

2015

dPanther FIU

Zhaohui Jennifer Fu
Florida International University, Fujen@fiu.edu

Boyuan Keven Guan
keven1894@gmail.com

Follow this and additional works at: <https://digitalcommons.fiu.edu/gis>

 Part of the [Library and Information Science Commons](#)

Recommended Citation

Fu, Zhaohui Jennifer and Guan, Boyuan Keven, "dPanther FIU" (2015). *GIS Center*. 43.
<https://digitalcommons.fiu.edu/gis/43>

This work is brought to you for free and open access by the GIS Center at FIU Digital Commons. It has been accepted for inclusion in GIS Center by an authorized administrator of FIU Digital Commons. For more information, please contact dcc@fiu.edu.

dPanther FIU

A Platform for Digital Archives and
Projects



Zhaohui Jennifer Fu
Boyuan (Keven) Guan

Outline

1. What is dPanther
2. dPanther key components
3. Technical architecture
4. What dPanther can do
5. Core Development and Content Teams
6. dPanther User Community
7. Applications empowered by dPanther



What is dPanther?

dPanther is a **digital platform and framework** designed under service oriented architecture (**SOA**) with comprehensive **GIS** capabilities integrated.

dPanther Framework



PROJECTS

- Walk Smart Route Planner
- BIKE Route Planner
- USDA mobile application
- Transportation Outreach Planner
- Faculty Residence Map
- Geo-Portal (Geo-spatial Metadata)
- 24 active web GIS applications

- System Migration to Division of IT (2014-2015)
- Expansion to Audio-Visual IT and production
- Digital Scholar Studio + existing GIS labs – IT Space for student users

- Coral Gables Virtual History
- St. Augustine Colonial Heritage
- dPanther.fiu.edu (user community)



FUNCTIONALITY

- Mobile GIS
- Field Data Collection / Manipulation
- Data Visualization Over Map
- Network Analysis and Routing
- Demographic Reporting and Visualization
- Crowd Sourcing Tools

dPanther IT Platform

- 100 TB storage, existing and filled
- adding another 120 TB in 2015-2016 cycle
- a suite of 22 database, web, map, and file image and physical servers
- Library IT and DoIT Team

Digital Library

- SoBEK open source system
- Geo-spatial web services for visualization
- Helix server to support Audio-Visual streaming

About dPanther – Key Components

1

SOBEK

Open source digital collection system
developed by UF

2

ArcGIS Server

Product from ESRI

3

Image Server

A server software designed to process large image format (HD image, tif, JPEG200) on the server side and allow client application to access the image by passing request parameters. Currently using IIPIImage Server

4

Video Steaming Server

Similar to Image Server but designed to handle Video

About dPanther – Key Components

5

Indexing server

Solr / Apache

6

Web Service (WCF 4.0) site

Windows Communication Foundation, from Microsoft.NET framework 4.0, is designed for cross developing platform distributing system

