Thinking Big in a Small Library
Implementing Low-Cost Solutions

Madhu Singh
Priddy Library, Universities at Shady Grove, University of Maryland
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Outline

- Who We Are...
- Challenges of a small campus with limited budget
- Assessment of resources and needs
- Opportunity to collaborate, be creative, & build partnership
- Development and implementation of low cost-solutions
  - Course Reserve System
  - Equipment Management System
  - Statistics Application – iPad Data Gathering Tool
- Outcome (benefits)
Who we are...

- Priddy Library
- Universities at Shady Grove (USG)
- University of Maryland (UMD)
- University System of Maryland (USM)
University of Maryland Libraries

McKeldin Library (Main Library)

Architecture Library

Art Library

Engineering & Physical Science Library

Hornbake Library

Michelle Smith Performing Arts Library

Priddy Library (Universities at Shady Grove)

White Memorial Chemistry Librar
Universities at Shady Grove (USG)

Building III at USG

The Priddy Library at USG
University System of Maryland Institutions

- Bowie State University
- Coppin State University
- Frostburg State University
- Salisbury University
- St. Mary's College of Maryland
- Towson University
- University of Baltimore
- University of Maryland Baltimore
- University of Maryland Baltimore County
- University of Maryland, College Park
- University of Maryland Eastern Shore
- University of Maryland University College
USG Partner Institutions

- Bowie State University
- Coppin State University
- Frostburg State University
- Salisbury University
- St. Mary's College of Maryland
- Towson University
- University of Baltimore
- University of Maryland Baltimore
- University of Maryland Baltimore County
- University of Maryland, College Park
- University of Maryland Eastern Shore
- University of Maryland University College
Challenges of a small campus

- Limited Resources
  - Small Library Budget
  - Limited Staffing
- Increased Student Enrollment
- Increased # of People Visiting Library
- Increased Demand for Library Services
  - Borrowing
  - Course Reserve Requests
  - Equipment Loans
  - Library Instructions
Growing Student Enrollment & Budget Constraints

57% Increase in Student Enrollment

Library Budget

Graphics by Nickolas Faulk
google.com
Library Staffing & Hours

Library Staffing

Total Number of Employees

0 4 8 12 16


13%

Number of Hours Library Staffed

Number of Hours

3000 3300 3600 3900 4200 4500 4800


48%
Increase Demand On Library Services

Borrowing Patterns

- Number of items borrowed:
  - 2007: 2000
  - 2008: 4000
  - 2009: 6000
  - 2010: 8000
  - 2011: 10000
  - 2012: 12000
  - 2013: 14000
  - 2014: 16000

- Increase: 384%

Course Reserve Requests

- Number of course reserve requests:
  - 2009: 400
  - 2010: 500
  - 2011: 600
  - 2012: 700
  - 2013: 800
  - 2014: 900

- Increase: 88%

Equipment Borrowing

- Number of equipment borrowed:
  - 2007: 500
  - 2008: 1000
  - 2009: 1500
  - 2010: 2000
  - 2011: 2500
  - 2012: 3000
  - 2013: 3500
  - 2014: 4000

- Increase: 2954%

Turnstile Gate Count

- Number of people:
  - 2007: 10000
  - 2008: 15000
  - 2009: 20000
  - 2010: 25000
  - 2011: 30000
  - 2012: 35000
  - 2013: 40000
  - 2014: 45000

- Increase: 110%
Bottom Line...

Challenges in Providing Seamless Library Services:

- Course Reserve Service
- Access to E-Resources
- Reference Assistance
- Library Instructions
- Interlibrary Loan Service
Why develop a course reserve system?

- Different Course Reserve System used at partner institutions
- Priddy Library staff access to the UMCP Course Reserve System only
- Multiple forms of Course Reserve Requests

Pre-made/out-of-the-box application software was NOT the answer
Manual Course Reserve Request Form

FOR SHADY GROVE LIBRARY

Course Name & Number: BMGT 495 5121
Class Day(s)/Room #: 3216
USM University: UMUC
Number of Students in Class: 10
Received By (Initials of Library Staff Member): ____________

Instructor Name: ________________________________

Contact numbers: (W) ____________________________
(H) Cell: ________________________________
(Email) ________________________________
Semester: Fall 08 ____________________________

Loan Period: 3 HRS Other

List items for reserve with full citation. Reserves cannot be processed without a full citation. Each title of a journal article must be listed individually. Use the back or attach a list if necessary.


