Pain Is Over, If You Want It

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Practice Director, 18F
2015-10-19

Slide deck: http://goo.gl/CrCUii

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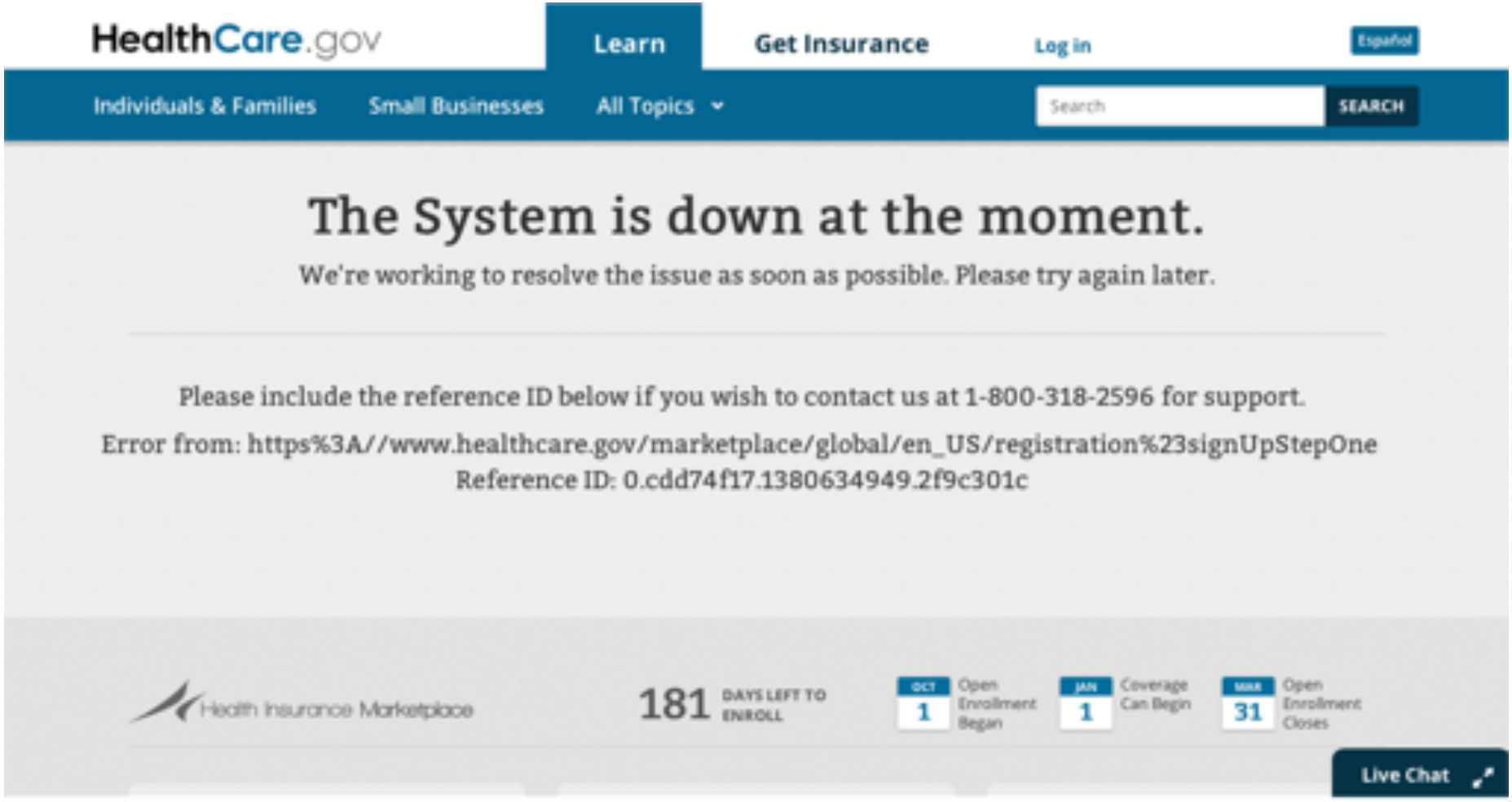
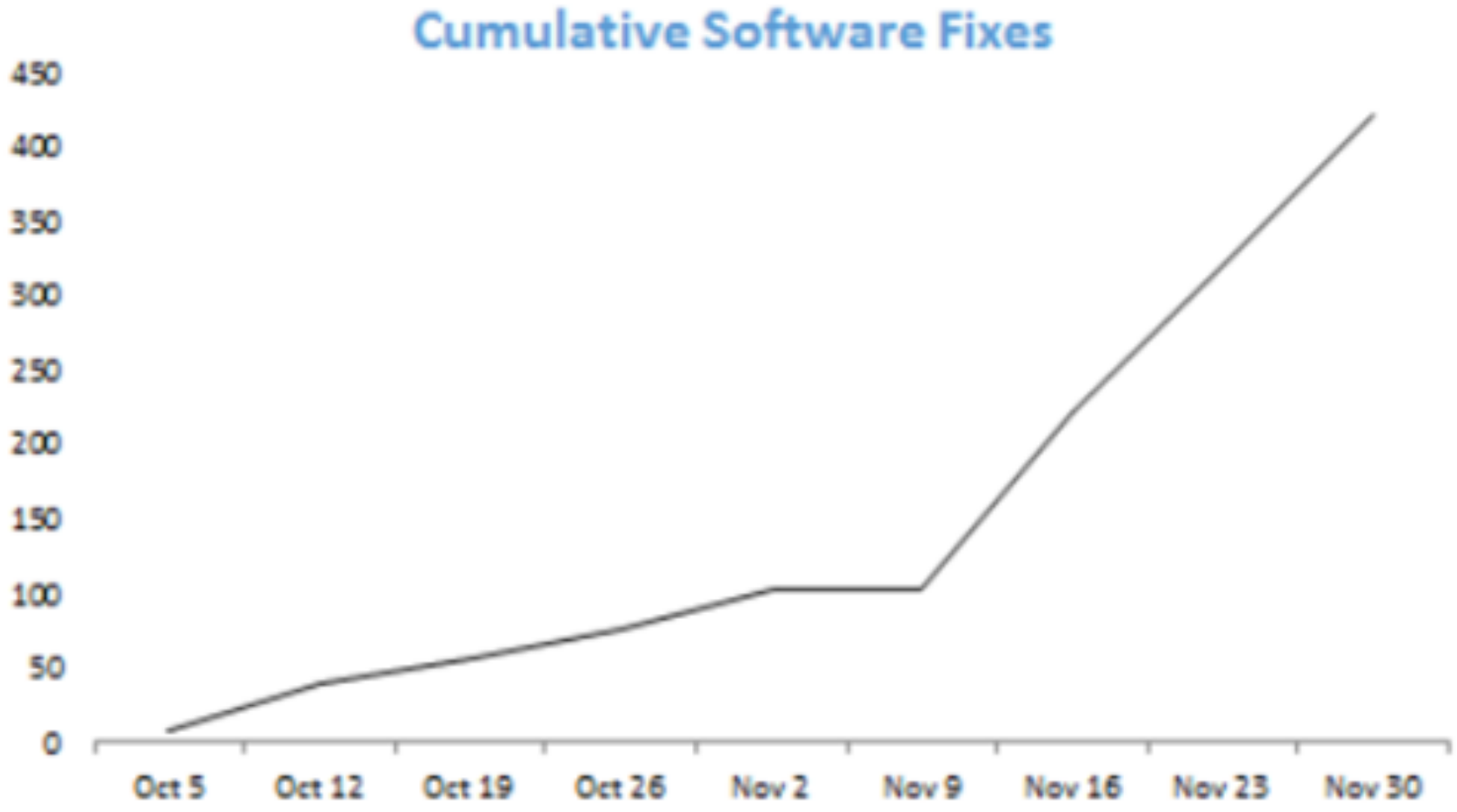
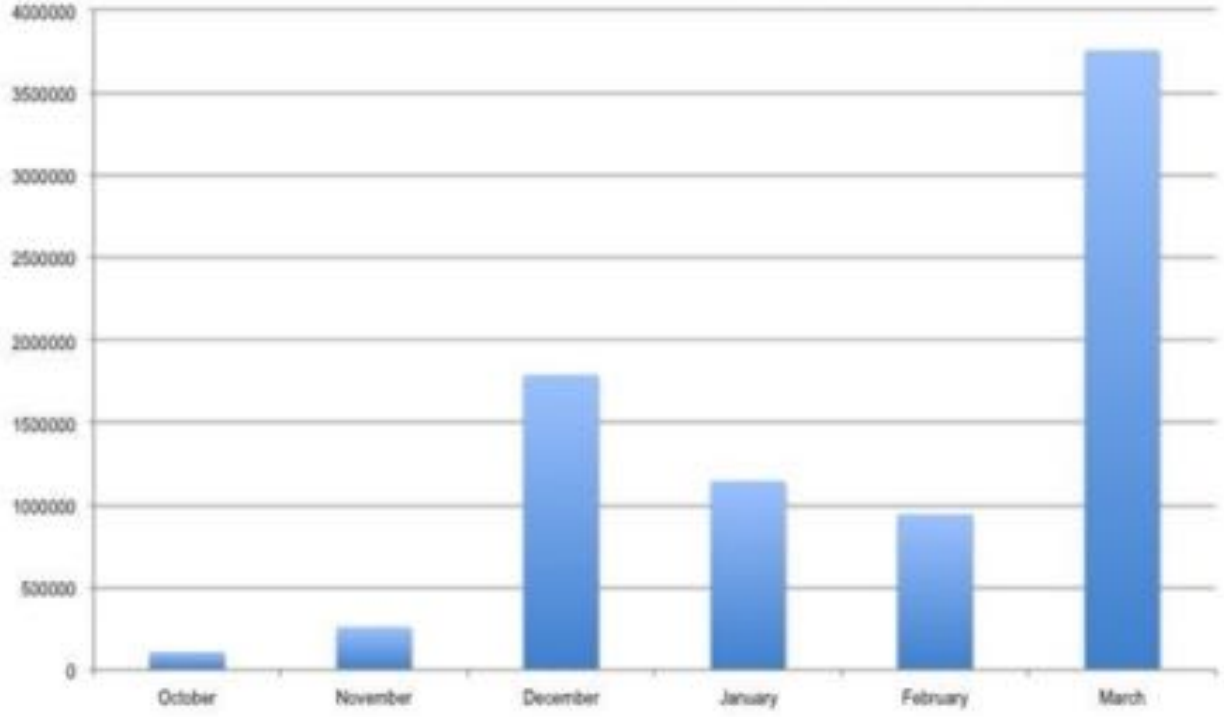