7

Rich client applications

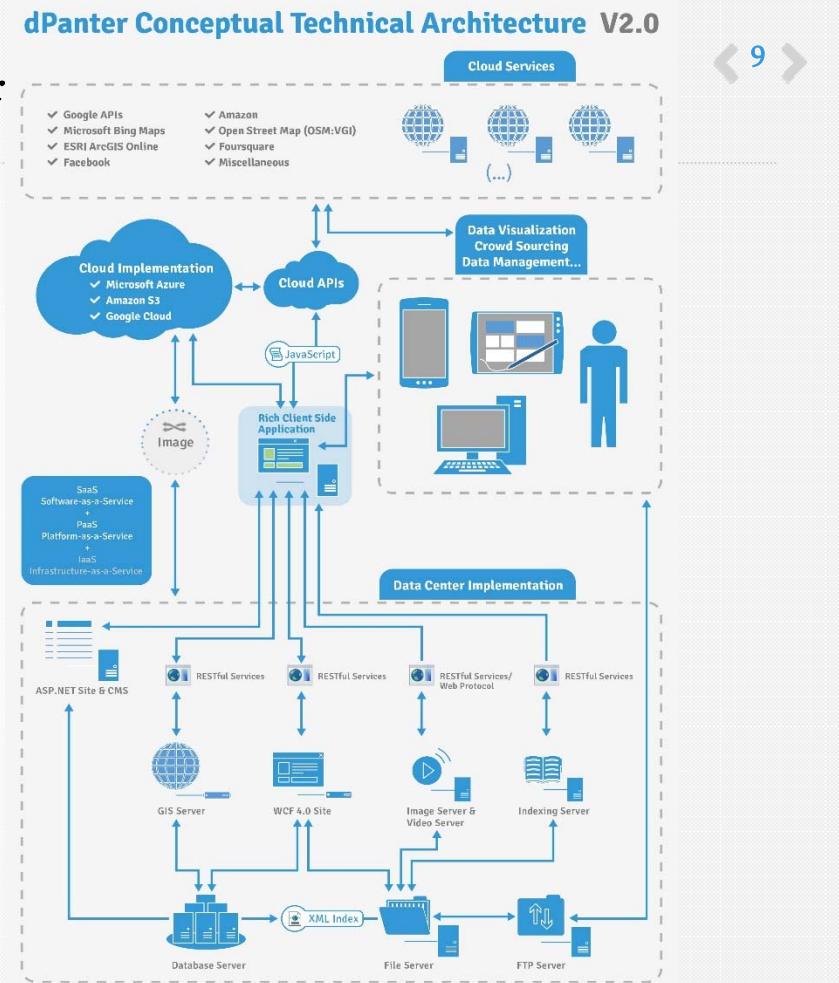
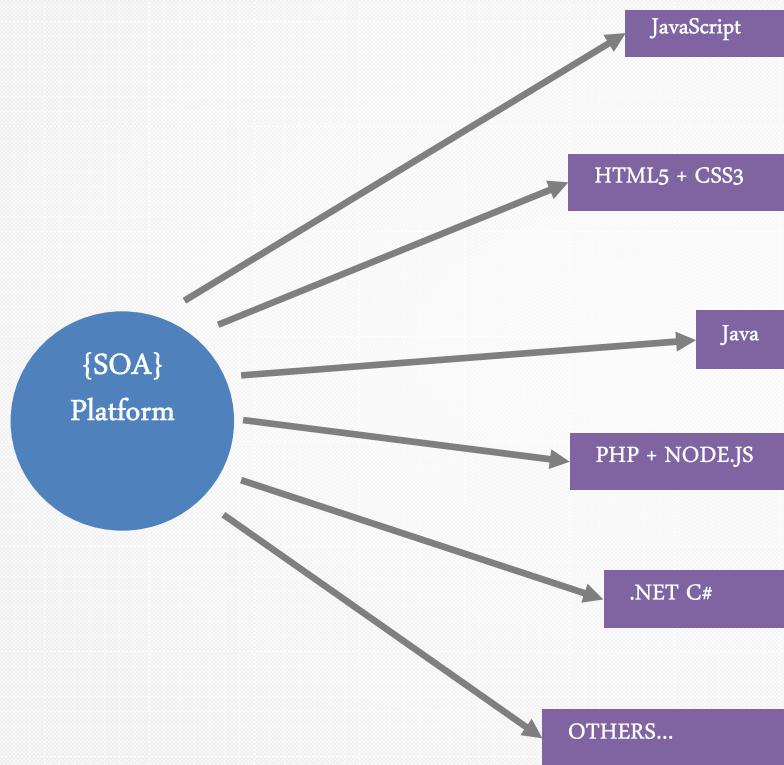
Rich client side logic
AJAX for server side data communication

