

Noble Akerman, *Byte an Atom Research*

It could be on your wrist or your ankle. It may be embedded in your jacket, your shoe, your vest, or your hat. It may eventually be under your skin. It may help you walk or talk; find your way; or communicate with a friend, with your doctor, or your coach. It monitors your heart rate, the moisture on your skin, every breath you take, and every move you make. And it's connected. And networked. Wearable devices are here to stay and are projected to be a \$30 billion market by 2018. Designing and developing applications for wearable technologies require a special mindset and understanding of the needs of users on the go. Simply porting an app from mobile to wearable is not enough. Join Cecilia Abadie to embed yourself in the world of wearables—the philosophy behind them, their challenges, and opportunities—from heads up displays like Google Glass, to the Android Wear smart watches, and many others that will come along. Drop in to explore where this emergent technology is taking us.

WEDNESDAY, APRIL 15, 11:00am

## W4 MOBILE DEVELOPMENT

### Mastering Android Development Tools

Luke Wallace, *Bottle Rocket*

There are so many tools and tricks for developing Android apps, but which ones actually help when you're building apps day in and day out? Luke Wallace introduces the critical development tools you need and demonstrates how to use them to build real apps. Learn about the six critical tools every developer must have, find out about the key techniques that will help you build masterful Android apps, and discover at least one weird trick to speed up your app development. Luke unearths third party libraries that you may not know about and shows you a simple, powerful guide to continuous integration. Discover new ways to connect with other Android developers in the industry and join this growing community. Explore the future of Android Studio and Eclipse and new tools coming from Google that will make your apps faster, more reliable, more beautiful, and easier to maintain.

## W5 MOBILE TESTING

### Continuous Mobile Testing for Critical Business Apps

Steven Winter, *FIS Mobile*

Mobile testing presents a daunting challenge to software development shops and testers. QA/test teams must design test plans to account for multiple platforms, an enormous and ever-increasing number of devices, and frequent OS updates that often introduce dramatic changes. To add complexity, the increasingly consumer-centric demands of the field require new features and fixes—almost daily. Although test automation is often cited as the best—if not the only—possible solution for mobile, it has presented some big challenges. Tasked with compressing the testing process for FIS Mobile, the leading mobile financial transaction platform, Steven Winter and his team revamped their approach to quality by implementing precision mobile test automation, continuous integration, and on-site mobile labs. This discussion will overview how the team reduced potentially months of manual mobile testing to an overnight automation task. The objective of the discussion is to take back new ideas to identify the core requirements of continuous mobile testing and overcome hurdles to mobile quality.

## W6 WEARABLES/SMART TECHNOLOGY

### Wearing UX—When Our Clothes Become the Interface

Jason Snook, *CapTech Consulting*

With the interest in wearable technology exploding, UX practitioners and development teams need to focus on creating experiences that intuitively fit the rhythm and ecosystem of a user's daily life. Unfortunately, much like what happened early on with mobile design, wearable UX designers seem to have unlearned many of the best practices and heuristics they employ on, for example, desktop design. Starting with a historical perspective on technology adoption and an assessment of where we are today, Jason Snook discusses challenges designers face with the varied interfaces and interactions associated with wearables. Join this session to explore key UX considerations, including interaction design, adoption theory, and the social aspects and stigmas that are important to realizing the full potential of wearable experiences.

# CONCURRENT SESSIONS

WEDNESDAY, APRIL 15, 1:00pm

## W7 MOBILE DEVELOPMENT

### From Web Developer to Hybrid App Developer

*Greg Avola, Untappd*

You or your company have a great idea for an app—and now you need to build it. So, what architecture do you use to support iOS, Android, Windows Phone 8, and future operating systems? How can you deal with all these platforms and still re-use your skills as web developer? The answer is a hybrid app, which allows developers to use part native code and part web code to create cross-platform apps. Greg Avola, a web developer who built a cross-platform app called Untappd, describes his experiences, demonstrates the tools he employed, shares lessons learned, and discusses the best practices he uses today. Learn how to take your mobile web application and turn it into native smartphone and tablet apps. Save time and resources while avoiding the extra effort of developing a feature for iOS and then having to write the same code for Android, Windows Phone, etc.