2. The World is Flat, A Brief History of the Twenty-First Century, by Thomas Friedman, Picador, NY 2005

Reserve Policies:

1. In accordance with Title 17, U. S. Code, U. S. Copyright Law, photocopied, copyrighted items can be placed on reserve without copyright permission ONLY if they are being used for the first time and have not been used in previous semesters. Repeated use requires copyright permission.

2. Photocopied materials must include a photocopy of the relevant copyright information (e.g., Library Journal © 1997 by Reed Elsevier, Inc.).

3. The Library will take all precautions necessary to keep reserve materials secure and in good condition. However, the Library cannot be held liable for stolen or damaged reserve items.

4. Requests are processed in the order in which they are received, with priority given to materials for the current semester.

5. Faculty-submitted reserve materials must be retrieved no later than two weeks after the end of the semester. Items left beyond the two weeks will be discarded.

Signature of Instructor: ____________________________ Date September 9, 2008
Opportunities
Collaborate, Be Creative & Build Partnership

- Challenges turned into opportunity to develop a collaborative culture and build partnerships
- Discussed challenges, identified collaboration opportunities, and brainstormed solutions
- Collaboration Partners:
  - iSchool
  - Organizational Psychology
  - Communication
Development of Course Reserves System

- Collaboration with MIM grad student
- Database structure and entity relationship developed
- MySQL relational database
- PHP and Java Script languages to develop the front graphical user interface
- User-friendly application
- System designed to send an acknowledgement
- Generates an ID# for query purposes
- Allows prompt response to faculty
Course Reserves System: Entity Relationship Diagram
PRIDDY LIBRARY RESERVES REQUEST

Instructions for Course Reserves Request:

The course reserves request form is only for Universities at Shady Grove (USG) faculty. USG faculty affiliated with BSU, SU, TU, UB, UMB, UMBC, UMCP, UMES, & UMUC can submit course reserves request for physical materials, e.g., books. The course material will be available to students at the Priddy Library circulation desk. Please submit your requests as early as possible to ensure that material needed for course reserves are available to the students on time. Ordering, cataloging material that are not owned, and recalling materials on loan to patrons take a while which causes further delay in processing the reserves requests. We make all attempts to process course reserves requests promptly, but there is a heavy demand in the beginning of the semester, your request will be processed in the order in which it is received. Provide a copy of syllabus/course reading list to Priddy library course reserves staff or email it. If you have any questions or need assistance, please call reserves staff at (301) 738-6223/6226 or email us.

Instructions for E-Reserves Request:

E-Reserves services are available to USG faculty from their home institutions except BSU which does not support E-reserves. To submit E-reserves requests for an article or book chapter, select your institution below and follow the instructions.

SU E-Reserves
TU E-Reserves
UB E-Reserves
UMB HSHSL E-Reserves
UMBC E-Reserves
UMCP E-Reserves
UMES E-Reserves
UMUC E-Reserves
## COURSE RESERVE REQUEST FORM

Return to Main Menu

Please read the **Instructions** before filling out the Priddy Library Reserves Request Form.

PLEASE NOTE: Fields marked in **red** are mandatory

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### Search the Priddy Library catalog for book information:

- **word/s anywhere**: 
- **search**

---

### INSTRUCTOR INFORMATION

- **Last Name**: 
- **First Name**: 
- **Email**: 
- **Phone Number**: 
  - Format: XXXXXXXXXX, XXX-XXX-XXXX
- **USM University**: 
  - Please select one

---

### BOOK REQUEST #1

#### Course Information

- **Semester**: Summer I 2010
- **Course Title**: 
- **Course Number**: 
- **Loan Period**: 
  - 2 hrs
  - 1 day

#### Book Information

- **Title**: 
  - Please do not abbreviate unless your citation is abbreviated
- **Author(s)**: 
  - (Last Name, First Name)
- **ISBN**: 
- **Edition**: 
- **Publisher**
- **Place of Publication**
- **Publication Date**: 
- **Call Number**

#### Additional Information

**How will this item be supplied?**

- I will bring the material to Priddy Library
- Please have library staff pull the material off the shelves

**Notes:**

- Put any information here that may help us find the item, as well as any other pertinent information.