HealthCare.gov
Learn
Get Insurance
Log in
Español
Individuals & Families
Small Businesses
All Topics
Search
SEARCH
The System is down at the moment.
We're working to resolve the issue as soon as possible. Please try again later.
Please include the reference ID below if you wish to contact us at 1-800-318-2596 for support.
Error from: https%3A//www.healthcare.gov/marketplace/global/en_US/registration%23signUpStepOne
Reference ID: 0.cdd74f17.1380634949.2f9c301c
Health Insurance Marketplace
181 DAYS LEFT TO ENROLL
OCT 1 Open Enrollment Began
JAN 1 Coverage Can Begin
MAR 31 Open Enrollment Closes
Live Chat


Cumulative Software Fixes
450
400
350
300
250
200
150
100
50
0
Oct 5
Oct 12
Oct 19
Oct 26
Nov 2
Nov 9
Nov 16
Nov 23
Nov 30

Obamacare's Late Signup Surge



Source: Department of Health and Human Services

NEW REPUBLIC

So now what?

IBM

Google 2005

Code gets added.

Tools get slower.

Builds take longer.

Tests take forever.

Code goes untested.

Dependency cruft builds.

Large, infrequent changes frequently conflict.

Builds break overnight.

Emergency pushes common.

Fear is the mind killer.

Web Images Groups News Froogle Local[New!] more »

Advanced Search
Preferences
Language Tools

Google Search I'm Feeling Lucky

Advertising Programs - About Google

©2005 Google - Searching 8,058,044,651 web pages

Enormous early success	**Inertia**
Overconfidence, arrogance, Impostor Syndrome	Insecurity
Inexperience, “My code is too hard to test”	Ignorance
Old tools, “I don’t have time to test.”	Friction

Impact of testing is impossible to measure a priori

*(After-the-fact: **`goto fail;`** and Heartbleed)*

Priority Structure

If it can't be measured,

(e.g. more clicks)

it doesn't matter.

(i.e. won't get me promoted)

Ignorance/Communication Breakdown

How does culture change?

Not like this...

Or like this...