## W8 MOBILE TESTING

### Mobile Test Automation with Big Data Analytics

*Tarun Bhatia, Microsoft*

Development and test organizations face major challenges when building robust automated tests around their mobile applications. With limited testing resources and increasingly more complex projects, stakeholders worry about the risk and quality of mobile products. So how do you plan a mobile test automation project to prioritize testing resources and efforts? Tarun Bhatia used big data analytics to understand where customers spend most of their time on their apps out in the wild. See how you can analyze massive amounts of mobile usage data to create an operational model of carriers, devices, networks, countries, and OS versions. Based on real-user data, they developed automation strategies to create better tests and focus on the right priorities. Learn how you can use big data analytics to apply mobile automation in areas of continuous integration, performance, benchmarking, compatibility, stress, and performance testing.

## W9 WEARABLES/SMART TECHNOLOGY

### Using Apps to Help Users Experience Wearables and IoT Devices

*Chris Beauchamp, Crittercism*

Wearables and other Internet of Things (IoT) devices are optimized for gathering data about a user and their environment. According to Cisco, this emerging industry will produce and deliver over 20 billion devices worldwide by 2020. Join Chris Beauchamp to learn about how to leverage mobile apps to develop a compelling user experience with one or several connected wearable or IoT devices. He'll discuss the options for transmitting data from and to devices and how to ensure these connections are happening in real time once the app is live. Explore the options for displaying data on mobile apps with clear and understandable visual elements. Chris shows several use cases to highlight the patterns and anti-patterns on how to provide a great mobile experience across different devices. After all, in the end it's up to developers to create a complete experience for users and do something interesting with these devices and their data.

WEDNESDAY, APRIL 15, 2:00pm

## W10 MOBILE DEVELOPMENT

### A DevOps Approach for Building 100 iOS Apps

*Leigh Williamson, IBM*

Apple and IBM forged a global partnership to transform enterprise mobility, which includes delivering 100 applications built exclusively for iOS devices. There are myriad challenges involved in producing that many mobile apps quickly—and with excellent user experience and quality. The team had to work smarter rather than simply throw more people at the project. Join Leigh Williamson as he discusses the DevOps techniques they implemented to accelerate their huge mobile development project: cloud hosted services for Xcode-driven continuous integration; an extended quality cycle for the mobile app once in production; and linked front-end/back-end deployments. Because integrating multiple tools from multiple vendors was unavoidable, they employed an automated pipeline for testing and integrating the code for 100 mobile apps. As the mobile landscape continues to evolve, the importance of continuously delivering engaging mobile apps integrated with your enterprise remains critical to everyone's success. Hear how one team met the challenge at scale.

## W11 MOBILE TESTING

### Mobile Testing Trends and Innovations

*Melissa Tondi, Denver Automation and Quality Engineering*

As organizations implement their mobile strategy, testing teams must support new technologies—while still maintaining existing systems. Melissa Tondi describes the major trends and innovations in mobile technology, usage patterns, tools, and test equipment that you should consider when transitioning existing test teams or starting new ones. Based on more than two years of research with a lab-based consultant team, Melissa focuses on areas that balance efficiency and productivity, including use of a Device Matrix technique to select devices to test against and when to use emulators and simulators rather than physical devices. She offers solutions to ensure you have a comprehensive mobile test strategy and focuses on challenges—including understanding mobile-specific integration testing and which automation tools to use—that have inundated traditional test teams. Melissa describes how to build a well-organized device lab and incorporate testing scenarios—such as gesture and interruption testing—that are unique to mobile.

## W12 WEARABLES/SMART TECHNOLOGY

### The Coming Avalanche of Wearable Mobile Apps

*Philip Lew, XBOSoft*

For better or for worse—like it or not—mobile wearables are already changing our lives. Mobile wearable devices form a new generation of personalized technology that knows us better than our closest friends do. How many of your friends know how far you walked or what you ate? The challenge for developing wearable applications is incorporating the proper context to add value potential users haven't considered—while being sensitive to their privacy. In our future, devices will wake us up earlier because of the ice storm last night and contact the people we are meeting to warn them we could be late. Philip Lew explores the most important element of mobile/wearable user experience and customer experience context. Using real-world examples, Phil breaks down context into the elements you can incorporate into your design and development projects. Learn the contextual elements you need to incorporate right now and identify

# CONCURRENT SESSIONS

THURSDAY, APRIL 16, 11:00am

## T1 MOBILE DEVELOPMENT

### Today and Tomorrow: Mobile's Impact on Development and Testing

James Montemagno, Xamarin

There are more than 1.4 billion smartphones in the world—one for every 4.5 people on earth. Over the next decade wearables and the Internet of Things (IoT) will make those numbers look puny. In fact, mobile is transforming how people and things connect and dramatically changing software development, as we know it. With more than 189 million apps downloaded daily from app stores and new IoT devices being released daily to the public, developers and testers are already behind the curve. James Montemagno takes a look at the problems and challenges we face today and what we can look forward to in the future. Explore how the ever-growing number of devices and connections will force companies to produce efficient mobile-first products to move ahead in the market. Take back ideas and action items to start tackling the immense fragmentation of devices in the marketplace and identify the steps necessary to transform your development/test teams, environment, and processes to survive and prosper in this brave new world.

