WELCOME!

- **Time**  We will begin promptly at 2pm Eastern Time and end at 4pm Eastern Time.
- **Webinar Audio**  Dial 1-877-900-8837 or 1-210-234-9867 passcode: DAW2013 to join the audio bridge in listen-only mode.
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Grant Oversight
Using Data Analytics
April 16, 2013

National Science Foundation
Office of Inspector General

Georgia Institute of Technology
• Introduction
  ▪ Allison Lerner, Inspector General, NSF

• NSF OIG Grant Oversight
  ▪ Dr. Brett Baker, CPA, CISA: Assistant Inspector General for Audit
  ▪ Laura Koren, CPA, CFF: Director of Compliance Analytics

• Georgia Institute of Technology Grant Monitoring
  ▪ Phillip Hurd, CISSP, CISA: Chief Audit Executive

• Questions daw2013@nsf.gov
• $550 billion in awards
  ▪ 88,000 awardees and 26 Federal grant making agencies
  ▪ Project and research, block, and formula grants
  ▪ Outcomes are designed to promote public good

• Challenges
  ▪ Limited visibility of how Federal funds are spent by awardees
  ▪ Support for funding requests much less than for contracts

• American Recovery and Reinvestment Act (2009)
  ▪ $840 billion of assistance to stimulate the economy
  ▪ Greater accountability and transparency over spending than ever

• Opportunities to enhance oversight with less
  ▪ Automated oversight
## Grants Differ From Contracts

<table>
<thead>
<tr>
<th><strong>GRANTS</strong></th>
<th><strong>CONTRACTS</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Promote services for the Public Good</td>
<td>Specified deliverables (Goods and Services)</td>
</tr>
<tr>
<td>• Merit review (competitive)</td>
<td>• Competitive process</td>
</tr>
<tr>
<td>• Multiple awardees</td>
<td>• One awardee</td>
</tr>
<tr>
<td>• Award budget</td>
<td>• Contract Price</td>
</tr>
<tr>
<td>• No government ownership</td>
<td>• Government ownership</td>
</tr>
<tr>
<td>• Grant payments</td>
<td>• Contract payments</td>
</tr>
<tr>
<td>• Summary draw-downs</td>
<td>• Itemized payment requests</td>
</tr>
<tr>
<td>• No invoices for claims</td>
<td>• Invoices to support claims</td>
</tr>
<tr>
<td>• Expenditures not easily visible</td>
<td>• Detailed costs</td>
</tr>
<tr>
<td>• Salary percentages</td>
<td>• Salary hourly rates</td>
</tr>
</tbody>
</table>
Framework for Grant Oversight

- Data analytics-driven, risk-based methodology to improve oversight
  - Identify institutions that may not use Federal funds properly
  - Techniques to surface questionable expenditures

- Life cycle approach to oversight
  - Mapping of end-to-end process to identify controls
  - 100% review of key financial and program information
  - Focus attention to award and expenditure anomalies

- Complements traditional oversight approaches
  - Techniques to review process and transactions are similar
  - Transactions of questionable activities are targeted
### End to End Process for Grant Oversight

#### Pre-Award Risks
- Funding Over Time
- Conflict of Interest
- False Statements
- False Certifications
- Duplicate Funding
- Inflated Budgets
- Candidate Suspended/Debarred

#### Active Award Risks
- Unallowable, Unallocable, Unreasonable Costs
- Inadequate Documentation
- General Ledger Differs from Draw Amount
- Burn Rate
- No /Late/Inadequate Reports
- Sub-awards, Consultants, Contracts
- Duplicate Payments
- Excess Cash on Hand/Cost transfers
- Unreported Program Income

#### Award End Risks
- No /Late Final Reports
- Cost Transfers
- Spend-out
- Financial Adjustments
- Unmet Cost Share

---

**Dr. Brett M. Baker, 2010**
Data Sources

- Internal
  - Proposals: budgets, panel scores
  - Agency award systems, recipient reporting

- External
  - Excluded Parties List System (EPLS)
  - Central Contractor Registration (CCR/SAM)
  - Public tax filings
  - Federal Audit Clearinghouse (A-133 Audits)

- Recipient financial system records
  - General ledger and subsidiary ledgers
  - Effort reporting
  - Property
  - Travel and purchase card
  - Subaward monitoring
Risk Assessment and Identification of Questionable Transactions

Phase I
Identify High Risk Institutions

Agency Award Data
- Award proposals
- Quarterly expense reports
- Cash draw downs

