GravisTech

/ serious about technology */*

* We tackle your technology challenges and bring your innovations to life.

* We specialize in application development, website development, geographic information systems, process automation, and data management.

http://gravistech.com

Drupal

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Greg Bosen (tomhung)

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United States

LinkedIn

Current Role(s):
Owner, Manager, Solutions Architect, Software Develper
Gravis Technologies, Inc.

Bio:
30 Something
Gen X/Y
Father - Husband - Friend
Philosophical Zealot
ADD Hobbyist
Collector of accoutrements & sundries
Web jazzyfier applicationist

History

Member for	8 years 2 days
Documentation	Over 10 edits

Projects

Forena Reports

Forena is a very powerful report writing platform

Most effective for data sources external to Drupal
https://www.drupal.org/project/forena
http://forenasolutions.org

QuickTour
https://www.youtube.com/watch?v=TldVq-fmzAY

Tutorial Channel
https://www.youtube.com/channel/UCGdIMpld5HT8PD_mfjOZLiQ

Easychart – a Highchart Wrapper

- Highcharts are very sexy
- Forena graphing is not very sexy
- D3 and Fusioncharts do not have a robust Drupal module

https://www.drupal.org/project/easychart

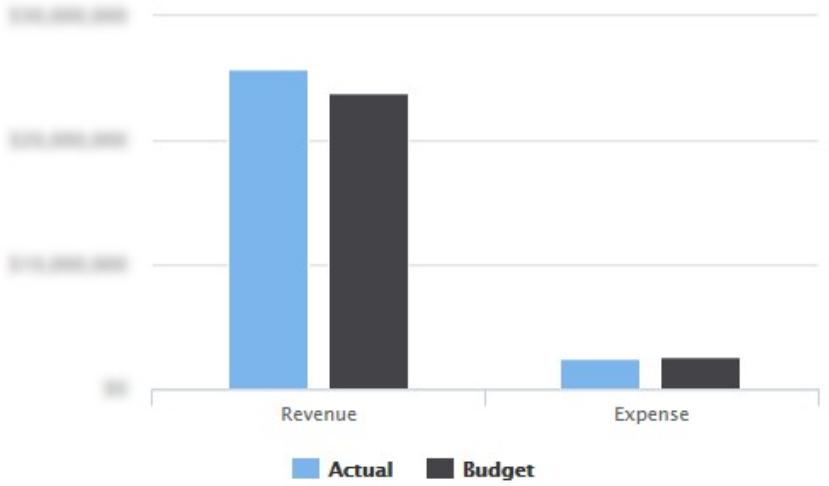
http://easychart.org

Case Background

- Hospital needed a dynamic financial dashboard
- They provided example excel docs with graphs and charts
- They provided SQL for querying data from the financial SQLServer DB
- Charts needed to be Highcharts
  - because they are sexy
- Data tables needed to be downloadable and dynamically adjustable