---

### BOOK REQUEST #2

---
# Back-end of the Course Reserve System

## Table

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<thead>
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<th>Req Date</th>
<th>Req #</th>
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## Course Reserve System: Request View Page

| **Professor Information** | Name: 
| Phone: 
| **University:** University of Maryland, Baltimore |
| **Course Information** | **Course:** NURS418, Introduction to Emergency & Trauma  
| **Semester:** Spring 2015 |
| **Book Information** | **ISBN:**  
| **Title:** Manual of critical care nursing: nursing interventions and collaborative management  
| **Author:** Marianne Saunorus Baird, Susan Bethel  
| **Edition:** 6th ed  
| **Publisher:**  
| **Place of Publication:**  
| **Date of Publication:** 2011  
| **Call Number:** RT120.I5 M3644 2011 |
| **Additional Information** | **Loan Period:** 2 hrs  
| **Supply Method:** Purchase Item |
| **Library Information** | **Barcode:** 31430058047723  
| **Order Date:** 02-06-2015  
| **Recall Date:** 00-00-0000  
| **Date Entered:** 02-23-2015  
| **Date Deleted:** 00-00-0000  
| **Professor’s Copy:** N  
| **Syllabi:** N  
| **Comments:** entered 02-23 |
**Course Reserve System: Request Edit Page**

**Book Request # 278369 [02-23-2015]**

Search the Priddy Library catalog for book information: word/s anywhere

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<td>Email</td>
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<tr>
<td>Phone Number (xxx-xxx-xxxx, xxxxxxxxxxx)</td>
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<td>University</td>
<td>University of Maryland, Baltimore County</td>
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<tr>
<td>Course Title</td>
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<table>
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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Straightlaced: how gender's got us all tied up</td>
</tr>
<tr>
<td>Author</td>
<td>Debra Chasnoff</td>
</tr>
<tr>
<td>ISBN</td>
<td></td>
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<tr>
<td>Edition</td>
<td></td>
</tr>
<tr>
<td>Place of Publication</td>
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</tbody>
</table>
RESERVES REQUEST FORM
FOR SHADY GROVE LIBRARY

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Class Day(s), Room #: 3216
USM University: ___ UMUC
Number of Students in Class: 10

Received By (Initials of Library Staff Member): ________________

Instructor Name:

Contact numbers: (W) ____________________________
(H) Cell: ____________________________
(Email) ____________________________
Semester: __Fall 08 __________

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Signature of Instructor: ____________________________ Date September 9, 2008
Course Reserve System
A product of collaboration with MIM Program

- One web interface for all 9 partner institutions
- Customized online course reserve system
- Efficient workflow
- Increased productivity
Why develop an Equipment Management System?

- Paper Agreement Form
- Reservation via email and/or phone
- Dealing with impatient faculty and student was problematic
- Difficulty in ensuring equipment availability when needed
- Efficient service with limited staffing challenging
For example...

The UNIVERSITIES at Shady Grove

PRIDDY LIBRARY

iPad LOAN AGREEMENT

THIS AGREEMENT, entered into this 5th day of November, 2011, is between the Universities at Shady Grove Priddy Library (the “Library”) and Elaine Kim, a patron/student of the Library.

WHEREAS the Library is the owner of certain equipment, described in detail on the Equipment Loan Form, and made a part hereof;

WHEREAS the Library permits a patron/student to use Library-owned equipment;

WHEREAS the Library chooses to make available equipment to a patron/student;

WHEREAS the Library wishes to protect the value of equipment checked out to a patron/student;

NOW, THEREFORE, in consideration of the mutual promises and conditions set forth herein, the parties agree as follows:

The Library shall permit the patron/student to check out the iPad until the Library requests the iPad be returned. The patron/student must return the iPad, or the patron/student’s Library service is severed, whichever comes first. This time period shall hereinafter be referred to as the “Loan Period”.

The patron/student is allowed to borrow the iPad for up to 7 days, the designated Loan Period.

A fine of $10.00 per day is charged if the iPad is overdue.

A fine of $40.00 is charged if the iPad is case is damaged or lost.

A fine of $30.00 is charged if the iPad charger and cable is lost.

The lost iPad fine and replacement cost is $550.00.

NOTE: Unless all items - case, charger, & cable are returned with the iPad, the lost iPad fine of $550.00 will be charged.

The patron/student shall not upgrade or downgrade the capabilities of the equipment. The patron/student shall return the equipment to the Priddy Library in the same condition in which it was received. If the patron/student fails to return the equipment on time, he/she may be barred from borrowing equipment in the future.

In the event the Library-owned equipment is damaged due to negligence during the Loan Period, the patron/student shall be responsible for the replacement value and/or repair costs associated with the damage. The patron/student must report all damage(s) or malfunctions to the Library staff when returning the iPad.

In the event the Priddy Library-owned equipment is stolen during the Loan Period, the patron/student shall obtain a police report and turn it in to the Library.

The validity, interpretation and effect of the Agreement shall be governed by the laws of the State of Maryland.

This Agreement contains the entire understanding between the parties. All prior agreements and understandings, oral or otherwise, between the parties are superseded by this Agreement. No modification or amendment of this Agreement shall be effective unless the same shall be in writing, duly executed by all parties hereto.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed and effective on the date above-written.

