Five Minute Version

● What are Events? What are Custom Variables?
  ○ Definitions & Differences
● Understanding them in GA reports
● CONTENTdm example
Twenty Minute Version

- How does GA work under the hood?
- What are Events? What are Custom Variables?
  - Definitions & Differences
- Understanding them in GA reports
- Examples
  - CONTENTdm (on GitHub)
  - Drupal
  - NCSU?
How to implement events and custom variables
  - Adding code or setting a configuration
  - Classic vs. Universal
  - Gotchas
  - Script timing issues
  - Diagnosing problems
Events and Custom Variables

● Out of the box, GA gives you all kinds of general data:
  ○ Audience: visits, technology, location
  ○ Acquisition: search, referral, direct
  ○ Behavior: pageviews, landing/exit pages

What if you need to know something more specific?
Variables help define the audience

Events help define their behavior
Events and Custom Variables

- Record personalized data about your site’s usage
- Events:
  - **STUFF THAT’S HAPPENING** on your site beyond basic pageviews
  - e.g., download, facet click, video play
- Custom Variables:
  - Additional data about **WHO’S DOING THE STUFF** on your site
  - Conceptually like a custom segment
  - e.g., users not logged in, people with items in their shopping cart
  - In Universal Analytics, these are replaced by **Custom Dimensions**
Which to use?

- Depends on what you want to know!

If you want to know more about **things that happen** on the site, like…

...how many times X happens
...how often users click feature Y
...what the value of Z is on each page as users browse

...then you probably want to use **EVENTS**

If you want to know more about the **people using your site**, like…

...which visitors are logged in
...which visitors have site badges
...which visitors have tried the site search

...you probably want to use **CUSTOM DIMENSIONS (aka CUSTOM VARIABLES)**
At the State Library of North Carolina, we wanted to record certain metadata fields as part of Analytics.
<table>
<thead>
<tr>
<th><strong>Place</strong></th>
<th>Brunswick County, North Carolina, United States</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Description</strong></td>
<td>&quot;March 2013.&quot;</td>
</tr>
<tr>
<td><strong>Publisher</strong></td>
<td>N.C. Department of Transportation, Transportation Planning Branch</td>
</tr>
<tr>
<td><strong>Agency-Current</strong></td>
<td>North Carolina Department of Transportation</td>
</tr>
<tr>
<td><strong>Rights</strong></td>
<td>State Document see <a href="http://digital.ncdcr.gov/u/p249901coll22,63754">http://digital.ncdcr.gov/u/p249901coll22,63754</a></td>
</tr>
<tr>
<td><strong>Physical Characteristics</strong></td>
<td>153 p. of electronic text: digital, PDF file with maps and plans.</td>
</tr>
<tr>
<td><strong>Collection</strong></td>
<td>North Carolina State Documents Collection. State Library of North Carolina</td>
</tr>
</tbody>
</table>

Specifically, we wanted to be able to report how often each state agency’s documents were being used.
Events - example from SLNC

● Custom GA script developed:
  ○ Locate field names
  ○ Whenever an Agency is set, record it!
  ○ Generate GA event with the value

https://github.com/joshwilsonnc/ga_cdm
...now we have this data and can report it to state agencies.

<table>
<thead>
<tr>
<th>Event Action</th>
<th>Total Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. North Carolina Department of Cultural Resources</td>
<td>3,578</td>
</tr>
<tr>
<td>2. North Carolina Office of Archives and History, Department of Cultural Resources</td>
<td>1,866</td>
</tr>
<tr>
<td>3. North Carolina Office of Archives and History, Department of Cultural Resources</td>
<td>1,860</td>
</tr>
<tr>
<td>4. North Carolina General Assembly</td>
<td>813</td>
</tr>
<tr>
<td>5. North Carolina Department of Environment and Natural Resources</td>
<td>497</td>
</tr>
<tr>
<td>6. North Carolina Department of Health and Human Services</td>
<td>489</td>
</tr>
<tr>
<td>7. North Carolina Department of Public Instruction</td>
<td>474</td>
</tr>
<tr>
<td>8. North Carolina Department of Transportation</td>
<td>453</td>
</tr>
<tr>
<td>9. North Carolina Department of Commerce</td>
<td>368</td>
</tr>
</tbody>
</table>
Demo time!

- More examples
  - CMSs
  - GA snippet
- Implementation
- Gotchas

If there’s time: GA under the hood, or your questions
OCLC offers a default Google Analytics tool.

Works with Universal Analytics.

Enable in Website Config Tool.
Events - example from CONTENTdm

OCLC’s default analytics provides detailed events relevant to how visitors use CONTENTdm.

Categories cover a lot!