Variance Report - Surgery - October

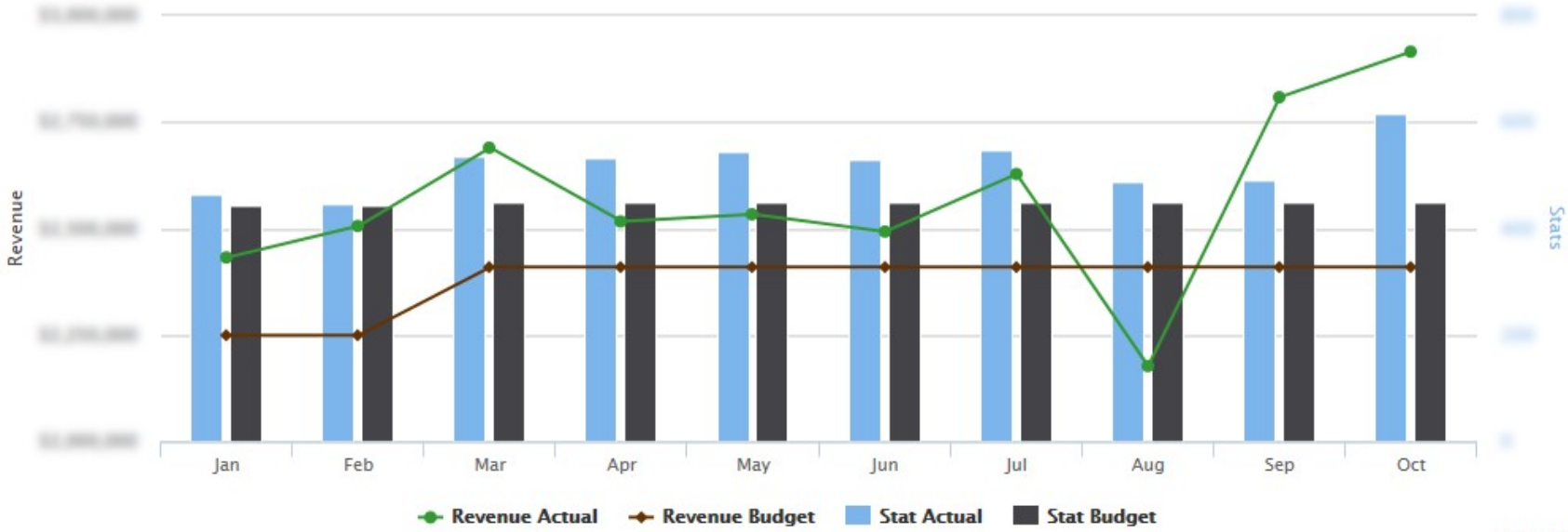
Year-to-Date Revenue & Expense



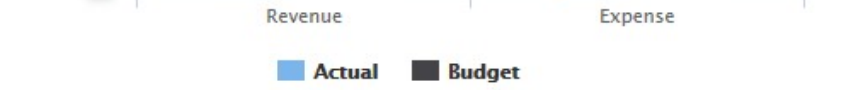
Actuals Snapshot

Surg I/P & O/P Procedures (Stat)	Worked Hours	Paid Hours
[illegible]	[illegible]	[illegible]
Gross Revenue	Expense	Worked FTE Equivalency
[illegible]	[illegible]	[illegible]
Rev Per Surg I/P & O/P Procedures (Stat)	Worked Hours Per Surg I/P & O/P Procedures (Stat)	
[illegible]	[illegible]	