UNIVERSITIES AT SHADY GROVE PRIDDY LIBRARY iPad INFORMATION

<table>
<thead>
<tr>
<th>iPad Equipment Check List</th>
<th>Out</th>
<th>In</th>
</tr>
</thead>
<tbody>
<tr>
<td>iPad # 27</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>iPad Charger # 2.1 w/USB</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Library ID # 221011033422998
Loan Receipt Attached ✓
Patron/Student’s Signature: [Signature]
Staff Member’s Name: [Signature]
Received: ✓ Staff Initials: CB Date: 11/14 Time: 3:30
How did we develop the Equipment Management System?

- Professional Development Pays Off - Staff member took advanced courses
- Brainstormed metadata fields needed in the dataset
- Online Equipment Reservation Form
- Staff mediated equipment booking - modify or delete reservation based on priority
- Patrons notification feature - upon equipment reservation
- Standalone product first, and then synced with ALEPH circulation
- Collaboration with OIT to host the EMS on Server
- Beta testing
Equipment Management System
E-R Diagram

- User_Types
  - Type_ID INT
  - Description VARCHAR(45)

- Login
  - ID INT
  - username VARCHAR(45)
  - password VARCHAR(45)
  - Users_ID INT

- Programs_Department
  - Programs_Department_ID INT
  - Department_Name VARCHAR(45)

- Users
  - Users_ID INT
  - First_Name VARCHAR(45)
  - Last_Name VARCHAR(45)
  - Phone_Number VARCHAR(10)
  - Email VARCHAR(45)
  - Barcode_ID VARCHAR(45)

- Institutions
  - Institutions_ID INT
  - Name VARCHAR(45)

- Request
  - Request_ID INT
  - No_of_items TINYINT
  - Request_Date DATE
  - Users_ID INT
  - Item_Type_ID INT

- Item_Type
  - Item_Type_ID INT
  - Description VARCHAR(45)

- Status
  - Status_ID INT
  - Description VARCHAR(45)
  - Serial_number VARCHAR(45)
  - Barcode VARCHAR(45)
  - Item_Type_ID INT
  - Status_ID INT

- Items
  - Items_ID INT
  - Description VARCHAR(45)

- Loans
  - Loans_ID INT
  - Loan_Date DATE
  - Return_Date DATE
  - Due_Date DATE
  - Request_accept_date DATE
  - Request_ID INT
  - Items_ID INT
  - Users_ID INT

Indexes
## Equipment Request Form

**Item Type:** iPad

**Patron Barcode:** Barcode Number

**First Name:**

**Last Name:**

**Email:** Enter a valid email address

**Phone Number:** Enter 10 digit phone number

**User Type:** Faculty

**Institution:** --Choose One--

**Date needed:** 03/06/2015

**No. Needed:** 1

- Students can request only one iPad at a time
- Faculty requests of multiple iPads should be made at least one week in advance

I agree to the equipment loan terms and conditions

Submit Request
Equipment Reservation System: For Staff Use

EQUIPMENT MANAGEMENT SYSTEM

SYSTEM LOGIN PAGE

LoginID: XXXXXXXXXXXXXXXXXXXX

Password: ..........................

Submit
### Equipment Management System:

#### View Reservations

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Barcode</th>
<th>Email</th>
<th>Phone</th>
<th>User Type</th>
<th>Institutions</th>
<th>Request Date</th>
<th>iPad/Laptop Requested</th>
<th>Action</th>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Undergrad</td>
<td>UMCP</td>
<td>2015-03-04</td>
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<td>Other</td>
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### Details: View Equipment Reservation & Loan Status

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<th>Barcode</th>
<th>Loan Date</th>
<th>Return Date</th>
<th>Due Date</th>
<th>Request Date</th>
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<tbody>
<tr>
<td>iPad 2</td>
<td>31430050666223</td>
<td>2014-12-13</td>
<td>2014-12-20</td>
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## Edit the Ipad Request Information

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<td><strong>First Name:</strong></td>
<td>Anna</td>
</tr>
<tr>
<td><strong>Last Name:</strong></td>
<td>Podgornyak</td>
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<tr>
<td><strong>Email:</strong></td>
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### Equipment Availability: Staff View

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<th>Last Return</th>
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<td>2015-03-04</td>
<td>2015-03-11</td>
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<tr>
<td>31430050666090</td>
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<td>2015-01-26</td>
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<tr>
<td>31430050663865</td>
<td>laptop#1</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>31430050663899</td>
<td>laptop#2</td>
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<td>-</td>
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<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Who is borrowing equipment?