8

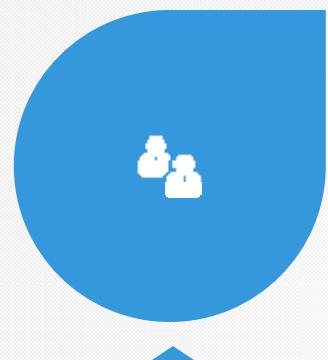
Cloud APIs integration

Google APIs, Facebook APIs, Foursquare APIs, Bing Maps APIs, ArcGIS Online

About dPanther – Conceptual Technical Architecture

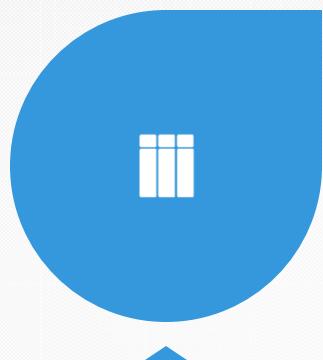


What dPanther Can Do



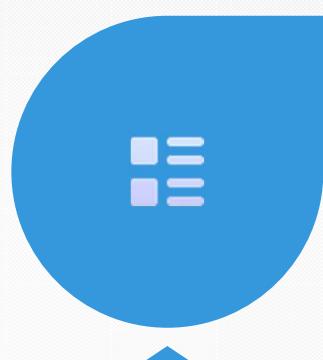
User Management

.NET authentication
LDAP authentication
OAuth authentication
(Facebook, Tweeter, Google+, etc.)



Digital Collection Repository

Physical Storage
Aggregation Group
FTP / Web interface



Metadata Search Engine

Solr Indexing
Faceted Search
Advanced Search
Cross Collection Search
Geo-Search
Time-Bar-Search
Full-text Search

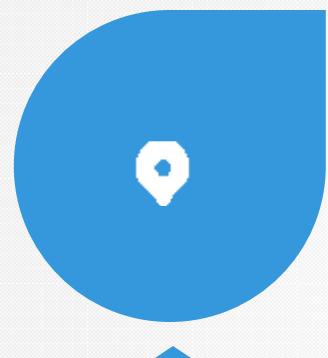


Rich Client Application

Virtual Tour
Collection display
Historical Map display
3D Object

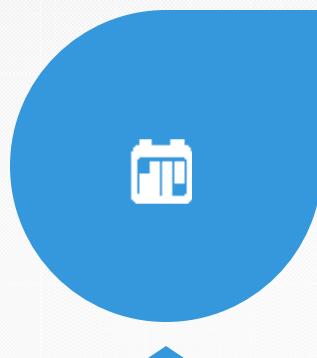
dPanther FIU | Digital Repository System Solution

What dPanther Can Do



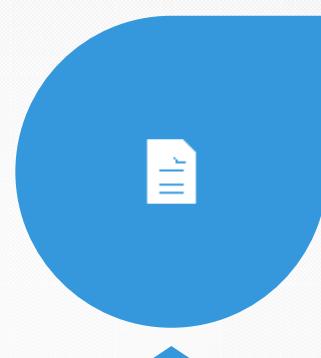
Web GIS

Multiple Base Map Options
Customizable Network Model
Online GIS Analysis
GIS Data visualization



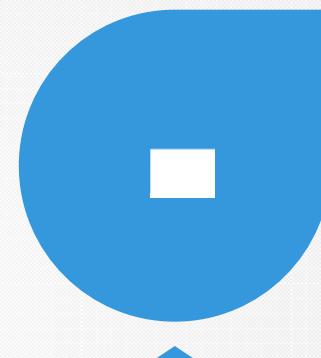
Work Flow Tracking

Data QA / QC
Track User Foot Print
Management Reports
Statistical Reports
...



Data Visualization

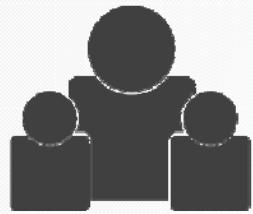
GIS data visualization
Online GIS processing
Data Aggregation
Hot Map
...