## T2 MOBILE TESTING

### A Look into the Future: App Testing and Quality in 2025

Jason Arbon, [Applause.com/uTest.com](http://Applause.com/uTest.com)

In ten years, the applications we develop—mobile, embedded, wearable, and more—will be radically different from today's apps. And so will be the testing and quality tools, methods, and solutions we employ. Extrapolated from his experiences at Google, Microsoft, and Applause (formerly uTest), Jason Arbon leads a thought-provoking look into the future. Our new world will be powered by nearly infinite—and almost free—computing power, storage, and networking. Standardized software stacks and centralized testing as a service will enable machine learning not possible today. The software itself will generate far smarter test plans, automatically execute tests, explore app functions, and produce quantitative measures of quality. In Jason's future world, the end game is software-controlled test and release systems with feature-gating and feature-flighting—based on sophisticated, real-time analysis—in which real users safely become your manual testers. Join Jason and your peers to explore the future of testing in 2025, and figure out what we can do now to prepare the way.

## T3 WEARABLES/SMART TECHNOLOGY

### The Software Developers Guide to Prototyping Wearable Devices

Lance Gleason, [Polyglot Programming Inc.](http://Polyglot Programming Inc.)

Prototyping wearable devices used to be something that required specialized skills in electrical engineering, embedded development, and mechanical engineering. Today, thanks to the maker revolution, we can combine our deep knowledge of programming with basic electronics, soldering skills, and access to a 3D printer to create useful devices. In this session, we'll take a quick tour of some of the options and then do a deep dive into creating a wearable prototype using off the shelf boards. Through live demos and coding examples, we will take an idea and turn it into a working prototype that can communicate with a Android device over bluetooth.

THURSDAY, APRIL 16, 1:00pm

## T4 MOBILE DEVELOPMENT

### Plotting a Better Beer with Geolocation: An Untappd Case Study

Greg Avola, Untappd

Geolocation enhances the experience of many services and provides users with customized results based on their current location. Many people don't realize what an important role geolocation can play in locating their favorite beer—and Untappd, a mobile application around beer discovery, can help! Greg Avola offers a case study on how Untappd is employing geolocation to enhance the experience for its users and how geolocation has helped Untappd grow its business. Adding location to Untappd personalized the app and provided data that shows users what is being consumed locally. Because most microbrewery beer is distributed only in specific regions, users can find their favorite pint with Untappd. When visiting an area for the first time, Untappd users can discover what's popular. Greg discusses why geolocation is important to social and nonsocial applications and services, and how geolocation can help with your application feature decisions to improve your service and delight your customers.

## T5 MOBILE TESTING

### Mobile Application Dev and QA Testing with Simulated Environments

Wayne Ariola, Parasoft

Do you know that 63 percent of your users would be less likely to do business with you if they experience problems with your mobile application? To ensure top-notch user experience, you need to conduct thorough testing on unpredictable network conditions—even if testing components are unavailable. Wayne Ariola describes an innovative strategy of using simulated test environments to bring the behavior of system dependencies and network conditions under your direct control. Simulated test environments draw on two key technologies for anywhere access to a complete and realistic test environment. First, service virtualization enables teams to emulate the behavior of myriad dependencies involved in end-to-end mobile application transactions. Second, mobile network virtualization adds the ability to emulate the performance of network bandwidth, latency, and jitter. With these tools in place, developers and testers can ensure that applications are validated extensively and accurately so your customers will experience great performance.

## T6 WEARABLES/SMART TECHNOLOGY

### Wearables and Contactless Technology—for Payment Processing and Much More

David Meyer, FIS Mobile

The emergence of wearable devices like Google Glass, Apple Watch, and many others—combined with contactless technology such as near field communications—are being combined in new applications for payment processing, banking, and much more. Adopting wearables for contactless transactions will require technology shifts by both merchants and consumers. Using Google Glass as the wearable example, David Meyer demonstrates how users can see their account balance inside Google Glass to make purchase decisions, transmit the purchase authorizations, and transfer funds between their bank accounts. David discusses new security challenges and authentication issues with these technologies. He explores ways to improve adoption rates, including demographics to focus on, security standards to follow, UI limitations, considerations for application design, and API development. Take back a list of requirements for developing useful and compelling applications that combine wearables and contactless technology.