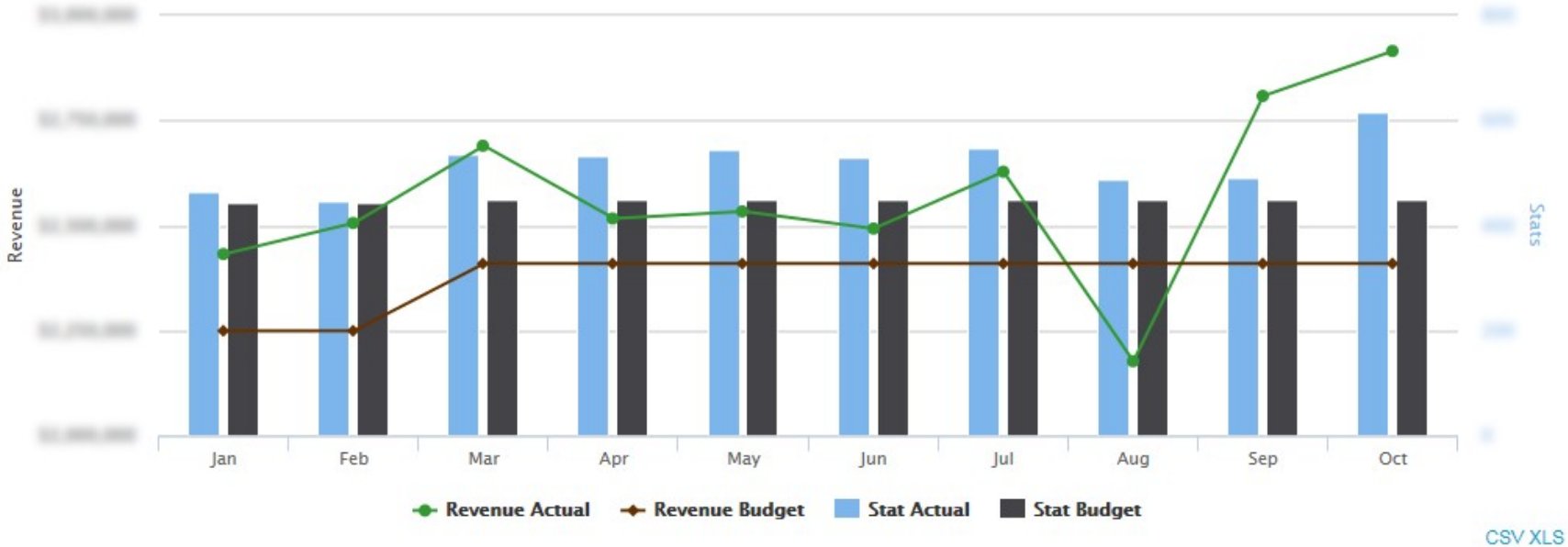
Revenue and Stats Trending



CSV XLS



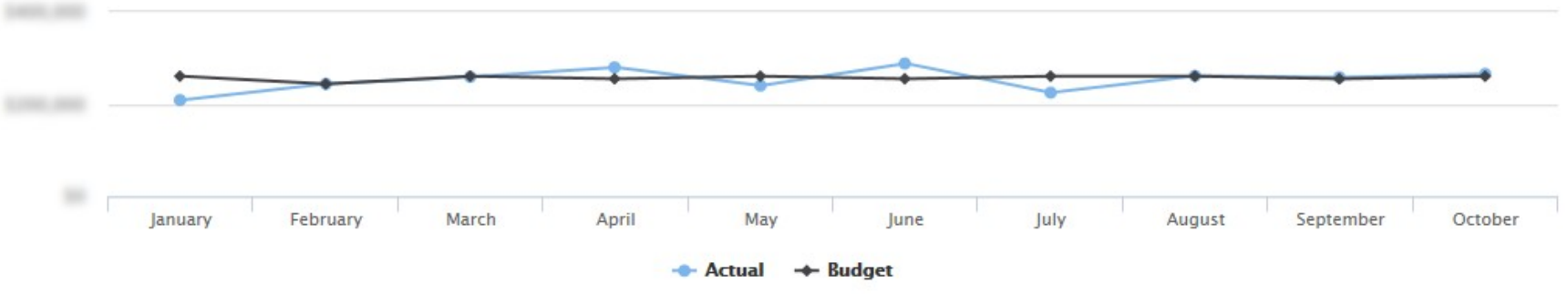
Revenue and Stats Trending



CSV XLS

	January	February	March	April	May	June	July	August	September	October	Total
Revenue Actual											
Revenue Budget											
Stats Actual											
Stats Budget											

Expense Trending Summary



CSV XLS

	January	February	March	April	May	June	July	August	September	October	Total
Expenses Actual											

Database Prep

- Translated provided SQL into stored procedures and pre-processed report data nightly into our normalized format
- ODBC drivers installed and setup on Drupal Linux server for connection to the SQLServer financial database
- Finally, Easychart and Forena were able to communicate with the SQL server directly

Easychart

- Easychart accepts csv (copy / pasta) or a url providing csv
- Created a custom module to query SQLServer and return csv in the Easychart required format
- SQL queries required 3 parameters
  - Patched the Easychart module to allow token replacement in the URL