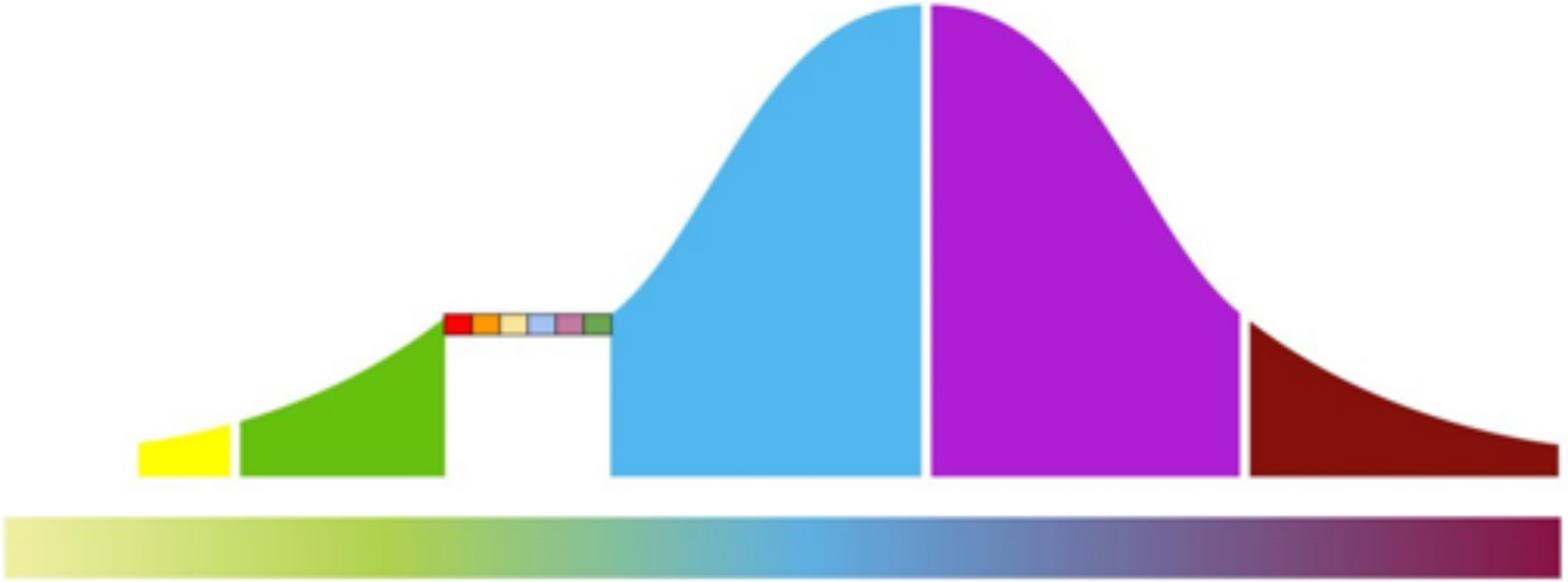
Beware of heroes, echo chambers

Cultivate mythology as a ***useful model***

What did we have to work with?

Employee directory, project database, wiki/Sites	**Transparency**
Freedom to experiment, 20% time	Autonomy
Grouplet system, startup ethos	Collaboration

Crossing the Chasm



GWS tech lead Bharat Mediratta believed automated testing would help…

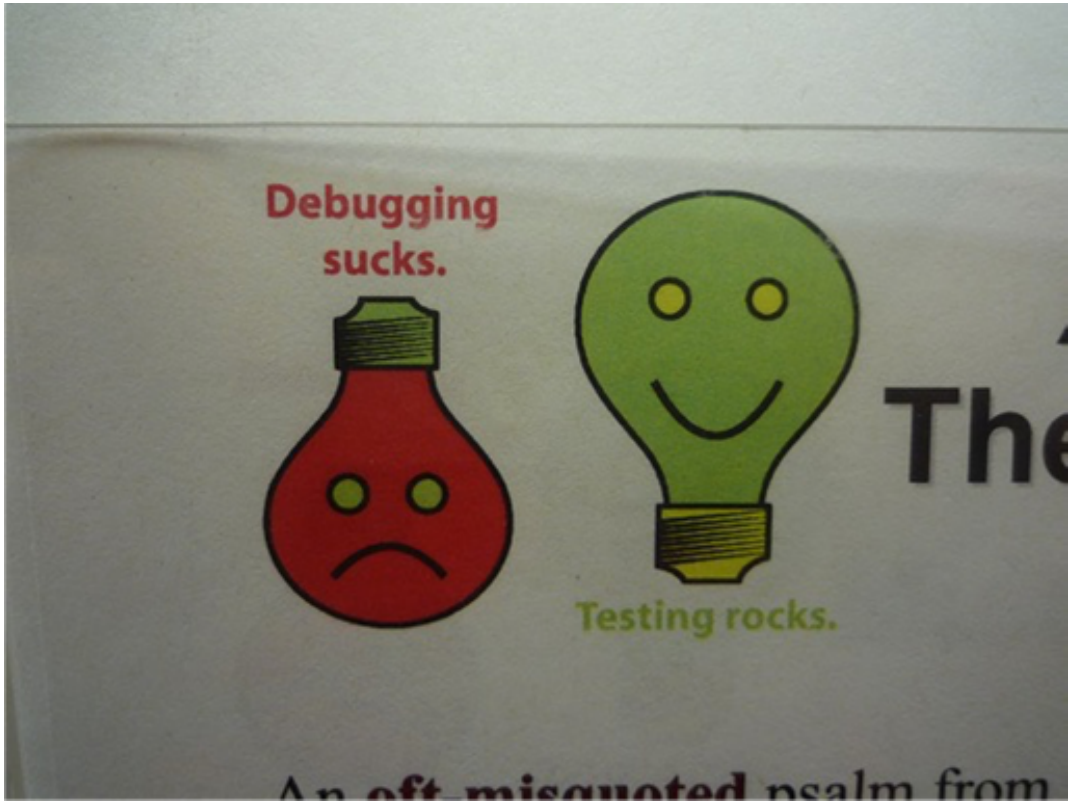
…and it did.

Testing Grouplet

Started by Bharat Mediratta and Nick Lesiecki

Volunteers pooling 20% time

to drive adoption of automated testing



Testing on the Toilet (TotT)

Ubiquitous,
incremental exposure

Test Certified (TC)

Clear, tangible path via measurement, policy, goals

Test Mercenaries

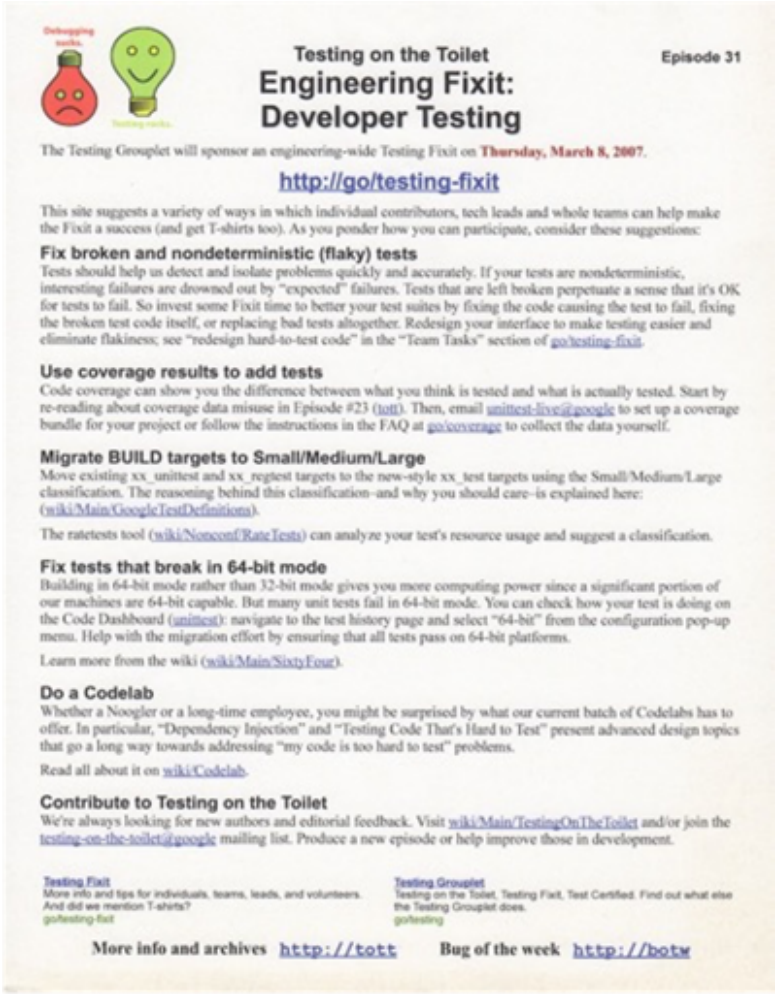
Hands-on help, tool adoption and advocacy