# CONCURRENT SESSIONS

THURSDAY, APRIL 16, 2:00pm

## T7 MOBILE DEVELOPMENT

### Windows Azure: Connecting the Dots for a Mobile Workforce

Mike Benkovich, *Imagine Technologies, Inc.*

We live in a mobile bring-your-own-device kind of world with a proliferation of devices—smart phones, tablets, and UltraBooks running iOS, Android, and Windows. People are working in online and offline modes, and moving from device to device. How do you build applications that provide a consistent view of identity, data, and services so that your workforce can be productive wherever they are? Mike Benkovich explores the latest features in Windows Azure and its Mobile Services to show you how to build connected applications that take advantage of the latest technologies, including data, identity, and push notifications. Mike describes the host of Windows Azure features and capabilities—dynamic schema, OAuth, and scripting technologies—that allow you to build secure applications quickly. In this fast-paced and demo-rich session, Mike will build and demonstrate client-side apps on Android devices, Windows Phones, and iOS to show you what is the possible today.

## T8 MOBILE TESTING

### Tips and Tricks for Building Secure Mobile Apps

Jeffery Payne, *Coveros, Inc.*

Mobile application development is now a mission-critical component of IT organizations and a big part of software industry's landscape. Due to the security threats associated with mobile devices, it is critical we build our apps—from the ground up—to be secure and trustworthy. However, many application developers and testers do not understand how to build and test secure mobile applications. Jeffery Payne discusses the risks associated with mobile platforms/applications and describes proven practices for ensuring the safety of your mobile applications. Jeffery delves into the unique nuances of mobile platforms and how these differences impact the security approach when you are developing and testing mobile applications. Topics include session management, data encryption, securing legacy code, and platform security models. Learn what to watch out for when you start developing your next mobile app and take away tips and tricks for effectively securing and testing existing apps.

## T9 WEARABLES/SMART TECHNOLOGY

### The Internet of Things and You

Jim McKeeth, *Embarcadero Technologies*

What is the Internet of Things (IoT)? What are the technologies that make it happen? Where do we see it today? Where will we see it tomorrow? What capabilities will it provide, and what do we need to know to take part in it? Jim McKeeth considers where IoT is taking us and discusses the hurdles we face today and in the future. With a focus on applications, Jim offers examples of IoT technology from the perspective of developers. Join Jim to learn about cross-platform development, cloud synchronization, app-to-app communication, Bluetooth, WiFi, security concerns, privacy issues, and more. Look at specific IoT devices now available that are changing the landscape for businesses and the consumer. Is the Internet of Things the dawn of a new age or just another way for "Big Brother" to watch our every move? Come find the answers to this and other thought-provoking questions.

THURSDAY, APRIL 16, 3:15pm

## T10 MOBILE DEVELOPMENT

### Architect a Winning Mobile Application

Shadi Saifan, *FIS Mobile*

Building mobile apps in today's highly dynamic environment comes with great uncertainty and risk. It's imperative to make the right design choices early on. Poor architectural decisions can make or break an app. In this technical session, Shadi Saifan focuses on the architecture and design considerations critical for building a winning mobile application—regardless of the device, operating system, or language. Shadi compares and contrasts the fundamental technology choice of developing mobile browser-based apps, developing native apps, or employing cross-platform tools and hybrid frameworks. Then, he goes into depth on the most critical mobile architectural issues with a focus on performance, data access, security, and connectivity. Shadi discusses considerations for designing applications that are easy to maintain and upgrade—design factors that are often brushed over. Leave with a new understanding of the up-front mobile development decisions required for success in today's environment.

## T11 MOBILE TESTING

### Mobile Performance Testing Crash Course

Dustin Whittle, *AppDynamics*

With more and more web traffic coming from mobile devices, performance on tablets and smartphones has a profound impact on user experience and, ultimately, your company's bottom line. Dustin Whittle shares the latest performance testing tools and insights for web developers. Dustin explores performance considerations for backend APIs and helps you better understand mobile performance on devices. Learn how to evaluate performance and scalability on both the server- and the client-side with tools such as Siege, Bees with Machine Guns, Google PageSpeed, WBench, and more. Find out why and how to add or improve performance testing within your development and test processes. Bring your toughest mobile performance questions and join in the discussion. Take back key tips on how to automate performance and load testing, and evaluate the impact that pre-launch and ongoing performance testing will have on your business.