![Graph showing results by user type]

- Staff: 24
- Grad: 11
- Undergrad: 277
- Faculty: 25
- Other: 89

The graph indicates that the highest number of borrowings are from Undergraduates, followed by Other users.
Equipment Management System: A Product of Staff Initiative

- Online equipment reservation form
- View equipment availability in real time
- Increased demand for equipment
- Use of equipment integrated into curriculum
- Expedited work flow
- Staff productivity Increased
Why develop a solution for data collection?

Why develop a Statistics Solution?

- Manual data collection
- Ineffective workflow
- Data gathering time consuming
- Challenges of developing live reports
- Delayed decision making process
# Tedious Data Entry Process...

## Daily Circulation Statistics (MON - SUN)

<table>
<thead>
<tr>
<th>Time</th>
<th>Patrons in the Library (Include Group Study RM &amp; Exclude Computer Usage)</th>
<th>Computer Usage</th>
<th># of Group Study Rooms Used</th>
<th>Reference Questions Walk in</th>
<th>Phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-10 am</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-11 am</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-12 am</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12-1 pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1-2 pm</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2-3 pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-4 pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4-5 pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5-6 pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6-7 pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7-8 pm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8-9 pm</td>
<td></td>
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<tr>
<td>9-10 pm</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10-11 pm</td>
<td></td>
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</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Daily Equipment Usage

- **3M Gate Count**: 5201018
- **One-on-One tutorials**: [Details]
- **Lib. Inst. by SG Lib**: [Details]
- **Lib. Inst. by USM**: [Details]

## Headphone Usage

- **Name**: [Details]
<table>
<thead>
<tr>
<th>Hours</th>
<th>Patrons in the Library</th>
<th>Computer Usage</th>
<th>Total (Patrons in the Library)</th>
<th># of Group Study Rooms Used</th>
<th>Reference Questions walk in</th>
<th>phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-9 am</td>
<td>137</td>
<td>99</td>
<td>236</td>
<td>33</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>9 - 10am</td>
<td>327</td>
<td>192</td>
<td>519</td>
<td>78</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>10 - 11am</td>
<td>493</td>
<td>196</td>
<td>689</td>
<td>114</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>11 - 12pm</td>
<td>545</td>
<td>212</td>
<td>757</td>
<td>122</td>
<td>11</td>
<td>5</td>
</tr>
<tr>
<td>12 - 1pm</td>
<td>674</td>
<td>289</td>
<td>963</td>
<td>122</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>1 - 2pm</td>
<td>961</td>
<td>404</td>
<td>1365</td>
<td>149</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>2 - 3pm</td>
<td>921</td>
<td>380</td>
<td>1301</td>
<td>152</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>3 - 4pm</td>
<td>1044</td>
<td>407</td>
<td>1451</td>
<td>166</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>4 - 5pm</td>
<td>1079</td>
<td>396</td>
<td>1475</td>
<td>163</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>5 - 6pm</td>
<td>1129</td>
<td>377</td>
<td>1506</td>
<td>156</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>6 - 7pm</td>
<td>954</td>
<td>336</td>
<td>1290</td>
<td>150</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>7 - 8pm</td>
<td>843</td>
<td>292</td>
<td>1135</td>
<td>144</td>
<td>6</td>
<td>0</td>
</tr>
<tr>
<td>8 - 9pm</td>
<td>686</td>
<td>237</td>
<td>923</td>
<td>89</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>9 - 10pm</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Hours</th>
<th>Patrons in the Library</th>
<th>Computer Usage</th>
<th>Total (Patrons in the Library)</th>
<th># of Group Study Rooms Used</th>
<th>Reference Questions walk in</th>
<th>phone</th>
</tr>
</thead>
<tbody>
<tr>
<td>9 - 10am</td>
<td>50</td>
<td>11</td>
<td>61</td>
<td>26</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>10 - 11am</td>
<td>0</td>
<td>21</td>
<td>21</td>
<td>16</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>11 - 12pm</td>
<td>6</td>
<td>30</td>
<td>36</td>
<td>22</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>12 - 1pm</td>
<td>89</td>
<td>51</td>
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<td>32</td>
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<td>0</td>
</tr>
<tr>
<td>1 - 2pm</td>
<td>229</td>
<td>63</td>
<td>292</td>
<td>32</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>2 - 3pm</td>
<td>254</td>
<td>85</td>
<td>339</td>
<td>37</td>
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<td>0</td>
</tr>
<tr>
<td>3 - 4pm</td>
<td>254</td>
<td>77</td>
<td>331</td>
<td>29</td>
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<td>1</td>
</tr>
<tr>
<td>4 - 5pm</td>
<td>217</td>
<td>64</td>
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</tr>
<tr>
<td>5 - 6pm</td>
<td>203</td>
<td>52</td>
<td>255</td>
<td>29</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>6 - 7pm</td>
<td>92</td>
<td>29</td>
<td>121</td>
<td>13</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>7 - 8pm</td>
<td>87</td>
<td>33</td>
<td>120</td>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>8 - 9pm</td>
<td>61</td>
<td>21</td>
<td>82</td>
<td>9</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9 - 10pm</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
How the Statistics Solution was developed?