Fixits

Company-wide events, usually one day long

Address “important but not urgent” backlog

Focus, motivation, concrete goals, free stuff



Testing on the Toilet — Episode 31

Engineering Fixit: Developer Testing

The Testing Grouplet will sponsor an engineering-wide Testing Fixit on **Thursday, March 8, 2007**.

http://go/testing-fixit

This site suggests a variety of ways in which individual contributors, tech leads and whole teams can help make the Fixit a success (and get T-shirts too). As you ponder how you can participate, consider these suggestions:

Fix broken and nondeterministic (flaky) tests

Tests should help us detect and isolate problems quickly and accurately. If your tests are nondeterministic, interesting failures are drowned out by “expected” failures. Tests that are left broken perpetuate a sense that it's OK for tests to fail. So invest some Fixit time to better your test suites by fixing the code causing the test to fail, fixing the broken test code itself, or replacing bad tests altogether. Redesign your interface to make testing easier and eliminate flakiness; see “redesign hard-to-test code” in the “Team Tasks” section of go/testing-fixit.

Use coverage results to add tests

Code coverage can show you the difference between what you think is tested and what is actually tested. Start by re-reading about coverage data misuse in Episode #23 (tott). Then, email unittest-live@google to set up a coverage bundle for your project or follow the instructions in the FAQ at go/coverage to collect the data yourself.

Migrate BUILD targets to Small/Medium/Large

Move existing xx_unittest and xx_regtest targets to the new-style xx_test targets using the Small/Medium/Large classification. The reasoning behind this classification–and why you should care–is explained here: (wiki/Main/GoogleTestDefinitions).

The ratetests tool (wiki/Nonconf/RateTests) can analyze your test's resource usage and suggest a classification.

Fix tests that break in 64-bit mode

Building in 64-bit mode rather than 32-bit mode gives you more computing power since a significant portion of our machines are 64-bit capable. But many unit tests fail in 64-bit mode. You can check how your test is doing on the Code Dashboard (unittest): navigate to the test history page and select “64-bit” from the configuration pop-up menu. Help with the migration effort by ensuring that all tests pass on 64-bit platforms.

Learn more from the wiki (wiki/Main/SixtyFour).

Do a Codelab

Whether a Noogler or a long-time employee, you might be surprised by what our current batch of Codelabs has to offer. In particular, “Dependency Injection” and “Testing Code That's Hard to Test” present advanced design topics that go a long way towards addressing “my code is too hard to test” problems.

Read all about it on wiki/Codelab.

Contribute to Testing on the Toilet

We're always looking for new authors and editorial feedback. Visit wiki/Main/TestingOnTheToilet and/or join the testing-on-the-toilet@google mailing list. Produce a new episode or help improve those in development.

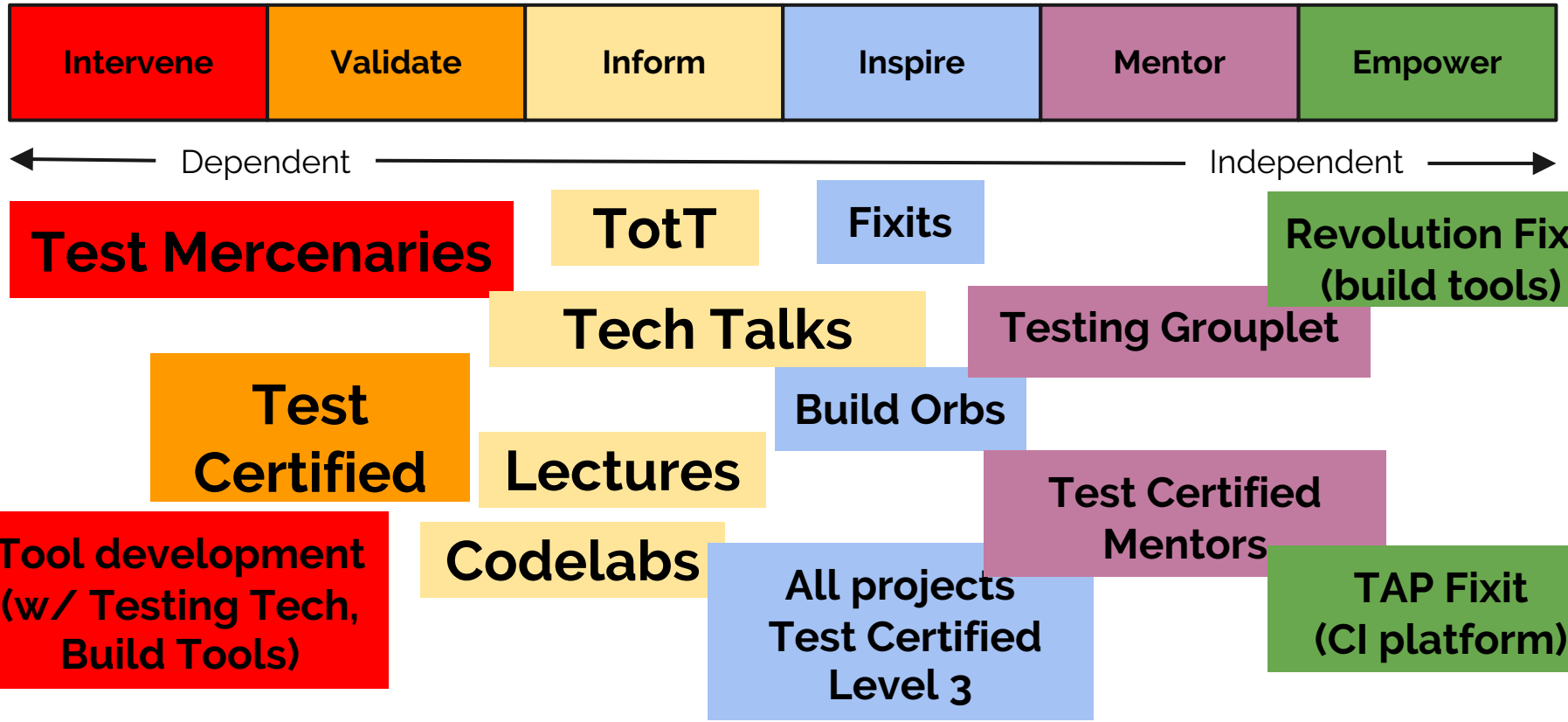
Testing Fixit
More info and tips for individuals, teams, leads, and volunteers. And did we mention T-shirts?
go/testing-fixit