Crowd Sourcing

Traditional Data collection (structure)
Usage Data collection (Clicking data)
*Sensors Data Collection (Internet of Things)

dPanther FIU | Digital Repository System Solution



Team of dPanther

FIU GIS Center

FIU DCC

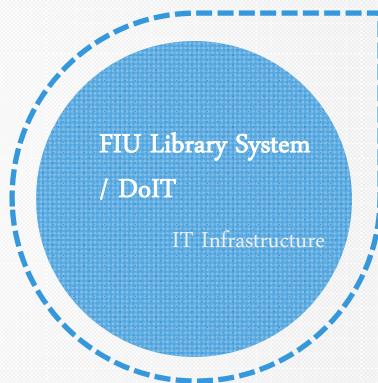
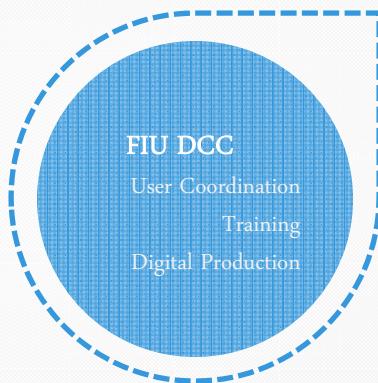
FIU Library Systems

FIU Division of IT

dPanther User Community



Team of dPanther



Work Flow of a dPanther Project

Initialize Project Needs and Scope

By Users

Software requirements analysis, IT infrastructure implementation, UI / UX design

By FIU GIS Center & System

Content entry, testing, documents preparation

By FIU GIS Center & DCC



Detail Work Flow

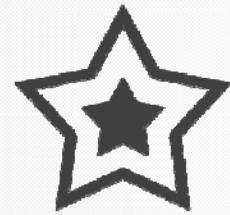
Prepare Data, define metadata format, allocate resource, generate developing plan.

By FIU GIS Center & DCC

Software development and deployment

By FIU GIS Center

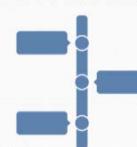
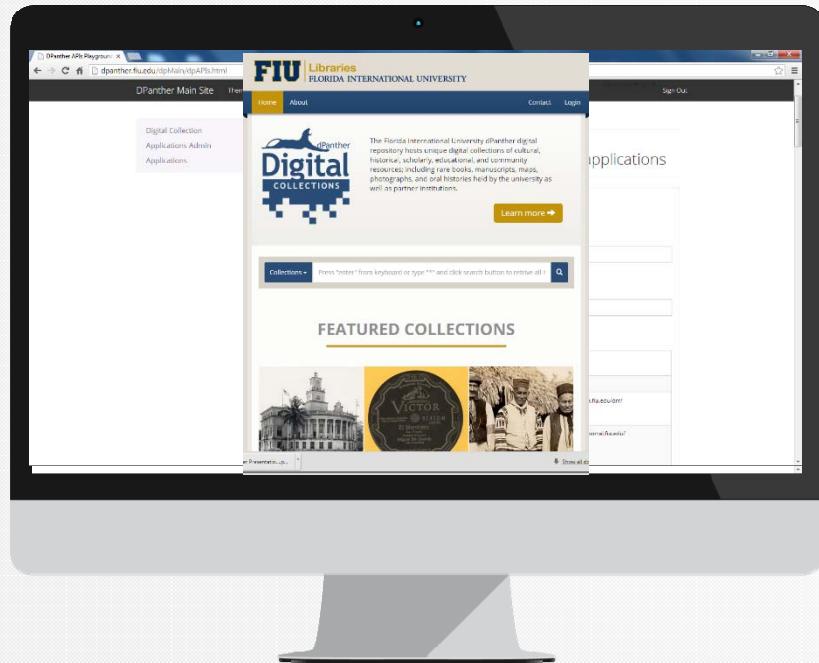
Project deliver and maintenance



Applications empowered by **dPanther**

Application Empowered by dPanther

dPanther Main Application: <http://dpanther.fiu.edu>



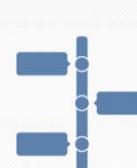
- Digital Collection Repository
- Comprehensive search function
- Online metadata editing
- GIS data management