Chart Type And Interaction

Type: column

Inverted: ☐

ZoomType:

Size And Margins

Width:

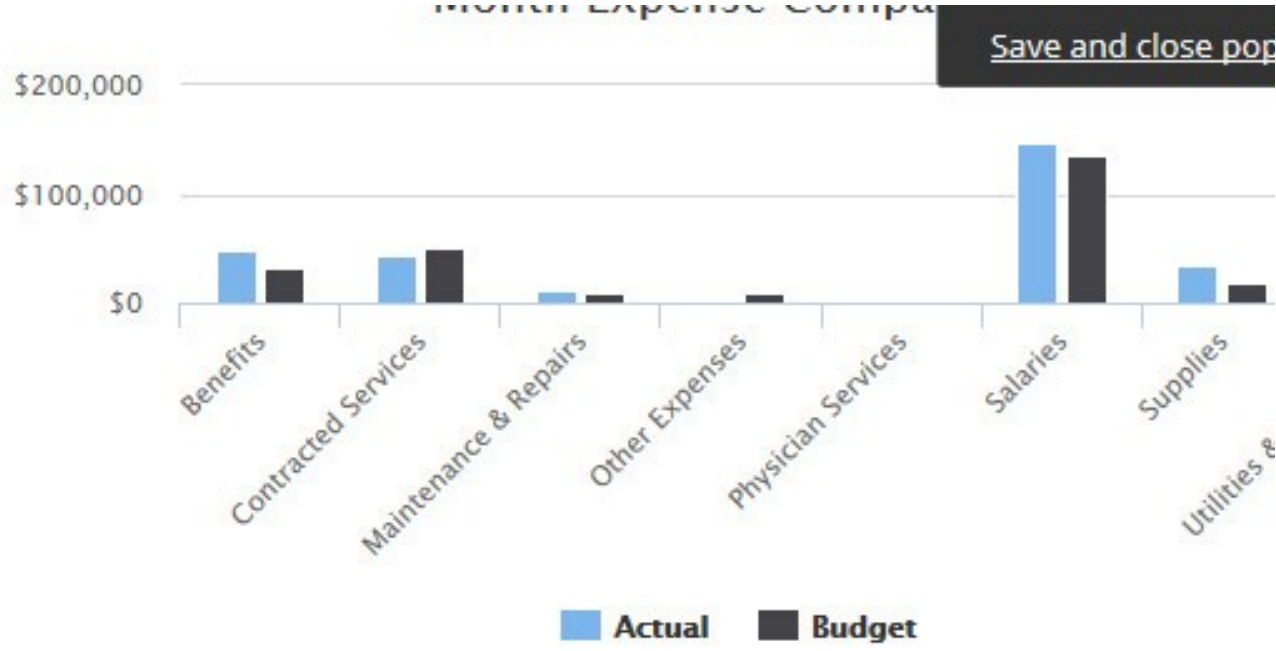
Height: 300

SpacingTop: 10

SpacingRight: 10

SpacingBottc: 15

SpacingLeft: 10



Data-input

CSV input | Data table | Url

pt=[variables:[redacted]_variance_dept]&year=[current-user:[redacted]_variance_year]

Enter a link to a csv file on this server.

Example: **/my-relative-url/my-file.csv** (relative path, preferable)

or http://my-absulute-url/my-file.csv (absolute path)

Panopoly

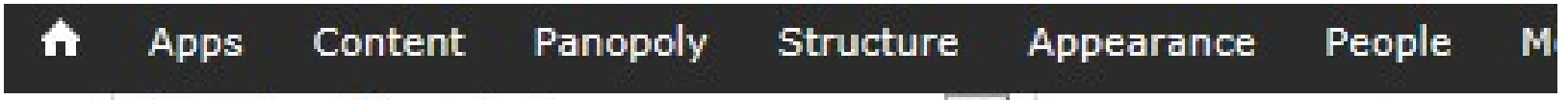
- Integrated chart nodes into Panopoly
- Created custom module to define the menu path and args with tokenization of args