Testing Grouplet
Testing on the Toilet, Testing Fixit, Test Certified. Find out what else the Testing Grouplet does.
go/testing

More info and archives http://tott **Bug of the week** http://botw

Five years later…

Rainbow of Death: Testing Grouplet



Google Stats 2013 via Eran Messeri

15,000 developers, working on 4K projects

All code is checked into one source tree

5,500 code commits/day

75 million test cases are run daily

The Value to Developers

Power and knowledge to do the right thing

Thorough automated testing now the norm

Most breakages fixed before clients notice

Less fear, more confidence, flow, and joy

18F 2015

Founded March 2014 by
Presidential Innovation Fellows

Open-source development,
Agile methodologies

Educate, reform procurement,
not replace vendors

Savings as a natural side-effect

18F

USCIS - Citizenship Right

https://my.uscis.gov/citizenship/information

Official website of the Department of Homeland Security

Go to uscis.gov

U.S. Citizenship and Immigration Services

EXPLORE RESOURCES

Rights and responsibilities

Citizenship is the common thread that connects all Americans. We are a nation bound by the shared values of freedom, liberty, and equality. Explore some of the rights and responsibilities you will gain as a citizen.

Learn about what to expect in the naturalization process

Learn more about citizenship

You have the right to live in the United States.

You can vote in federal elections.

You are expected to be loyal to the United States and support the Constitution.

Every Kid in a Park | Main

https://everykidinapark.gov

An official website of the United States Government

Parents | Educators | About

HOW IT WORKS

GET YOUR PASS

PLAN A TRIP

EVERY KID IN A PARK

Hey fourth graders! See America's natural wonders and historic sites for free.

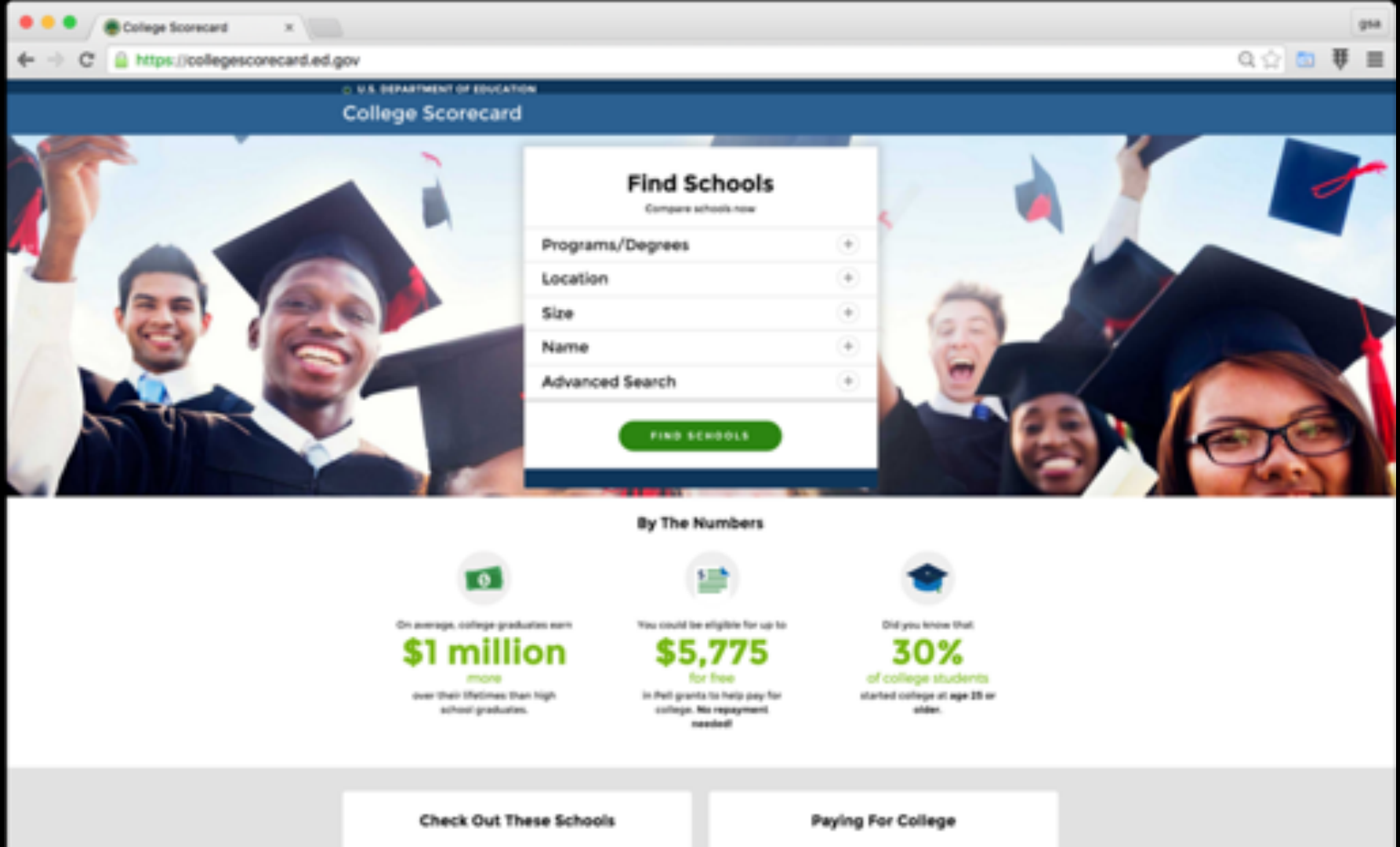
LET'S GO!