- Google Map APIs
- Bootstrap
- Solr Indexing

dPanther FIU | Digital Repository System Solution

Application Empowered by dPanther



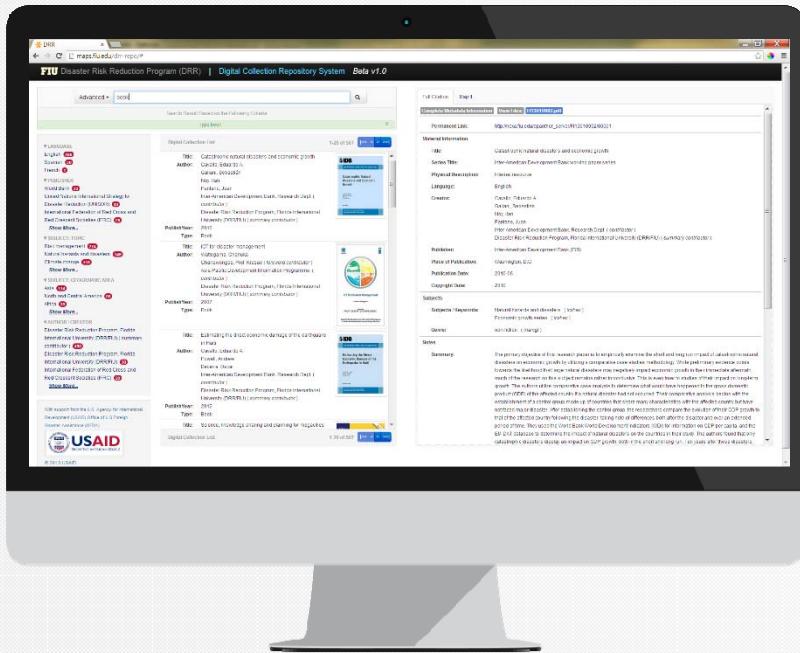
- Geo-tagged digital files
- Historical map overlay
- Temporal sliding bar
- Faceted search



- SOBEK
- Google Map APIs
- Senta EXT JS
- Bootstrap
- IIPIImage Server
- Solr Indexing
- ArcGIS Server

Application Empowered by dPanther

Disaster Risk Reduction



- Digital Collection Repository for DRR
- Comprehensive search

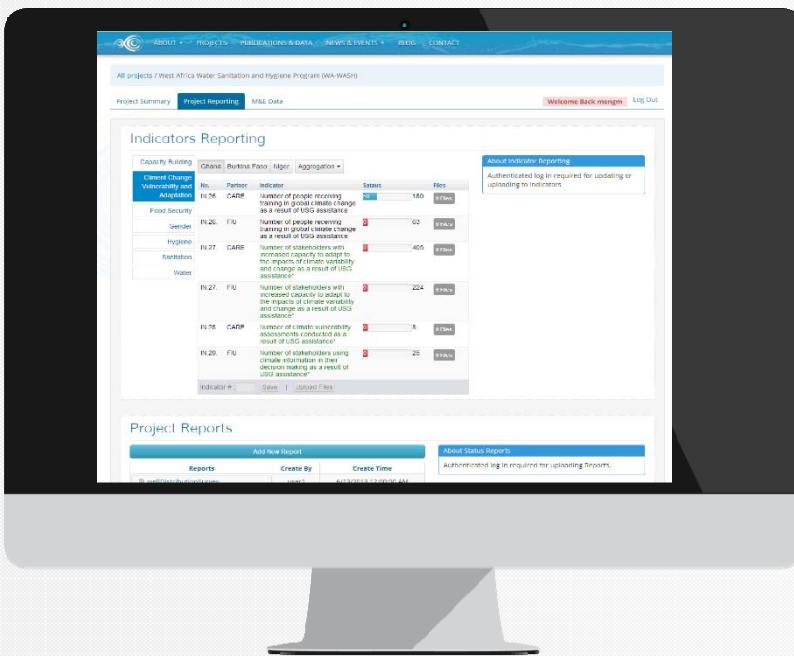


- SOBEK
- Google Map / Earth APIs
- Bootstrap
- IIPIImage Server
- Solr Indexing

dPanther FIU | Digital Repository System Solution

Application Empowered by dPanther

WA-WASH



- CMS
- Management Information system
- Work Flow Tracking
- Survey Data Collection
- Online Reporting
- User Management