- Brainstorming led to ideas for designing the statistics application
- Collaboration with a graduate assistant in developing the metadata fields and E-R-D
- iPad based statistics application for data collection
Statistics Solution
An iPad Based Data Collection Tool!

Select the task you want to perform

Enter Records
- Enter Daily Data
- Enter Monthly Data

View/Edit Records
- View Records in Table
- Generate Graphs
<table>
<thead>
<tr>
<th>Time Period</th>
<th>General Area Users</th>
<th>Computer Usage</th>
<th>Number of Group Study Rooms</th>
<th>Group Study Room Users</th>
<th>Room 1200H Quiet Study Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>08:00 am-09:00 am</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>09:00 am-10:00 am</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>10:00 am-11:00 am</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>11:00 am-12:00 pm</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>12:00 pm-01:00 pm</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>01:00 pm-02:00 pm</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>02:00 pm-03:00 pm</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>03:00 pm-04:00 pm</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>04:00 pm-05:00 pm</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
Select the month to enter the data

The following data has been submitted successfully for October 2013!

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Count Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headphones Usage</td>
<td>231</td>
</tr>
<tr>
<td>Laptop and VGA Cables Usage</td>
<td>373</td>
</tr>
<tr>
<td>iPad Usage</td>
<td>125</td>
</tr>
<tr>
<td>Number of Materials Previewed</td>
<td>17</td>
</tr>
<tr>
<td>Number of Reshelfed Items Not on Loan</td>
<td>210</td>
</tr>
<tr>
<td>Number of Hours Library is Staffed</td>
<td>494</td>
</tr>
<tr>
<td>Number of General Loans</td>
<td>1767</td>
</tr>
<tr>
<td>Number of Reserve Loans</td>
<td>574</td>
</tr>
<tr>
<td>Number of Holds</td>
<td>312</td>
</tr>
<tr>
<td>Number of Materials Transferred</td>
<td>385</td>
</tr>
<tr>
<td>Number of Materials Returned</td>
<td>2097</td>
</tr>
<tr>
<td>Number of Person Passing Turnstile</td>
<td>39918</td>
</tr>
<tr>
<td>Library Instructions by SG Librarians</td>
<td>17</td>
</tr>
</tbody>
</table>
Select the type of view you want to generate:

- View by Date
- View between Dates
- View by Month
- View by Year

Select the date to view the data:

From: July 1, 2011
To: June 30, 2012

View the data for date between July 1, 2011 and June 30, 2012!