## T12 WEARABLES/SMART TECHNOLOGY

### Software Attacks for Embedded, Mobile, and Internet of Things

Jon Hagar, *Independent Consultant*

In the world of embedded systems, mission-critical mobile apps, and the Internet of Things (IoT), developers and testers must do more than just look for feature bugs. To find potential failures and serious security errors, their arsenal should include attack-based exploratory testing. In the tradition of James Whittaker's *How to Break Software* books, Jon Hagar applies the "attack" concept to embedded, mobile, and IoT software. Jon examines common industry patterns of product failures and shares a set of his favorite software test attacks for native, web-based, and hybrid apps. He explains when and how to conduct the attacks, including the pros and cons of some attacks. Take back an arsenal of at least three basic tester attacks, three developer attacks, and three security attacks that you can employ on your current or next project.



# MOBILE INNOVATION & LEADERSHIP SUMMIT

Thursday, April 16 (evening) and Friday, April 17 (all day)

## Leadership on the Edge

The future of smart and mobile software drives the need for more collaborative and nimble teams and bigger ideas that push the boundaries of what “mobile” means. Join in the conversation with your peers as experienced leaders share ways to lead an organization living on the technical edge. Discover how seasoned leaders deal with changes in platform technology, development/testing tools, and agile development methods.

At the 2015 Mobile Dev + Test Innovation & Leadership Summit, summit chair Jaimee Newberry will bring together industry leaders for an interactive exchange of ideas and experiences.

Together we’ll explore the unique challenges facing industry leaders as they transform organizations to innovate and inspire. Hear what’s working—and not working—for them, and share your experiences, concerns, and successes.

The Mobile Dev + Test Innovation & Leadership Summit is a perfect opportunity for you to:

- Participate in insightful and informative sessions focusing on leadership issues
- Meet and network with your peers in the industry
- Join in the “think tank” discussion with industry veterans
- Develop new ideas and action plans for mobile innovation within your organization



**Jaimee Newberry**  
Independent  
Consultant  
Summit Chair

### THURSDAY, APRIL 16

**5:30** Reception—Innovation Summit Kick-Off Reception (Think Tank Issues Identified for Discussion on Friday)  
*Jaimee Newberry, Independent Consultant*

### FRIDAY, APRIL 17

**7:30** Registration and Breakfast

**8:30** Welcome  
*Jaimee Newberry, Independent Consultant*

**9:00** Thrive in the Mobile Business Revolution  
*Rene Ritchie, iMore*

**10:30** Innovation Think Tank Discussion: Solutions to Top Issues in Roundtables

**11:45** Networking Lunch Buffet

**12:45** Design for Humans  
*Dave Wiskus, Q Branch*

**1:45** Innovation Think Tank Continues

**3:15** Wrap-up and Ongoing Informal Discussions with Speakers and Attendees

# Testing & Quality Leadership Summit Sessions

FRIDAY, APRIL 17

9:00am

## Thrive in the Mobile Business Revolution

Rene Ritchie, *iMore*

The shift from desktop to mobile, from local to cloud, is the biggest change our industry has ever seen. In less than a decade we've gone from millions of PCs to billions of smart devices. We've made computing mainstream. To survive this change—to thrive during this period of intense disruption—we need to learn not only how to manage it, but how to best take advantage of it in our organizations. In this talk, Rene Ritchie will cover the difference between message and product, and between product and business, and how it can transform your company. He'll also explore the importance of being focused but not myopic, and of matching a simple, sustainable strategy for mobile innovation with the agile, adaptive tactics imperative for success.



**Rene Ritchie** is editor-in-chief of *iMore*, an internet publication with over 10 million monthly readers that provides daily news, reviews, features, and how-tos for iPhone, iPad, and Mac owners around the world. He's also co-host of the *Debug*, *Iterate*, *Vector*, and *MacBreak Weekly* podcasts, has authored several books, and appeared on numerous radio and TV broadcasts discussing Apple and the mobile industry. Based in Montreal, Canada, Rene has a background in design and product marketing, and when not working he likes to cook, grapple, and wrangle photons. Whether it be architecting, developing interfaces, managing production runs, composing articles, writing novels, or imagining new dynamics and ecosystems, his goal is to facilitate new approaches, grounded in tradition but fresh and innovative in their realization.

10:30am

## Innovation Think Tank Discussion: Solutions to Top Issues in Roundtables

Jaimee Newberry, *Independent Consultant*

Join with your peers in an engaging and highly interactive session to discuss the issues that affect you most. Using answers to the question—"As a leader, what is keeping you up at night?"—posed at Thursday's evening reception, participants will form small groups to work on finding solutions to pressing test management issues.