  /variance/%/%

  /variance/surgery/jan
- Passing args → tokens → charts csv url → parameterized SQL
- Returns csv →json → Highchart

Forena

- Setup Forena Data Config
  - PDO other than Drupal
  - Uri: odbc:name_of_odbc_connection
- Create Data Blocks
  - SQL queries with hot sauce
    - Parameters, IF/Then, Drupal Security
- Create Forena Report
  - Tabular report of data from the Data Block
  - Conditional output
  - Xpath syntax and functions
  - NO PHP allowed!!!! argh WHYYYYYYYYY???



Use drupal permissions

Specify how the ACCESS defined for a data block is to be interpreted.

Details

Access callback

user_access

Driver

PDO other than Drupal

Forena data connection type

Connection info

uri *

odbc:[redacted]

User

Forena - Beans

- To display a Forena report in Panopoly a Forena Bean (basically a block) must be created
- Patched Forena Beans submodule to pass tokens to Forena Report using URL parameters
- Next, added the Bean to the Panopoly sections

Label *

Monthly Expense Comparison

Name that displays in the admin interface

Title

The Title of the block. The , , <i> and <b> HTML tags are allowed, all others will be filtered c

Settings

Select a report *

monthly_expense_comparison_actuals

☑ Use menu parameters from url

If checked, parameters from url or in menu path will be used when rendering this report.

URL Parameters

month=[variables [redacted]_variance_month]&dept=[variables:[redacted]_v

Specify parameters as they would appear on the url (e.g. state=wa&county=foo)

☑ Allow tokens in URL Paramerts

View Mode *

Source

```
FROM (
    Select chtCategory as Category
    ,isnull(seriesValue*-1,0) as Actual
    From ChartTable
    Where chtSeries='Actual'
    and theMonth <= :month
    and department = :dept
    and chtName = 'RevenueTrendingSummary'
    and theYear = :year
) AS a
PIVOT
(   SUM(Actual)
    FOR [Category] IN (January, February, March, April, May, June, July, August,
) AS p
UNION ALL
SELECT 'Revenue Budget' AS Title
    ,ISNULL(p.January, 0) January
```

Save Cancel Test Changes

Parameters

month

Body

```
<body>
 <div id="monthly_budget_expsense_comparison_block" class="FrxTable" frx:block=
  <table>
   <thead>
    <tr>
     <th>Month Expense Budgets</th>
     <th frx:if="{parm.month[. &gt;= 1]}" id="forena-2">Jan</th>
     <th frx:if="{parm.month[. &gt;= 2]}" id="forena-3">Feb</th>
     <th frx:if="{parm.month[. &gt;= 3]}" id="forena-4">Mar</th>
     <th frx:if="{parm.month[. &gt;= 4]}" id="forena-5">Apr</th>
     <th frx:if="{parm.month[. &gt;= 5]}" id="forena-6">May</th>
     <th frx:if="{parm.month[. &gt;= 6]}" id="forena-7">Jun</th>
     <th frx:if="{parm.month[. &gt;= 7]}" id="forena-8">Jul</th>
     <th frx:if="{parm.month[. &gt;= 8]}" id="forena-9">Aug</th>
     <th frx:if="{parm.month[. &gt;= 9]}" id="forena-10">Sep</th>
     <th frx:if="{parm.month[. &gt;= 10]}" id="forena-11">Oct</th>
     <th frx:if="{parm.month[. &gt;= 11]}" id="forena-12">Nov</th>
     <th frx:if="{parm.month[. &gt;= 12]}" id="forena-13">Dec</th>
     <th>Total</th>
```