Data Analytics
- Continuous monitoring of grant awards and recipients

External Data
- A-133 audits (FAC)
- D&B, Recovery Board
- SAM (CCR, EPLS)

Phase II
Identify Questionable Expenditures

Agency Award Data
- Award proposals
- Quarterly expense reports
- Cash draw downs

Awardee Transaction Data
- General ledger
- Subsidiary ledgers
- Subaward data

Data Analytics
- Apply risk indicators to GL data and compare to Agency data

External Data
- A-133 audits (FAC)
- D&B, Recovery Board
- SAM (CCR, EPLS)

Review Questionable Transactions

Dr. Brett Baker (2012)
Anomalous Drawdown Patterns

Normal drawdown pattern

Start up costs

Drawdown Spike

Extinguishing Remaining Grant funds (before expiration)

Extinguishing Remaining Grant funds (after expiration)

Grant Award

Grant Expiration

Dr. Brett Baker
AIGA. NSF-OIG
## Awardee Profile – Burn Rate

<table>
<thead>
<tr>
<th>Award</th>
<th>Amount ($K)</th>
<th>Expended ($K)</th>
<th>% Expend</th>
<th>Total Days</th>
<th>Days Active</th>
<th>% Total Days</th>
<th>Burn Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>10,000</td>
<td>9,000</td>
<td>90%</td>
<td>1095</td>
<td>769</td>
<td>70%</td>
<td>+28%</td>
</tr>
<tr>
<td>2</td>
<td>5,000</td>
<td>4,000</td>
<td>80%</td>
<td>1095</td>
<td>524</td>
<td>48%</td>
<td>+67%</td>
</tr>
<tr>
<td>3</td>
<td>2,000</td>
<td>1,500</td>
<td>75%</td>
<td>1095</td>
<td>404</td>
<td>37%</td>
<td>+103%</td>
</tr>
<tr>
<td>4</td>
<td>1,000</td>
<td>995</td>
<td>99%</td>
<td>366</td>
<td>200</td>
<td>77%</td>
<td>+30</td>
</tr>
<tr>
<td>5</td>
<td>20,000</td>
<td>12,000</td>
<td>60%</td>
<td>1826</td>
<td>500</td>
<td>27%</td>
<td>+122%</td>
</tr>
<tr>
<td>6</td>
<td>10,000</td>
<td>5,000</td>
<td>50%</td>
<td>1826</td>
<td>1600</td>
<td>88%</td>
<td>-43%</td>
</tr>
</tbody>
</table>

| Awardee Totals | 48,000 | 32,495 | 76% | 7,303 | 3,997 | 58% | +69% |
### Data Analytics: Myths and Realities

<table>
<thead>
<tr>
<th>MYTHS</th>
<th>REALITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Only</td>
<td>Supplement to Traditional Auditing</td>
</tr>
<tr>
<td>Numbers Exercise</td>
<td>Yellow Book Compliant</td>
</tr>
<tr>
<td>Process Changes Data</td>
<td>Rigorous Standards</td>
</tr>
<tr>
<td>Findings Unsupported</td>
<td>Findings Documented</td>
</tr>
<tr>
<td>Not Auditing</td>
<td>Focuses Fieldwork</td>
</tr>
</tbody>
</table>
Data Analytics Defined

Utilizing Set Rules to Perform Knowledge Discovery On the Receipt and Use of Federal Award Funds
Data Analytics Audit Objectives

- Use computer assisted techniques and data analytics to
  - Target fieldwork phase of audit
  - Monitor grant spending

- Determine if costs claimed on federal awards are
  - Allowable, Allocable, and Reasonable
  - In conformity with Grant Terms and Federal Guidance
Data Sources: Federal Awardee

General Ledger
- Accounting Transactions
- Costs Claimed

Subsidiary Ledgers
- Accounts Payable
- Payroll
- Organization Specific

Other Data
- Labor Certification and/or Effort Reports
- Defined by Policies and Procedures
Additional Awardee Data Request

- General Ledger and Subledgers (ex: A/P, Payroll) for all costs claimed
- Control/Hash totals for all files provided
- Data models, system architecture, data flowcharts
- Data dictionary containing record layout for each field
## Data Dictionary: Example