<table>
<thead>
<tr>
<th>Time</th>
<th>Total Number of Patrons</th>
<th>General Area Users</th>
<th>Computer Usage</th>
<th>Number of Group Study Rooms</th>
<th>Group Study Room Users</th>
<th>Room 1200H Quiet Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>06:00 am-09:00 am</td>
<td>3956</td>
<td>2471</td>
<td>1446</td>
<td>379</td>
<td>0</td>
<td>39</td>
</tr>
<tr>
<td>09:00 am-10:00 am</td>
<td>8006</td>
<td>5210</td>
<td>2668</td>
<td>831</td>
<td>4</td>
<td>124</td>
</tr>
<tr>
<td>10:00 am-11:00 am</td>
<td>12567</td>
<td>8482</td>
<td>3874</td>
<td>1283</td>
<td>8</td>
<td>203</td>
</tr>
<tr>
<td>11:00 am-12:00 pm</td>
<td>16118</td>
<td>11234</td>
<td>4566</td>
<td>1496</td>
<td>16</td>
<td>302</td>
</tr>
<tr>
<td>12:00 pm-01:00 pm</td>
<td>21003</td>
<td>14833</td>
<td>5754</td>
<td>1869</td>
<td>18</td>
<td>398</td>
</tr>
<tr>
<td>01:00 pm-02:00 pm</td>
<td>23928</td>
<td>17332</td>
<td>6110</td>
<td>2073</td>
<td>16</td>
<td>470</td>
</tr>
<tr>
<td>02:00 pm-03:00 pm</td>
<td>25769</td>
<td>18868</td>
<td>6381</td>
<td>2195</td>
<td>9</td>
<td>511</td>
</tr>
<tr>
<td>03:00 pm-04:00 pm</td>
<td>27102</td>
<td>19747</td>
<td>6717</td>
<td>2188</td>
<td>12</td>
<td>626</td>
</tr>
<tr>
<td>04:00 pm-05:00 pm</td>
<td>28394</td>
<td>20614</td>
<td>7151</td>
<td>2248</td>
<td>9</td>
<td>620</td>
</tr>
<tr>
<td>05:00 pm-06:00 pm</td>
<td>25338</td>
<td>18595</td>
<td>6185</td>
<td>1945</td>
<td>0</td>
<td>558</td>
</tr>
<tr>
<td>06:00 pm-07:00 pm</td>
<td>22893</td>
<td>16823</td>
<td>5583</td>
<td>1817</td>
<td>0</td>
<td>487</td>
</tr>
<tr>
<td>07:00 pm-08:00 pm</td>
<td>18586</td>
<td>13746</td>
<td>4443</td>
<td>1528</td>
<td>0</td>
<td>397</td>
</tr>
<tr>
<td>08:00 pm-09:00 pm</td>
<td>16020</td>
<td>11812</td>
<td>3879</td>
<td>1371</td>
<td>0</td>
<td>329</td>
</tr>
<tr>
<td>09:00 pm-10:00 pm</td>
<td>11170</td>
<td>8195</td>
<td>2730</td>
<td>1008</td>
<td>0</td>
<td>245</td>
</tr>
</tbody>
</table>
View daily/monthly data over a year

Select the year to view the data

Parameter:
- General Area Users

Year: 2014

Submit

Bar chart showing data for each month from January to December for the year 2014.
General Area Users in September 2014
No Manual Data Collection!
<table>
<thead>
<tr>
<th>Mon-Fri Stats (October 2009)</th>
<th>Sat-Sun Stats (October 2009)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hours</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Patrons in the Library</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Computer Usage</strong></td>
</tr>
<tr>
<td></td>
<td><strong>Total (Patrons in Library)</strong></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>8-9 am</td>
<td>137</td>
</tr>
<tr>
<td>9-10 am</td>
<td>327</td>
</tr>
<tr>
<td>10-11 am</td>
<td>493</td>
</tr>
<tr>
<td>11-12 pm</td>
<td>545</td>
</tr>
<tr>
<td>12-1 pm</td>
<td>674</td>
</tr>
<tr>
<td>1-2 pm</td>
<td>961</td>
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<tr>
<td>2-3 pm</td>
<td>921</td>
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<td>3-4 pm</td>
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<td>4-5 pm</td>
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<td>1133</td>
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<tr>
<td>6-7 pm</td>
<td>954</td>
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<tr>
<td>7-8 pm</td>
<td>843</td>
</tr>
<tr>
<td>8-9 pm</td>
<td>686</td>
</tr>
</tbody>
</table>

Good Bye Computing Process...
## Evidence-Based Decision Making: Library Hours Extend

<table>
<thead>
<tr>
<th>Library Hours Before 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon – Thursday</td>
</tr>
<tr>
<td>9:00 am - 9:00 pm</td>
</tr>
<tr>
<td>Friday &amp; Saturday</td>
</tr>
<tr>
<td>9:00 am - 5:00 pm</td>
</tr>
<tr>
<td>Sunday</td>
</tr>
<tr>
<td>12:00 pm - 4:00 pm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Library Hours Now</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday – Thursday</td>
</tr>
<tr>
<td>8:00 am - 2:00 am</td>
</tr>
<tr>
<td>Friday</td>
</tr>
<tr>
<td>8:00 am - 12:00 pm</td>
</tr>
<tr>
<td>Saturday</td>
</tr>
<tr>
<td>9:00 am - 10:00 pm</td>
</tr>
<tr>
<td>Sunday</td>
</tr>
<tr>
<td>12:00 pm - 2:00 am</td>
</tr>
</tbody>
</table>
Statistics Solution: A Product of Initiative & Collaboration

- Online data gathering, streamlining the process
- Storage, retrieval as well as display of library usage data into a simple and user-friendly process
- Effective workflow: One-Stop-Shop
- Instant reporting
- Technology-savvy, cost-effective
- Facilitated evidence-based decision making
Benefits of Collaboration:

- Other Projects completed through cross organizational collaboration:
- Collaboration with UMBC Organizational Psychology Department - Environmental Scan
- Collaboration with faculty in communication program – Marketing Assignments (developing brochures, flyers, and video to market library services) Integrated in the course
- Library Website Usability Testing – To assess issues with the library website design in providing seamless access to information to faculty and students from nine institutions
- Other Projects In-Progress: Interactive Dashboard, Website Redesign, and Merged Service Desk Pilot Study
- Priddy Library is offering internship opportunities for the graduate students in iSchool – A great opportunity for students to gain valuable practical experience
User Research: Priddy Library Website Redesign
Pranali Shetty, (pshetty@umd.edu) 12/10/2014

PROJECT OVERVIEW
The Universities at Shady Grove (USG) Priddy Library serves the needs of students, faculty and staff from nine public universities of the State of Maryland. The Priddy Library serves all of them through the library’s website. This mission presents several challenges:
• Current website is overcrowded with information and is not up-to-date.
• They are looking to redesign their current website.
To do so, a thorough evaluation of their current website’s features and functionality is essential. Further, understanding the user requirements and their experience with the current website would be a valuable insight.

USER RESEARCH
The techniques used to analyze the website contents and understand its usability along with the steps taken to achieve each one are as follows:
• Heuristic Evaluation
• Usability Study
  • Step 1: Design Usability Study Tasks
  • Step 2: Research and Pick Usability Study Software (MORAE)
  • Step 3: Take IRB Certification
  • Step 4: Prepare IRB documents for approval.
  • Step 5: Create the user recruitment survey.
  • Step 6: Design the Flyers for the study.
  • Step 7: Schedule Users
  • Step 8: Usability set-up
  • Step 9: Conduct the Study, Post-Survey and Extract Data.

PRELIMINARY ANALYSIS
This site is easy to navigate
Good design and aesthetics.
This site uses understandable terminology.
The website is visually pleasing.

FINDINGS
• Good design and aesthetics.
• Terminology and data on the website is easy to understand and accurate.
• Easy to navigate if one knows how to use it.
• First time users find it very difficult to locate academic books and other journals.
• The structure used to locate academic resources is confusing.

RECOMMENDATIONS
• Train students how to locate the right resources.
• Provide an online video showing users how to locate various academic resources.
• Enhance functionality by adding an online room reservation system.
• Provide a general search bar for accessing all resources (books, journals etc.)
• Front page too crowded. Keep only bullet points and links.

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Toni Negro: Librarian
Sanjeevani Bhardwaj, Project Manager
Vikesh Chauhan, Graduate Asst. USG
DATA (LIBRARY REPORT) VISUALIZATION

Sarika S. Hegde, Prof. Kathy Weaver Faculty, Madhu Singh Investigator

ABOUT THE PRIDDY LIBRARY

- The Universities at Shady Grove encompasses nine universities from the University System of Maryland.
- The Priddy Library primarily supports the information and research needs of USG students, faculty, staff offering research assistance, library instructions, books, computers, equipment, and group study rooms, just to name a few.

PROJECT DESCRIPTION

- The goal is to develop a web based application which will read the excel files and demonstrate the visualization based on the values.
- The project tasks would revolve around different library data sources on the spreadsheets. It will require setting up different variables that will help the library administration understand how the library resources are contributing towards students success.

TECHNOLOGIES USED

- D3.js
- dc.js
- crossfilter.js
- Bootstrap framework

TASKS & DELIVERABLES

- Develop graphs, pie charts, bar charts and provide interactivity
- Lay down framework using bootstrap
- Integrate actual data in graphs

ACCOMPLISHMENTS

- Implemented graphs and charts for two data sources
- Regularly took feedback from the library staff on the look and feel of the dashboard
- Named the variables and commented the code.

FUTURE SCOPE

- As of now the dashboard has code for navigation panel on every page, which can be replaced by the frames to reduce the lines of code.
- The line chart as of now displays data only for one fiscal year. The code can be worked on to include composite chart that can include more than one fiscal year data at a time.
- The existing charts can be used to complete the 8 other data sources.
Conclusions:

- Developed and implemented three Solutions with very little extra cost to the organization
- Opportunities for staff to grow professionally
- Library serve larger clientele with minimum staffing
- Improved library visibility across the organization
- Opportunities for students gain valuable real life experiences – more competitive for the job market
Resources

• Course Reserves System: https://github.com/MadhuSingh/Reserves_System.git

• Equipment Management System: https://github.com/MadhuSingh/Equipment_Management_System.git

• iPad-Based Statistics Application: https://github.com/MadhuSingh/Statistics_Database.git
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- Vikesh Chauhan – Graduate Assistant
- Abha Molri – Graduate Assistant
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THANK YOU!

QUESTIONS?