Body

```
</thead>
<tbody>
 <tr id="monthly_actual_expsense_comparison" frx:foreach="*">
  <td>{Category}</td>
  <td frx:if="{parm.month[. &gt;= 1]}" id="forena-15">{January}</td>
  <td frx:if="{parm.month[. &gt;= 2]}" id="forena-16">{February}</td>
  <td frx:if="{parm.month[. &gt;= 3]}" id="forena-17">{March}</td>
  <td frx:if="{parm.month[. &gt;= 4]}" id="forena-18">{April}</td>
  <td frx:if="{parm.month[. &gt;= 5]}" id="forena-19">{May}</td>
  <td frx:if="{parm.month[. &gt;= 6]}" id="forena-20">{June}</td>
  <td frx:if="{parm.month[. &gt;= 7]}" id="forena-21">{July}</td>
```

Body

```
<td style="font-weight:{header};" class="money">
    <span style="color:red" frx:if="{monthActual[contains(text(),'(')]}" id="forena-16">
        {monthActual}
    </span>
    <span frx:if="!{monthActual[contains(text(),'(')]}" id="forena-17">
        {monthActual}
    </span>
</td>
<td style="font-weight:{header};" class="money">
    <span style="color:red" frx:if="{monthBudget[contains(text(),'(')]}" id="forena-18">
        {monthBudget}
    </span>
    <span frx:if="!{monthBudget[contains(text(),'(')]}" id="forena-19">
        {monthBudget}
    </span>
</td>
```

The page style of your report. The {skin}.skinfo file specifies css and js file in your report.

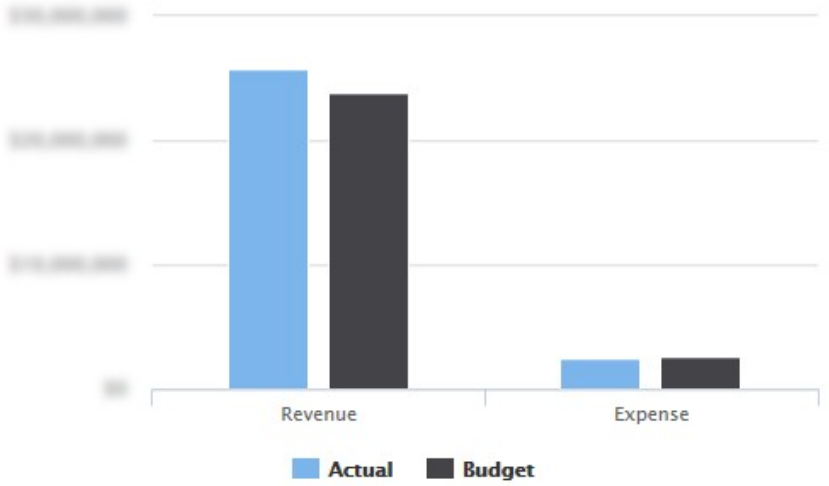
Body

```
        <td><strong>Totals</strong></td>
        <td frx:if="{parm.month[. &gt;= 1]}" id="forena-27"><strong>${=sum(//January)}</strong>
        <td frx:if="{parm.month[. &gt;= 2]}" id="forena-28"><strong>${=sum(//February)}</strong
        <td frx:if="{parm.month[. &gt;= 3]}" id="forena-29"><strong>${=sum(//March)}</strong></
        <td frx:if="{parm.month[. &gt;= 4]}" id="forena-30"><strong>${=sum(//April)}</strong></to
        <td frx:if="{parm.month[. &gt;= 5]}" id="forena-31"><strong>${=sum(//May)}</strong></td
        <td frx:if="{parm.month[. &gt;= 6]}" id="forena-32"><strong>${=sum(//June)}</strong></t
        <td frx:if="{parm.month[. &gt;= 7]}" id="forena-33"><strong>${=sum(//July)}</strong></td
        <td frx:if="{parm.month[. &gt;= 8]}" id="forena-34"><strong>${=sum(//August)}</strong><
        <td frx:if="{parm.month[. &gt;= 9]}" id="forena-35"><strong>${=sum(//September)}</stron
        <td frx:if="{parm.month[. &gt;= 10]}" id="forena-36"><strong>${=sum(//October)}</strong
        <td frx:if="{parm.month[. &gt;= 11]}" id="forena-37"><strong>${=sum(//November)}</stro
        <td frx:if="{parm.month[. &gt;= 12]}" id="forena-38"><strong>${=sum(//December)}</stro
        <td><strong>${=sum(//Total)}</strong></td>
      </tr>
    </tbody>
  </table>
 </div>
</body>
```

```
  </table>
<p frx:if="{=sum(//mTest)&gt;=1}{=sum(//yTest)&gt;=1}" id="forena-38">A red
means that you have a variance equal to or greater than 5% over budget and
therefore these variances will need a detailed explanation.</p>
</div>
</body>
```