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Field Ty</th>
<th>Field Len</th>
<th>Field Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSF Financially Responsible Institution</td>
<td>ASCII</td>
<td>10</td>
<td>10-digit institution unique identification number specify</td>
</tr>
<tr>
<td>NSF Financially Responsible Institution</td>
<td>ASCII</td>
<td>64</td>
<td>Narrative institution name</td>
</tr>
<tr>
<td>NSF Award ID</td>
<td>ASCII</td>
<td>7</td>
<td>7-digit numeric number assigned to the award</td>
</tr>
<tr>
<td>NSF Award Title</td>
<td>ASCII</td>
<td>180</td>
<td>Full text title of the award being supported</td>
</tr>
<tr>
<td>NSF PI ID</td>
<td>ASCII</td>
<td>9</td>
<td>9-digit numeric ID for Principal Investigator</td>
</tr>
<tr>
<td>NSF PI Last Name</td>
<td>ASCII</td>
<td>24</td>
<td>Principal Investigator’s Last Name</td>
</tr>
<tr>
<td>NSF PI First Name</td>
<td>ASCII</td>
<td>15</td>
<td>Principal Investigator’s First Name</td>
</tr>
<tr>
<td>NSF Award Effective Date</td>
<td>Date</td>
<td>8</td>
<td>Effective date of award</td>
</tr>
<tr>
<td>NSF Award Expiration Date</td>
<td>Date</td>
<td>8</td>
<td>Award expiration date</td>
</tr>
<tr>
<td>NSF Award Financial Close Date</td>
<td>Date</td>
<td>8</td>
<td>Date the award was financially closed</td>
</tr>
<tr>
<td>NSF Award Final Expenditure Date</td>
<td>Date</td>
<td>8</td>
<td>Final expenditure date for the award</td>
</tr>
<tr>
<td>NSF Award Status Code</td>
<td>ASCII</td>
<td>2</td>
<td>Numeric code associated with award status description</td>
</tr>
</tbody>
</table>
Data Sources: National Science Foundation

- Award Database:
  - Award Dates
  - Award Amounts
  - Award Purpose
  - Amendments

- Award Budget:
  - Cost Categories
  - Dollar Amounts
  - Labor and Effort
  - Cost Share
  - Changes

- Expense Detail:
  - Costs Claimed
  - Adjustments
  - Cash Drawdowns
## Example: NSF Data

<table>
<thead>
<tr>
<th>fctr_qtr</th>
<th>fctr_rptg_inst</th>
<th>awd_id</th>
<th>net_oblg_net_disb_dol</th>
<th>expn_dol</th>
<th>net_unoblg_dol</th>
</tr>
</thead>
<tbody>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>5552440</td>
<td>4678310.04</td>
<td>267062.81</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>2934442</td>
<td>2766759.81</td>
<td>84392.72</td>
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<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>10000</td>
<td>3711.33</td>
<td>375</td>
<td>5913.67</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>1005651</td>
<td>809384.1</td>
<td>150383.07</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>713551</td>
<td>575861.62</td>
<td>0.2</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>294000</td>
<td>294000</td>
<td>0</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>140611</td>
<td>113929.36</td>
<td>15670.75</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>563039</td>
<td>562969.89</td>
<td>0</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>6810008</td>
<td>2288079.48</td>
<td>293221.39</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>3999996</td>
<td>2108738.43</td>
<td>157231.88</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>149999</td>
<td>54811.3</td>
<td>854.32</td>
</tr>
<tr>
<td>09/30/2011</td>
<td>xxxxxxxx</td>
<td>#######</td>
<td>172855</td>
<td>172557</td>
<td>0</td>
</tr>
</tbody>
</table>
Comprehensive Data Base
Criteria

Office of Management and Budget Circulars

NSF Award Terms and Conditions, Grant Details

In incurred costs

Awardee Policy and Procedures

Generally Accepted Accounting Principles
Business Rules

- General Rules for Receipt of Federal Funds
- Award Recipient Specific Rules
- Grant Specific Rules
- Accounting Rules
OPEN A01a_xxxxxx
EXTRACT RECORD TO "xxxxxxx"
OPEN_xxxxx
DEFINE FIELD c_U01_Key_Word_Flag COMPUTED AS "NSF OIG;U01 Unallowable;Key Word Flag"
"1" IF FIND("lobby") OR FIND("campaign")
"1" IF FIND("bad debt")
"1" IF FIND("alcohol")
## Example: Equipment Charges Incurred Immediately Before Grant Expiration Date