Discussions will review identified issues, barriers to change, and focus on innovative strategies and practical next steps.



Independent consultant **Jaimee Newberry** provides executive and personal coaching, and shares lessons in empathy, communication, experience design, and technology worldwide. Jaimee moved to GUI design and information architecture in the web start-up days; taught management information systems, graphic design, and interface design at UNLV; partnered in *Eatdrink*, a boutique animation/interactive shop; and led the efforts behind Zappos' first iPad, iPhone, and Android apps. As *Black Pixel's* director of user experience she worked on top secret iOS projects for Fortune 100 companies and promising startups.

12:45pm

## Design for Humans

Dave Wiskus, *Q Branch*

Dave Wiskus explores the meaning of design and its impact on our lives, with a tour through the choices that brought the tech industry and software design to where they are today, and where our choices will lead us tomorrow.

Every decision has a genesis, and every decision has an impact. Technology is created to empower people, but it all still starts with people.



**Dave Wiskus** is the designer at *Q Branch*, where he works on *Vesper* alongside John Gruber and Brent Simmons. He's also the host of *Better Elevation*, a video series deconstructing and analyzing the creative process, and he produces *The Talk Show* with John Gruber. He's designed apps for the NHL and Major League Soccer, along with a host of startups, and led design on *Kaleidoscope 2*, one of Apple's Best of 2013 picks for the Mac App Store. Dave has worked with major brands and independent developers, has appeared on numerous popular tech industry podcasts (including his regular spot on *Vector*), and has been tapped to speak at conferences around the world. His focus is on the ways in which humans connect with technology, and the ways in which we use it to connect with one another.

3:15pm

## Wrap up and On-Going Informal Discussion with Speakers and Attendees

In the morning think tank discussion you discovered solutions to some of your most challenging issues. Now each group will present their findings, share their solutions, and learn from each other. At the end of the think tank, all feedback will be collected and posted online to encourage further collaboration.



# VISIT *the* EXPO

Wednesday, April 15–Thursday, April 16

## Discover the Top Technologies and Tools All Under One Roof!

At the Mobile Dev + Test Conference Expo, you can visit the top industry providers offering the latest in mobile development and testing solutions.

- Explore this one-of-a-kind Expo, April 15–16, designed to bring you the latest solutions in mobile and smart technologies, software, and tools.
- Support your mobile software development and testing efforts by participating in technical presentations and demonstrations conducted throughout the Expo.
- Meet one-on-one with representatives from some of today's most progressive and innovative organizations.

Unable to join us for the entire week? Request your free 1-day Expo pass at <http://well.tc/Ayp>

## EXPO HOURS

### Wednesday, April 15

9:30am–3:15pm  
5:00pm–6:00pm

### Expo Reception

Wednesday 5:00pm–6:00pm

All attendees are invited to the Expo reception for complimentary food and beverages.

### Thursday, April 16

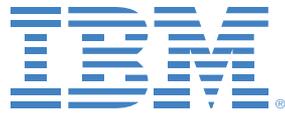
10:30am–3:15pm



# EXHIBITORS *and* CONFERENCE SPONSORS

The sponsors below will all be exhibiting at Mobile Dev + Test. Please come visit each of their booths to meet one-on-one with representatives from these innovative organizations!

## PLATINUM SPONSORS:



## GOLD SPONSORS:



## SILVER SPONSORS:



## PARTNERS:



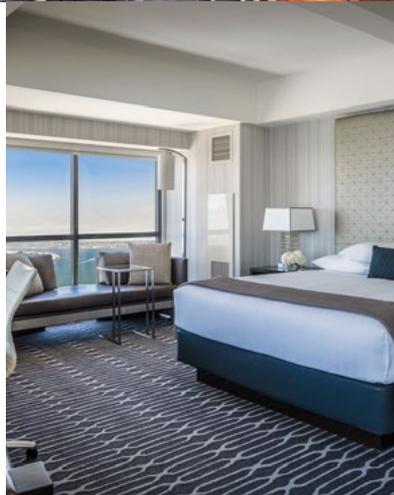
For sponsor/exhibitor news and updates, visit [mobiledevtest.techwell.com](http://mobiledevtest.techwell.com).

To become a sponsor/exhibitor, please contact [sales@sqe.com](mailto:sales@sqe.com).