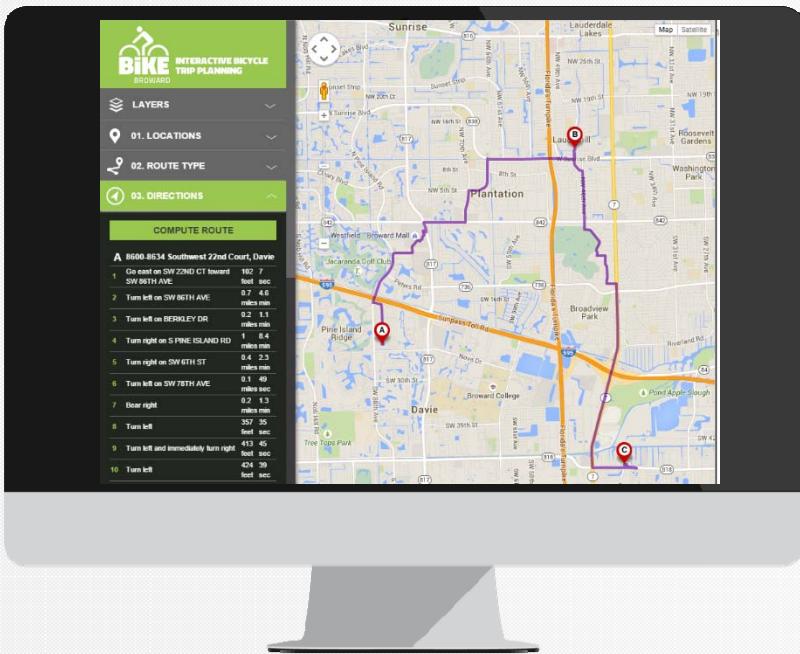


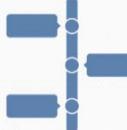
- Microsoft Active Directory (ALDP)
- Google Map APIs
- Sentra EXT JS
- Bootstrap
- JQuery
- Microsoft .NET

dPanther FIU | Digital Repository System Solution

Application Empowered by dPanther

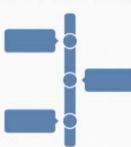
BIKE



- Online Bicycle Route Generation Application
 - KML Export
 - Printable Map
 - Real-time Navigation
 - Customizable Network Model
 - Responsive Design for Mobile device
-
- 
-
- ArcGIS Server
 - ESRI RESTful Services
 - ArcGIS Link
 - Google Map APIs
 - PHP
 - Mootool
 - HTML5 + CSS3
-
- 

Application Empowered by dPanther

WalkSmart



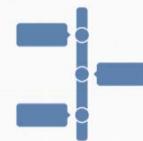
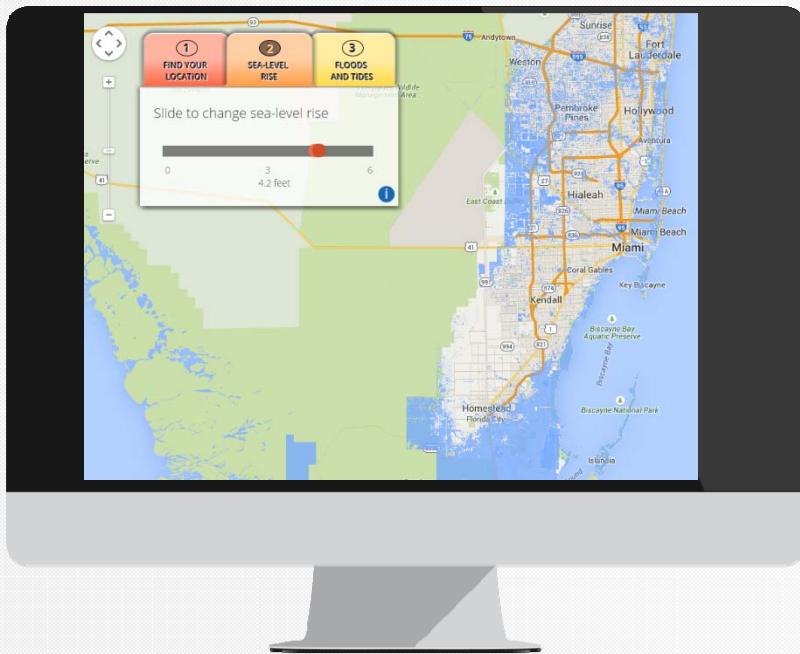
- Online Bicycle Route Generation Application
- KML Export
- Printable Map