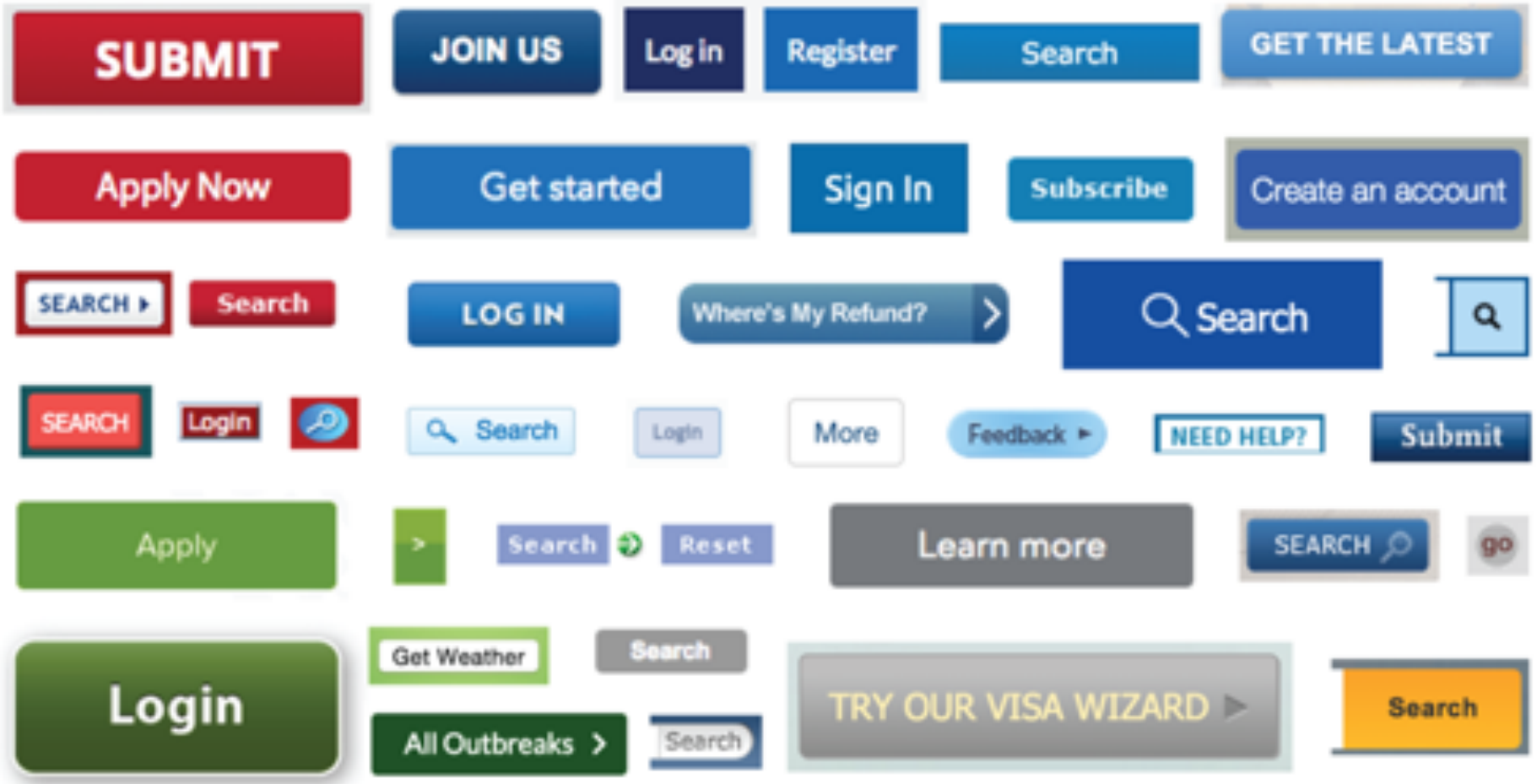
Play outdoors.

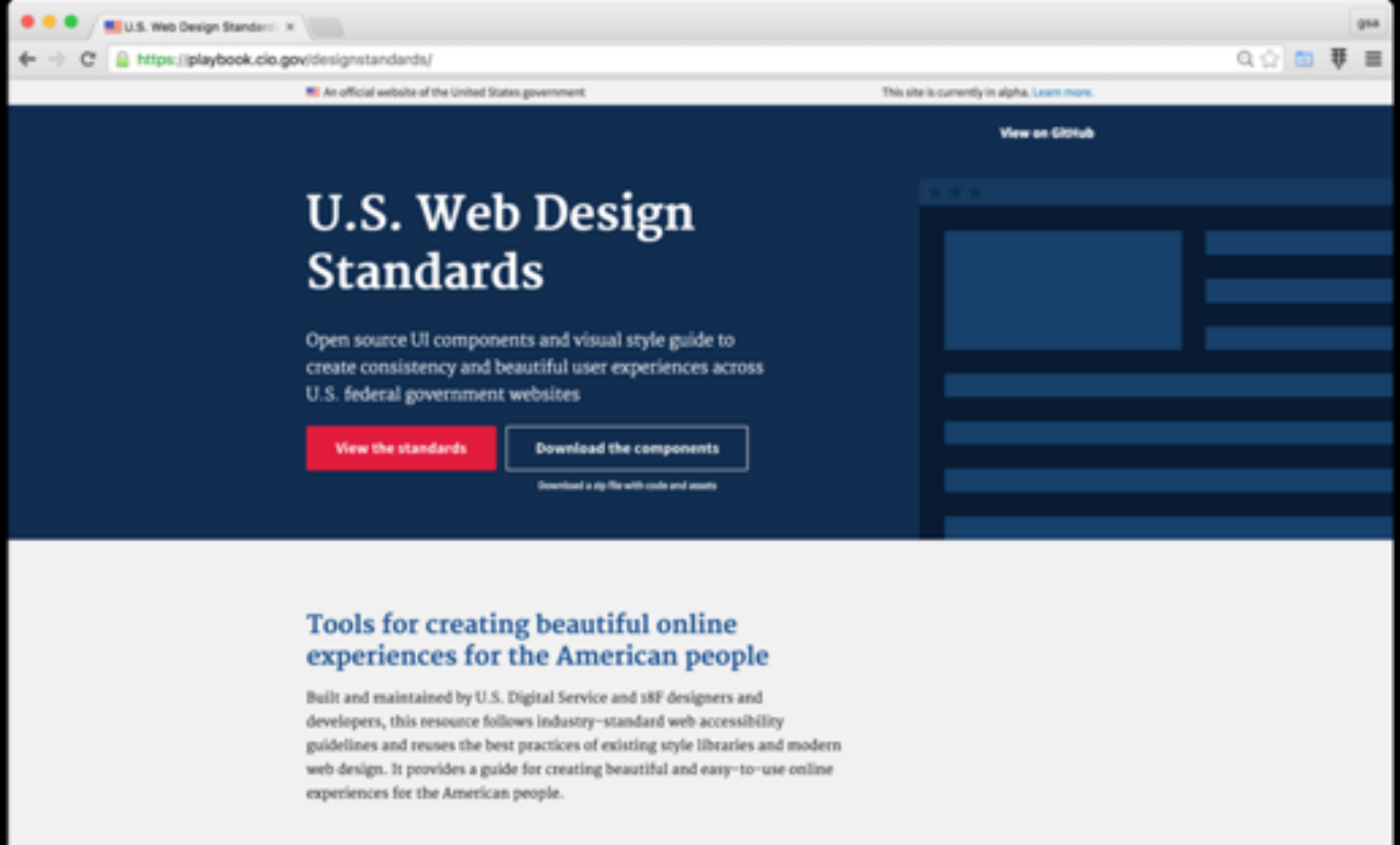
Every Kid in a Park

You and your family get free access to hundreds of parks, lands, and waters for an entire year.