# HOTEL SPOTLIGHT



Mobile Dev + Test will be held at the Manchester Grand Hyatt, recently named one of the “Best Meeting & Conference Hotels in the U.S.”. Stay at the Manchester and wake up to the sun sparkling off the San Diego Bay each morning and enjoy luxurious hotel features and amenities. Soak up the California sun when the day is done in the fourth-floor pool overlooking the bay or enjoy a walk on the boardwalk.



## Stay at the Center of the Action

Networking opportunities will be around every corner and inside every elevator at the Manchester Grand Hyatt. Save time getting to and from the sessions and exhibits—while enjoying the convenience of going back to your room between events to make phone calls and check emails. Plus, you’re just footsteps away from additional dining and entertainment in Downtown San Diego!

## EXCLUSIVE RATES *at the* MANCHESTER GRAND HYATT

### Special Hotel Rates for Mobile Dev + Test Attendees

Book your room reservation at the Manchester Grand Hyatt at the exclusive conference rate by March 20, 2015. Space is limited, so please reserve your room early! Use one of these options to make a reservation:

- **CALL the Manchester Grand Hyatt!**—Call Manchester Grand Hyatt reservations at 619.232.1234, available Mon–Fri from 8am–5pm PT. When calling, be sure to mention the Mobile Dev + Test conference to get the special conference rate. If you need special facilities or services, please notify the agent at the time of reservation.
- **BOOK ONLINE**—To book your hotel online or view the special conference room rates, go to <http://well.tc/Ayc>.
- **CALL US!**—Call client support at 888.268.8770.

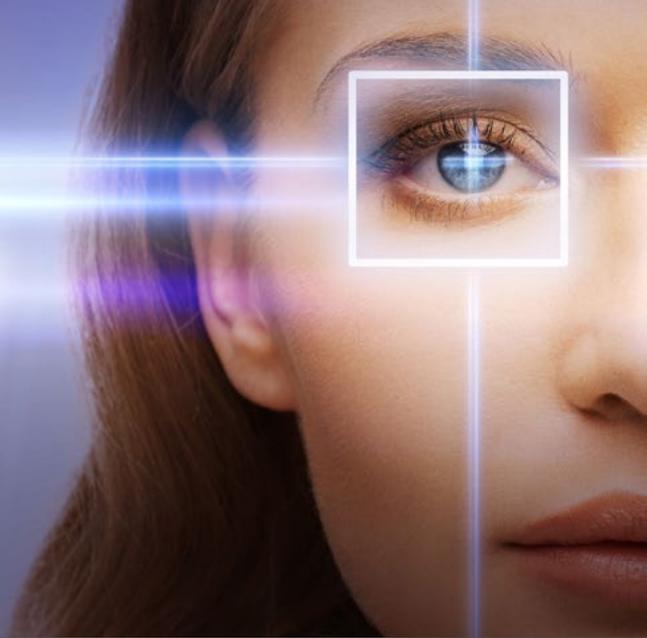
### Manchester Grand Hyatt is located at:

1 Market Place  
San Diego, CA 92101  
Reservations: 619.232.1234

*\* Cancellations on a guaranteed reservation must occur more than 5 days prior to the specified arrival time to ensure a refund.*

# SCANNING *for* the BEST DEAL?

## Ways to Save on Your Conference Registration



Your Best Value—The Full Conference Package (5 Full Days), including:

### TAKE A CLOSE LOOK AT YOUR BEST VALUE

*Only \$2,895 if you  
register before  
March 13*

- 2 Days of Pre-conference Tutorials
- 2 Days of Concurrent Sessions
- 1 Full-day of the Mobile Innovation & Leadership Summit
- 4 Industry-leading Keynotes
- The Expo
- All Networking & Special Events
- All Continental Breakfasts, Lunches, and Refreshment Breaks
- Combine with the other ways to save below for even more value!

### EARLY BIRD OFFER

Receive up to \$200 off the regular conference registration fee if payment is received on or before March 13, 2015 (depending on the conference package selected).

### GROUPS OF 3 OR MORE SAVE UP TO 20% OFF

Register a group of three or more at the same time and save up to 20% off each registration. To take advantage of this offer, please call the Client Support Group at 888.268.8770 or 904.278.0524 or email them at [clientsupport@techwell.com](mailto:clientsupport@techwell.com) and reference promo code GRP3 (see next page for more details).