- ArcGIS Server
- ESRI RESTful Services
- ArcGIS Link
- Google Map APIs
- JQuery

Application Empowered by dPanther

Sea Level Rise



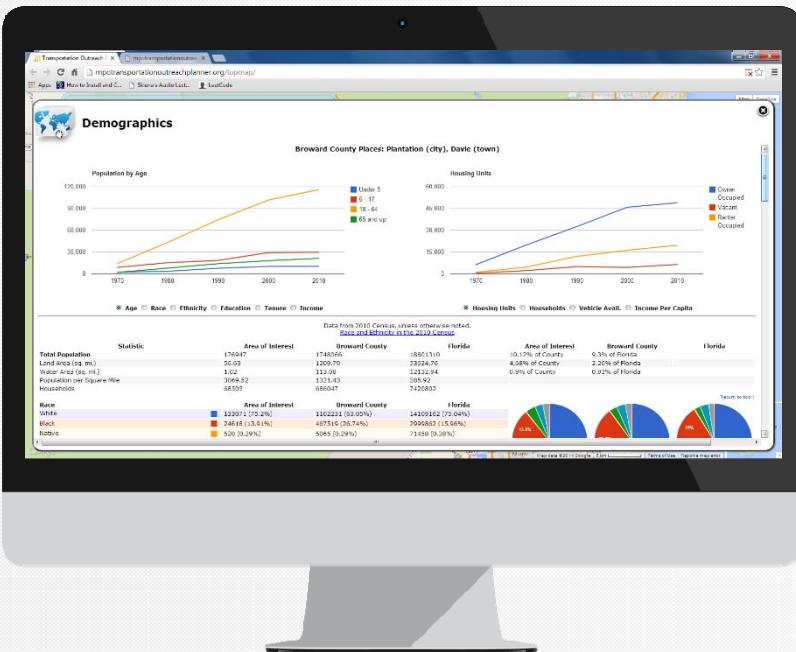
- Sea level rise data visualization
- Web GIS function