HOW IT WORKS


College Scorecard
https://collegescorecard.ed.gov
U.S. DEPARTMENT OF EDUCATION
College Scorecard
Find Schools
Compare schools now
Programs/Degrees
Location
Size
Name
Advanced Search
FIND SCHOOLS
By The Numbers
On average, college graduates earn
$1 million
more
over their lifetimes than high school graduates.
You could be eligible for up to
$5,775
for free
in Pell grants to help pay for college. No repayment needed!
Did you know that
30%
of college students
started college at age 25 or older.
Check Out These Schools
Paying For College


SUBMIT
JOIN US
Log in
Register
Search
GET THE LATEST
Apply Now
Get started
Sign In
Subscribe
Create an account
SEARCH
Search
LOG IN
Where's My Refund?
Search
SEARCH
Login
Search
Login
More
Feedback
NEED HELP?
Submit
Apply
Search
Reset
Learn more
SEARCH
go
Login
Get Weather
Search
All Outbreaks
Search
TRY OUR VISA WIZARD
Search


U.S. Web Design Standard
https://playbook.cio.gov/designstandards/
gsa
An official website of the United States government
This site is currently in alpha. Learn more.
View on GitHub
U.S. Web Design Standards
Open source UI components and visual style guide to create consistency and beautiful user experiences across U.S. federal government websites
View the standards
Download the components
Download a zip file with code and assets
Tools for creating beautiful online experiences for the American people
Built and maintained by U.S. Digital Service and 18F designers and developers, this resource follows industry-standard web accessibility guidelines and reuses the best practices of existing style libraries and modern web design. It provides a guide for creating beautiful and easy-to-use online experiences for the American people.

TESTING

Priority Structure

limiting perceived risk
meeting regulatory requirements
job security
Internalization: Don’t rock the boat

No quality incentives, PCSRA, "successful company" people	**Inertia**
Avoid risk/"accountability", "gov't can't attract talent"	Insecurity
Waterfall is familiar, testing is someone else's job	Ignorance
Outdated tools/procedures, vendor lock-in of code, data	Friction

Policy often mandated by nontechnical people

Development teams disconnected from end users

They don't know what they don't know

Ignorance/Communication Breakdown

First Day at Google, August 29, 2005

Employee directory
Code browser
Project data base
Wiki
EngEDU
Codelabs

Tech Talks
Snippets
Objectives and Key Results
20% time
Grouplets

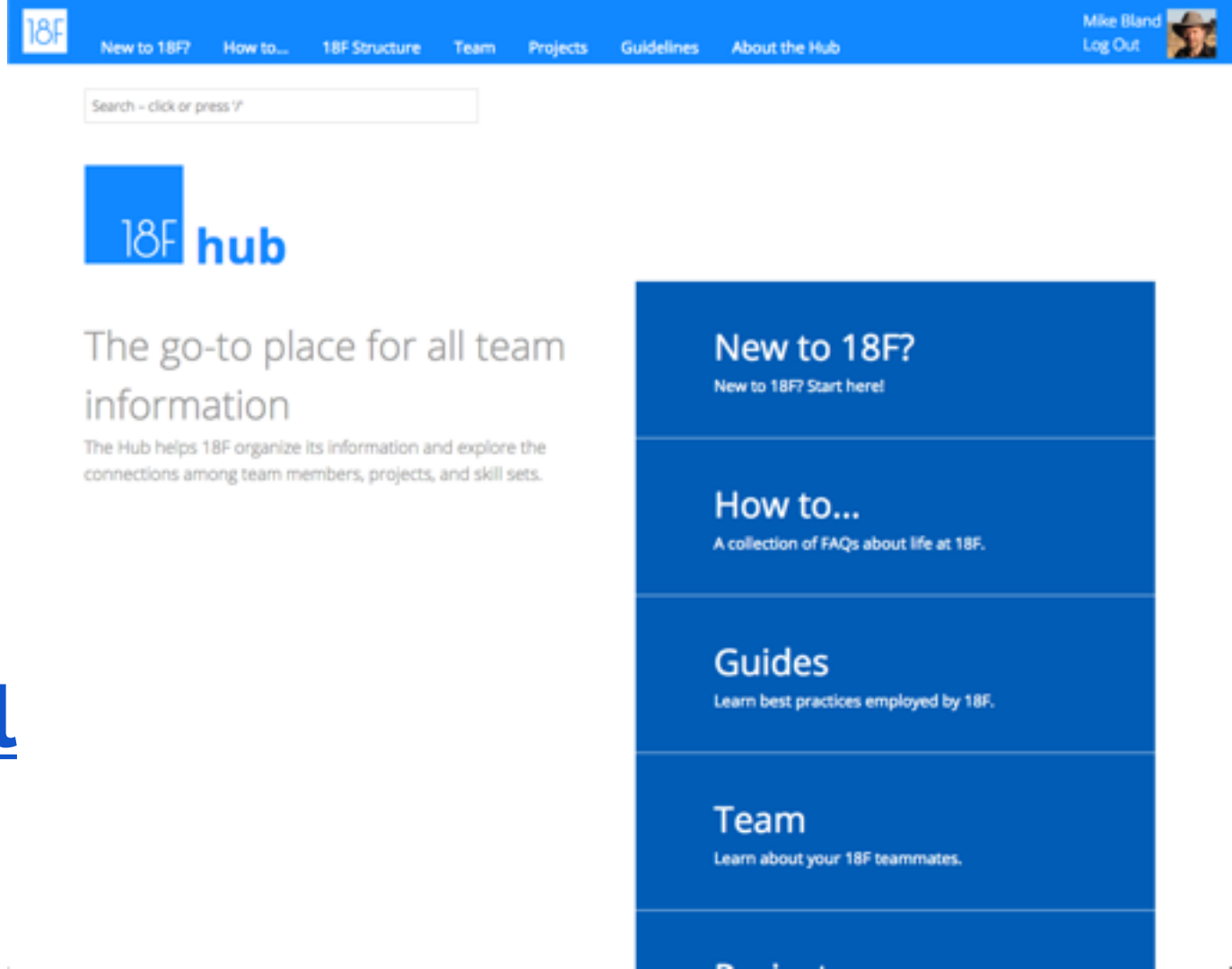
First Day at 18F, November 3, 2014

Where are the docs?
Who do I ask?
What do I need to know?
How do I get access to everything?
Who's on my team?
Who's working on what?
How can I contribute?

18F Hub

Team API

.about.yml



Working Groups and Guilds

18F Documentation Working Group

- Introduction
- Main repository
- .about.yml
- Objectives and Key Results
- Meeting agendas
- 18F Hub +
- 18F Pages +
- 18F Guides +

Introduction

Who are we?

We are a working group dedicated to organizing all of 18F's information and making it universally accessible and useful, internally and externally.

What do we do/what have we done?

Some of our projects include the 18F Hub, 18F Pages, and 18F Guides. We've also had a hand in relaunching the Onboarding Working Group and in spawning the 18F Edu team.