### ALUMNI DISCOUNT

If you have attended any TechWell Event in the past (such as a STAR conference, Better Software conference, or Agile Development conference) you are eligible to receive up to \$150 off your registration fees (depending on conference package selected). Additionally, if you are a TechWell Events alumni and are unable to attend the conference this year, you may pass your alumni discount on to a colleague. Please call the client support at 888.268.8770 or 904.278.0524 or email them at [clientsupport@techwell.com](mailto:clientsupport@techwell.com) for more details on this special discount offer.

### MULTI-DAY TRAINING CLASS + CONFERENCE

Save almost \$200 when you attend any of the multi-day training classes and the conference (discount already reflected in the conference pricing).

# MOBILE DEV + TEST REGISTRATION

## APRIL 12-17, 2015 SAN DIEGO, CA, USA

### Easy to Register



**ONLINE:**  
mobiledevtest.techwell.com



**PHONE:**  
888.268.8770  
904.278.0524



**EMAIL:**  
clientsupport@techwell.com

### CONFERENCE PRICING

#### Registration Fees:\*

	Early Bird on or before March 13	After March 13	
<b>CONFERENCE</b>	<input type="checkbox"/> <b>Best Value Package (Mon-Fri)</b> <i>Includes 2 days of Pre-conference Tutorials, 2 Conference Days, and Mobile Innovation &amp; Leadership Summit</i>	<b>\$2,895</b>	<b>\$3,095</b> <b>BEST VALUE!</b>
	<input type="checkbox"/> Conference + 2 Tutorial Days	\$2,545	\$2,795
	<input type="checkbox"/> Conference + 1 Tutorial Day	\$2,295	\$2,395
	<input type="checkbox"/> Conference Only (Wed-Thur)	\$1,895	\$1,995
	<input type="checkbox"/> 2 Tutorial Days	\$1,695	\$1,795
	<input type="checkbox"/> 1 Tutorial Day	\$845	\$895
	<input type="checkbox"/> Mobile Innovation and Leadership Summit	\$745	\$795
	<input type="checkbox"/> Add Mobile Innovation and Leadership Summit (Friday) to any Conference package	\$500	\$500
<b>TRAINING</b>	<input type="checkbox"/> Mobile Application Testing + 1 Tutorial Day + Conference	\$3,495	\$3,695
	<input type="checkbox"/> Agile Tester Certification + 1 Tutorial Day + Conference	\$3,495	\$3,695
	<input type="checkbox"/> Product Owner Certification + 1 Tutorial Day + Conference	\$3,495	\$3,695

### BRING YOUR TEAM AND SAVE UP TO 20% ON EACH REGISTRATION!

See how much savings groups of 3+ can enjoy on one of our most popular conference packages: **Conference + 2 Tutorial Days**.

Number of Team Members	Regular Pricing	Early Bird Pricing (by March 13, 2015*)	Group Savings
1-2	\$2,795	\$2,595	
3-5	\$2,516	\$2,316	10%
6+	\$2,236	\$2,036	20%

\*Full payment must be received by deadline date

#### PAYMENT INFORMATION

The following forms of payment are accepted: Visa, MasterCard, Discover, American Express, check, or U.S. company purchase order. Payment must be received before the registration is confirmed. Make all checks payable to Software Quality Engineering. You will receive a confirmation email upon payment by check, credit card, or company purchase order. Payment must be received at Software Quality Engineering on or before March 13, 2015 to take advantage of the Early Bird conference rates listed above.

#### HOTEL RESERVATIONS

Take advantage of the discounted conference rate at the Manchester Grand Hyatt. To make a reservation, visit <http://well.tc/Ayc> or call 619.232.1234 by March 20, 2015 and mention you are a Mobile Dev + Test attendee to receive your discount. Cancellations on a guaranteed reservation must occur more than five days prior to the specified arrival time to ensure a refund. If you need special facilities or services, please specify at the time of reservation.

#### CANCELLATION POLICY

Conference registrations cancelled after March 16, 2015 are subject to 20% cancellation fee. No cancellations or refunds may be made after March 23, 2015. Substitutions may be made at any time before the first day of the program. Call the Client Support Group at 904.278.0525 or 888.268.8770 to obtain a cancellation code. All valid cancellations require a cancellation code.

#### SATISFACTION GUARANTEE

Software Quality Engineering is proud to offer a 100% satisfaction guarantee. If we are unable to satisfy you, we will gladly refund your registration fee in full.

#### MEDIA RELEASE

From time to time we use photographs, video, and audio of conference participants in our promotional and publishing materials. By virtue of your attendance at the Mobile Dev + Test conference, you acknowledge that Software Quality Engineering, Inc. reserves the right to use your likeness in such materials.

\*Your registration includes a digital subscription to **Better Software** magazine.