<table>
<thead>
<tr>
<th>GRANT ID</th>
<th>OBJECT DESCRIPTION</th>
<th>GRANT EXPIRATION DATE</th>
<th>TRANSACTION DATE</th>
<th>LEDGER POST DATE</th>
<th>FINANCIAL AMOUNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>XXXXX42</td>
<td>CONSTRUCTION AND ACQUISITION</td>
<td>09/30/2009</td>
<td>09/30/2009</td>
<td>10/06/2009</td>
<td>51,851.22</td>
</tr>
<tr>
<td>XXXXX27</td>
<td>INVENTORIAL EQUIPMENT</td>
<td>07/31/2010</td>
<td>06/04/2010</td>
<td>08/11/2010</td>
<td>31,621.56</td>
</tr>
<tr>
<td>XXXXX77</td>
<td>INVENTORIAL EQUIPMENT</td>
<td>08/31/2009</td>
<td>07/16/2009</td>
<td>09/10/2009</td>
<td>23,163.75</td>
</tr>
</tbody>
</table>

**TOTAL**: 106,636.53
## Travel Related to Award?

<table>
<thead>
<tr>
<th>NSF_OIG_Transaction</th>
<th>NSF_PI_ID</th>
<th>NSF_OIG_Award_Date</th>
<th>Expense Type</th>
<th>Transaction_Amount</th>
<th>NSF_OIG_Record_Co</th>
</tr>
</thead>
<tbody>
<tr>
<td>GL Trans-030745</td>
<td>############</td>
<td>09/25/2007</td>
<td>TRAVEL-IN-STATE</td>
<td>73518.84</td>
<td>1</td>
</tr>
<tr>
<td>GL Trans-099671</td>
<td>############</td>
<td>06/11/2010</td>
<td>TRAVEL - FOREIGN</td>
<td>41474</td>
<td>1</td>
</tr>
<tr>
<td>GL Trans-084844</td>
<td>############</td>
<td>11/02/2010</td>
<td>TRAVEL - OUT-OF-STATE</td>
<td>37515.73</td>
<td>1</td>
</tr>
<tr>
<td>GL Trans-045792</td>
<td>############</td>
<td>02/09/2010</td>
<td>TRAVEL-IN-STATE</td>
<td>28905</td>
<td>3</td>
</tr>
<tr>
<td>GL Trans-117607</td>
<td>############</td>
<td>06/11/2010</td>
<td>TRAVEL - FOREIGN</td>
<td>27262</td>
<td>1</td>
</tr>
<tr>
<td>GL Trans-126299</td>
<td>############</td>
<td>08/19/2010</td>
<td>TRAVEL-IN-STATE</td>
<td>20974.5</td>
<td>2</td>
</tr>
<tr>
<td>SAMPLE NUMBER</td>
<td>OBJECT NAME</td>
<td>TRANS LINE DESC</td>
<td>TRANS LINE AMT</td>
<td>QUESTIONED A</td>
<td>B</td>
</tr>
<tr>
<td>---------------</td>
<td>-------------------</td>
<td>-----------------</td>
<td>----------------</td>
<td>--------------</td>
<td>---</td>
</tr>
<tr>
<td>NSF-13-01</td>
<td>FOREIGN TRAVEL</td>
<td>xxxxxxxxxx</td>
<td>$ 10,516.00</td>
<td>$ 10,516.00</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>LODGING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSF-13-02</td>
<td>FOREIGN TRAVEL</td>
<td>xxxxxxxxxx</td>
<td>$ 7,087.50</td>
<td>$ 7,087.50</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>M&amp;IE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSF-13-03</td>
<td>FOREIGN TRAVEL</td>
<td>xxxxxxxxxx</td>
<td>$ 5,784.46</td>
<td>$ 22,207.38</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td>LODGING</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Questions during the webinar via email only to daw2013@nsf.gov

National Science Foundation
Office of Inspector General
Phone: 703-292-7100
University Oversight

Phillip Hurd
Director, Department of Internal Audit
Georgia Institute of Technology
New Age & Risks

- How the information age is used to execute fraud schemes
- Using data analytics to detect fraud
  - Iterations of analytics
    ✓ Prevention
    ✓ Compliance
Purchasing Cards & Fraud

- ID Theft
- Ready Access to Institution Money
- EASY to Steal
- Hard to detect
Visa
Card Security Features

1. All VISA account numbers begin with a 4. The characters and numbers embossed on the card should be clear and uniform in size and spacing.

2. A four-digit number printed on the card (above or below the account number) should match the first four digits of the account number.

3. The account number embossed on the card must match the account number printed on the sales draft. The last grouping of embossed digits should extend into the hologram.