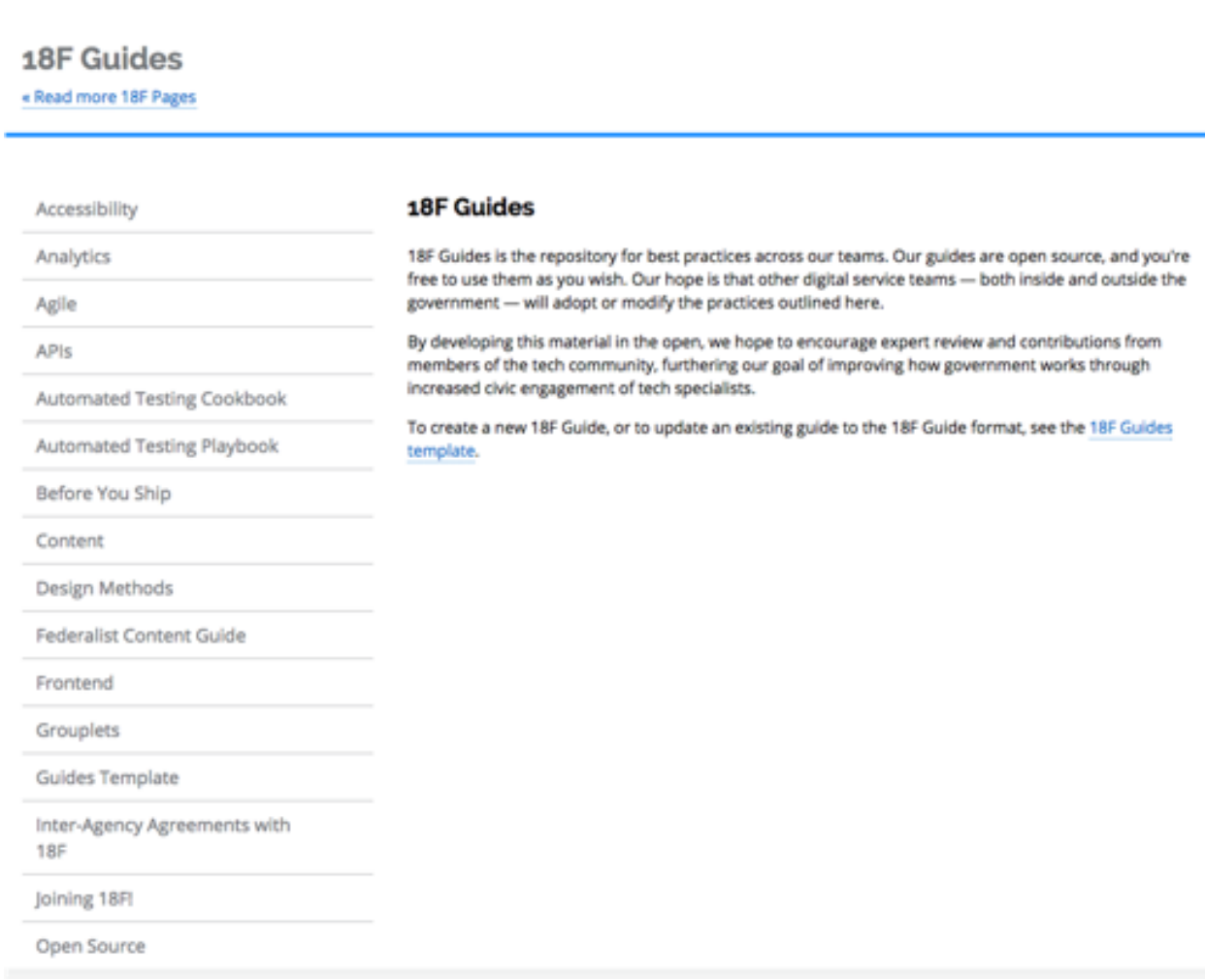
Where are we/how can you reach us?

Our 18F Slack channel is #wg-documentation. We hold regular meetings on Tuesdays at 1:30pm Eastern Time.

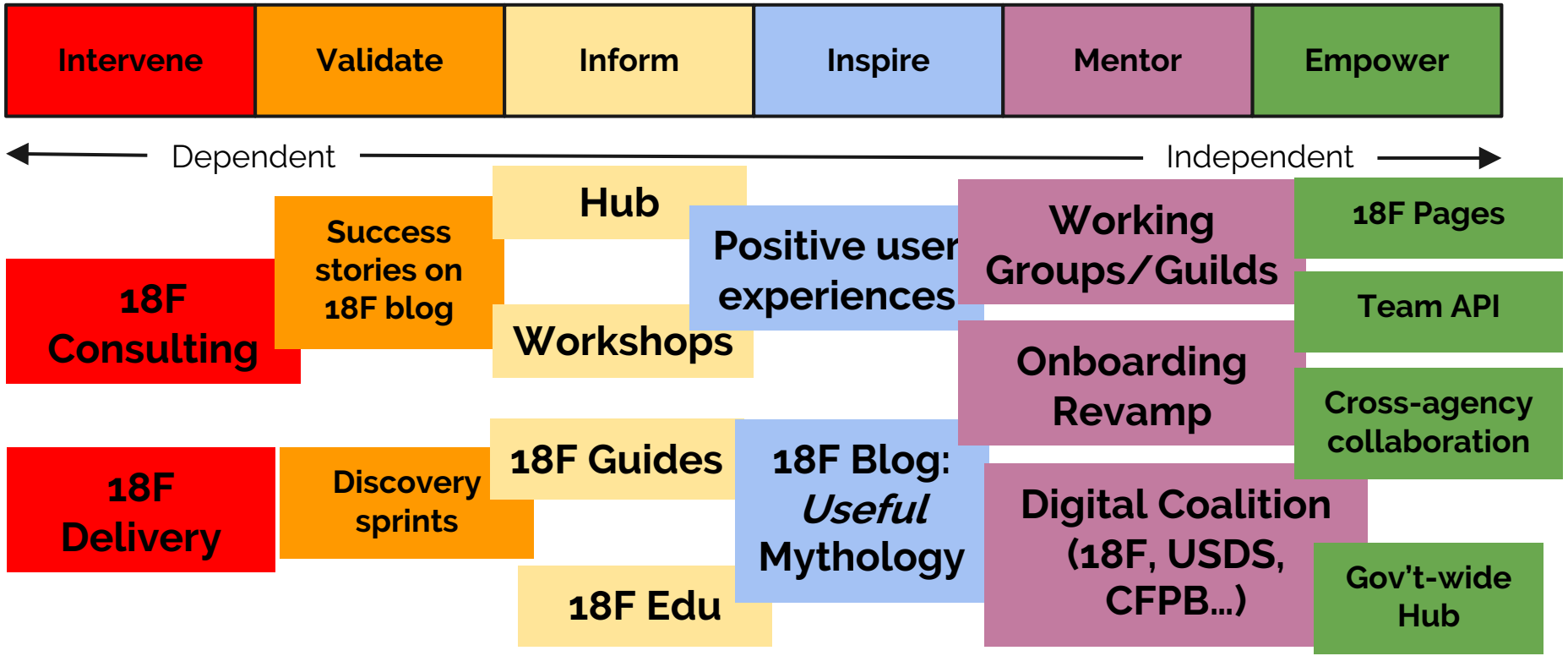
18F Pages

18F Guides

18F Edu



Rainbow of Death: 18F



The Hub, Team API, .about.yml **Transparency**

18F Pages, 18F Guides, 18F Edu Autonomy

Working Groups and Guilds Collaboration

Can it succeed?

“Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, ***it’s the only thing that ever has***.”

Margaret Mead

Will it succeed?

Yes, if we want it to.

How can you help us?

Validate

Inform

Inspire

Empower

https://18f.gsa.gov

https://github.com/18F

Slides: https://goo.gl/CrCUii