Variance Report - Surgery - October

Year-to-Date Revenue & Expense



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Gross Revenue	Expense	Worked FTE Equivalency
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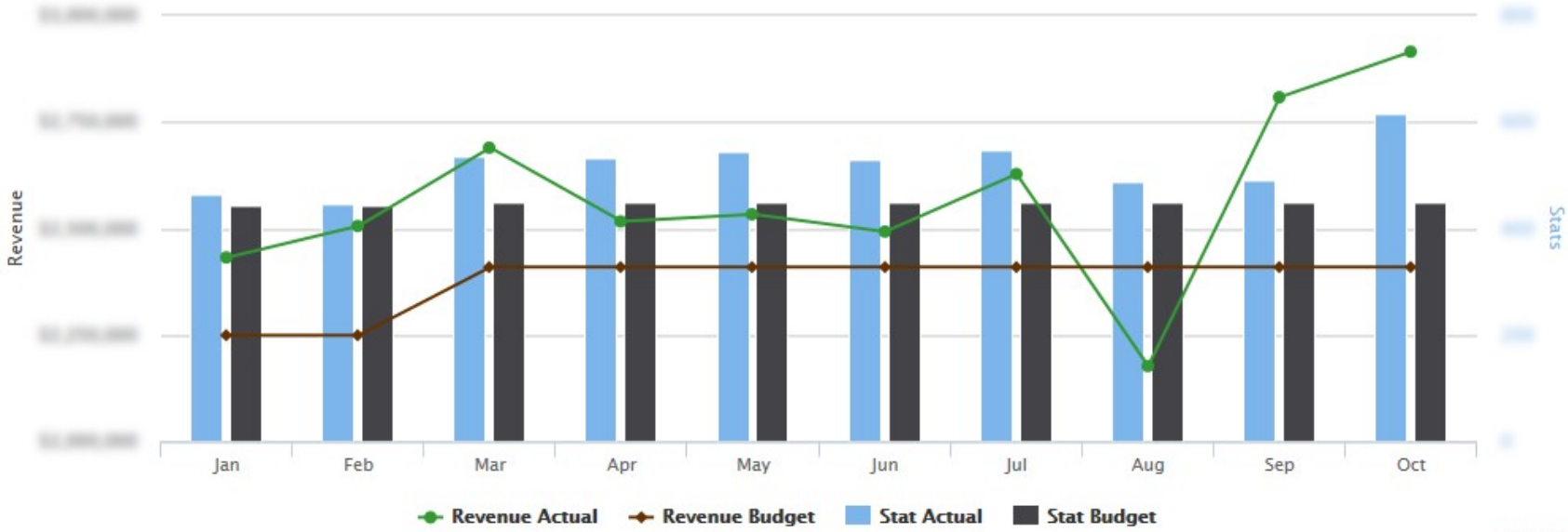

CSV XLS

GravisTech

/* serious about technology */

Greg N. Bosen

Owner of Gravis Technology Inc.

IT Consulting & Application Dev

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