- HTML5+CSS3
- Google Map APIs
- ArcGIS Server APIs
- Mootools

Application Empowered by dPanther

Transportation Outreach Planner



- Census Data Visualization
- Online Report Generation

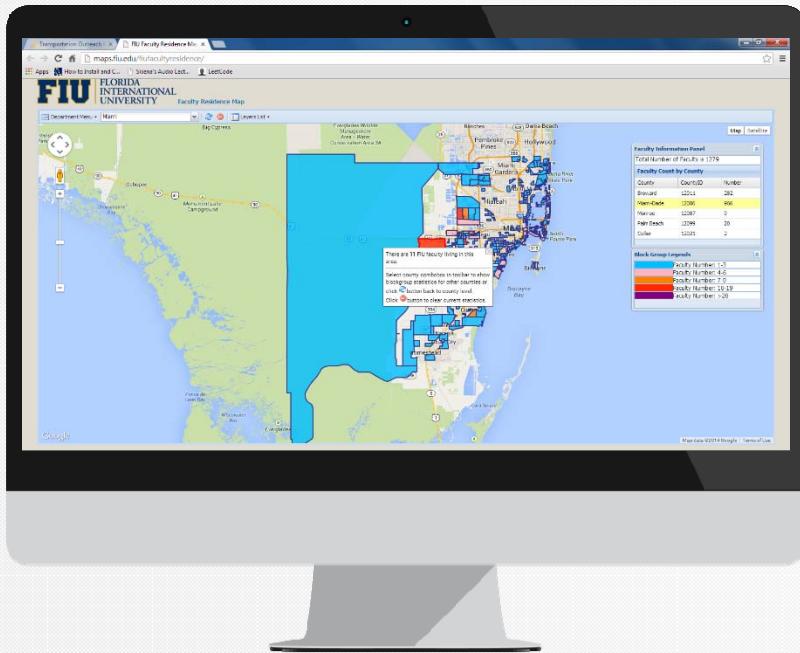


- MySQL + PHP
- Mootool
- Google Visualization

dPanther FIU | Digital Repository System Solution

Application Empowered by dPanther

FIU Faculty Density Map



- Online GIS data visualization
- Online GIS process



- ArcGIS Server
- ESRI RESTful Services
- ArcGIS Link
- Google Map APIs

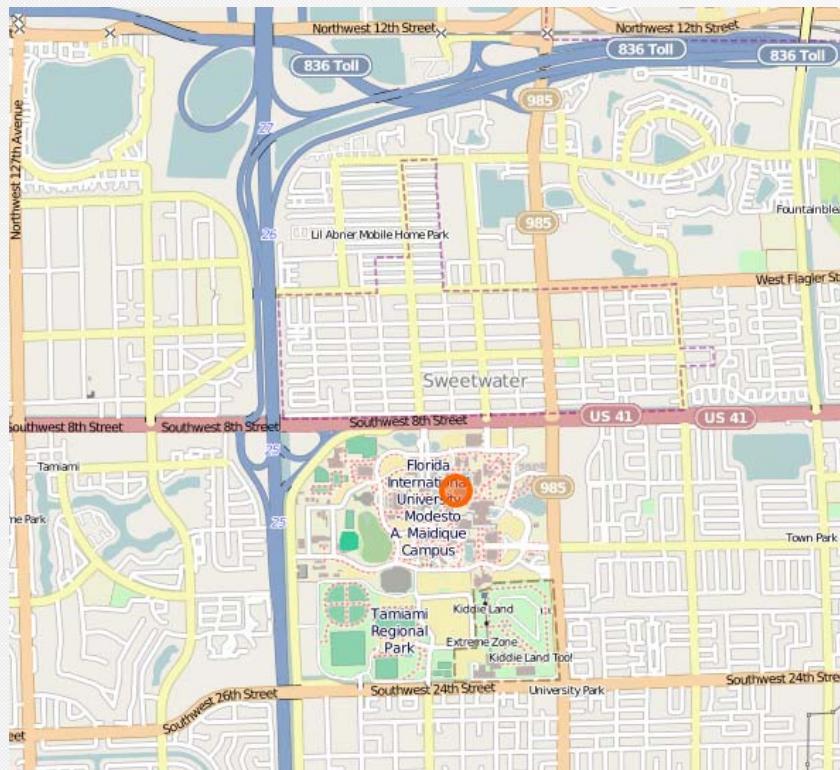
dPanther FIU | Digital Repository System Solution



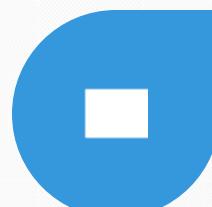
CONTACTINFO

dPanther FIU | Digital Library Collection Repository System Solution

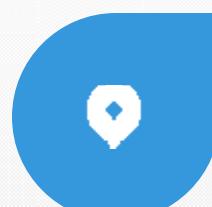
CONTACTINFO



+1 (305) 348 3138



fujen@fiu.edu



Florida International University
11200 Southwest 8th Street
Miami, FL 33174,
United States



THANK
YOU!