You can drill down for details.
Events - example from CONTENTdm

Drilling down into the Facets Category for relevant Actions
Drill down into the Actions for Labels:

The facets that were Toggled or Clicked are recorded here:

<table>
<thead>
<tr>
<th>Event Label</th>
<th>Total Events</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Place</td>
<td>409</td>
</tr>
<tr>
<td>2. Time Period</td>
<td>400</td>
</tr>
<tr>
<td>3. Subject</td>
<td>237</td>
</tr>
<tr>
<td>4. Format</td>
<td>174</td>
</tr>
<tr>
<td>5. Format-Medium</td>
<td>166</td>
</tr>
<tr>
<td>6. Coverage-Spatial</td>
<td>105</td>
</tr>
<tr>
<td>7. Coverage-Temporal</td>
<td>90</td>
</tr>
<tr>
<td>8. Creator</td>
<td>63</td>
</tr>
<tr>
<td>9. Publisher</td>
<td>26</td>
</tr>
<tr>
<td>10. Project Subject</td>
<td>20</td>
</tr>
</tbody>
</table>

1,720
% of Total: 2.70%
(83,704)
Drupal

Google Analytics module makes it easy to add custom variables within the administration GUI. You can also add custom snippets (say, for Events) easily.
In NCpedia, we are tracking usage by original source.
Add this line to your tracking code:

```
 TrackEvent(category, action, opt_label, opt_value, opt_noninteraction);
```

Universal Analytics syntax:

```
 ga('send', 'event', 'category', 'action', 'opt_label', opt_value, opt_fields);
```

- **Strings**
- **Integer**
- **Boolean**
- **Mixed**

**ga method parameters**
Track a Category and Action:
   _trackEvent(‘Videos’, ‘Play’);

Add a label:
   _trackEvent(‘Videos’, ‘Play’, ‘Amazing Cat Video’);

Additional fields available:
   _trackEvent(‘Videos’, ‘Play’, ‘Amazing Cat Video’, viewTime);
   _trackEvent(‘Videos’, ‘Play’, ‘Amazing Cat Video’, viewTime, true);
Events - organizing data

Category 1
Action 1
Label
Action 2
Category 2
Action 1
...

Videos
- Play
  Amazing Cat Video
- Download
Polls
- Submission
  ...
  ...

...
Events - organizing data

Category 1
  Action 1
  Label
  Action 2

Category 2
  Action 1

Thing
  Broad details
  Drilldown details
  Other broad details

Another Thing
  Some details
Events - Gotchas

● Changing a category/action/label?
  ○ Surprise! It’s now a new event
  ○ Need to balance clarity with consistency

● Test to make sure it’s actually recording
  ○ Look at real-time
  ○ Use an HTTP watching tool (e.g., HTTPFox)
  ○ Or just wait a day
CONTENTdm Gotchas

Some things to watch out for when tinkering with GA in CONTENTdm…

● Occasionally horrifying DOM traversal
  ○ IE 8 is extra…special
● CONTENTdm hosted URL alias
● Timing can be ugly!
Background: How does GA record data?

1. When a page loads, a script on the page requests a 1x1 GIF from GA servers...

2. ...only the request is loaded with a bunch of data about the requesting page (and user, from cookie data...)

(This is a trick that’s been around since the late ‘90s. Eric Peterson’s Web Site Measurement Hacks has some details.)

3. GA servers parse the request and generate reports for your amusement
Background: GA Anatomy 101

Classic snippet (ga.js):

var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
_gaq.push(['_trackPageview']);

(function() { var ga = document.createElement('script'); ga.type = 'text/javascript'; ga.async = true; ga.src = ('https:' == document.location.protocol ? 'https://ssl' : 'http://www') + '.google-analytics.com/ga.js'; var s = document.getElementsByTagName('script')[0]; s.parentNode.insertBefore(ga, s); })();

Universal Analytics snippet (analytics.js):

(function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
(i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
})(window,document,'script','//www.google-analytics.com/analytics.js','ga');
ga('create', 'UA-XXXX-Y', 'auto');
ga('send', 'pageview');
Background: Snippet Anatomy 101

Classic snippet (ga.js):

```javascript
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
_gaq.push(['_trackPageview']);

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```

Universal Analytics snippet (analytics.js):

```javascript
(function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
(i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
}(window,document,'script','//www.google-analytics.com/analytics.js','ga');
ga('create', 'UA-XXXX-Y', 'auto');
ga('send', 'pageview');
```
**Background: Snippet Anatomy 101**

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**Classic snippet (ga.js):**

```javascript
var _gaq = _gaq || [];
_gaq.push(['_setAccount', 'UA-XXXX-Y']);
_gaq.push(['_trackPageview']);

//Library
```

**Universal Analytics:**

```javascript
ga('create', 'UA-XXXX-Y', 'auto');
ga('send', 'pageview');

//Library
```
Background: Snippet Anatomy 101

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```

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```javascript
ga('create', 'UA-XXXX-Y', 'auto');
ga('send', 'pageview');
//Library
```

Actual sending of data to Google
Background: Snippet Anatomy 101

Classic snippet (ga.js):

```javascript
var _gaq = _gaq || [];
_gaq.push([_setAccount, 'UA-XXXX-Y']);
/**** MAGIC ! *****/
_gaq.push(['_trackPageview']);
//Library
```

WHERE MAGIC HAPPENS!

Universal Analytics:

```javascript
ga('create', 'UA-XXXX-Y', 'auto');
/**** MAGIC ! *****/
.ga('send', 'pageview');
//Library
```
What does GA record?

Standard report data includes:

- Page title
- Page URL plus query parameters
- Referral information
- Browser and screen resolution
- User hash
  - Non-personally identifiable (we can hope)
  - To track navigation
- Lots more...
Customizing!

You can also:

- Enhance how your data gets recorded
  - Send extra information
  - Record additional data as it happens
- See what is sent to Google
- Break stuff and fix it

(For best results: users need to have JavaScript and cookies enabled. And they have to work. And the page has to load quickly. And etc etc)
Questions?

Now, or: josh.wilson@ncdcr.gov

Code:
https://github.com/joshwilsonnc/ga_cdm