4. A hologram showing the Visa Dove should appear to move when the card is tilted. A genuine hologram is a photographic image that appears to be three-dimensional when rotated. Most counterfeit cards contain a one-dimensional printed image on a foil sticker.

5. Tamper-evident signature panel with "VISA" printed at an angle in blue and gold or blue only.

6. Tiny characters called Micro Printing form a border around the Visa logo which appears above or below the hologram. Visible by using a magnifying loupe, it is made up of the first four digits of the account number and other characters.

7. The "Flying V" is embossed on the same line as the valid dates.

8. The signature on the back of the card must match the signature on the sales draft. All Visa cards must be signed before they are valid.
Low Security by Design

• The goal of the credit card companies, as they say, is not to eliminate fraud, but to "reduce it to manageable levels", such that the total cost of both fraud and fraud prevention is minimized.

• The low security of the credit card system presents countless opportunities for fraud. This opportunity has created a huge black market in stolen credit card numbers, which are generally used quickly before the cards are reported stolen.
The Players - Who else is in the mix?

- Banking Partner
- Merchant Provider
- Credit Card Processor
- IT/Business Staff
- Ticketing Company
- Credit Card Companies
  - Visa, Master Card, Discover Card, American Express
Georgia Tech P-Card Process

1. Need is identified

2. Cardholder makes purchase (May be a local departmental approval process)

3. Redistribution in “Works” system within 7-day window

4. Reconciliation – Cardholder prepares receipts, statement

5. PCard Approver reviews and approves all reconciliation packages. PCard Coordinator verifies online in TechWorks.

6. Redistribution within journal entry or cost transfer in PeopleSoft
Procurement Controls

• Preventive Controls
  — Card-based controls (MCC, Etc)
    ▪ May be customized
    ▪ Transactions not within established parameters declined at POS

• What Most Institutions Consider Procedural Controls
  — Policies and Procedures
  — Training
  — Cardholder agreement
Fun Fraud Scheme

- Preventive Controls
- Proxy Purchasing
  - Set up to sell items through Amazon or eBay using fictional name
  - Set up PayPal to receive credit card payments
  - Purchase needed items with personal funds through a legitimate vendor
  - Sell the items through the proxy
  - Purchase these items with institutional funds
  - The margin is the theft and virtually impossible to detect
Fun Fraud Scheme

1. Move yourself into a position to purchase Items in your company

2. Identify a legitimate need (monitor)

3. Find a local store that sells the item (electronics store - monitor $200)
Fun Fraud Scheme

4. Purchase item from a local store using your own money

5. Set up an online merchant presence (eBay, Amazon, etc...) (eBobs monitors)

6. Set the selling price of the monitor on eBobs monitors to $300 + shipping
Fun Fraud Scheme

7. Use your employer’s Purchase Card to buy the monitor from eBob’s monitors for $300 + shipping.

8. Bring the monitor into work and keep the shipping money and overage.

9. All paperwork is created by legitimate third parties. Near impossible to trace without data analytics.
Why Data Analysis?

Georgia Tech’s Issues

• Large Variety of Data
  • Multiple data sources to examine
    ▪ Not able to get consolidate view
• High Volume Data
  — Long analysis time
• Not on pace with speed of business
Continuous Framework

Data From any Source

- ERPS
- BESPOKE APPS
- SYSTEM LOGS
- TELECOM SWITCHEs
- EXTERNAL DATABASES
- LEGACY SYSTEMS

CONSOLIDATED VIEW
Extract, transform, and load using established tools

CONTROL AND BUSINESS RULES
Applied using parameters and scripts

GENERATE EXCEPTIONS
Control breaches and suspicious transactions

Enterprise-wide Management of Exceptions

- Executive s
- Finance
- Audit and Compliance
- Sales and Marketing
- IT
- Board of Directors
- Business Units
- Engineering

Alert Systems
SMS and e-mail
For info, action, or oversight

Exception Management
- Deadlines
- Escalation
- Automatic detection of resolved issues

Business Logic
- Elimination of false positives
- Fine tuning of results and parameters

Enterprise View
- Organizational view of risks and controls
- Comparative analysis
What does a Continuous Auditing or Monitoring solution look like for GT?

- **Knowledge Maintenance Console**
- **Extract, Map & Load**
- **Audit Database**
- **Reasoning & Analytics Engine**
- **Workflow Engine**
- **Platform Data & Logs**
- **Visual Reporting/User Interface**

**Systems of Record**
- AP, HR, and/or GL Data
- Contract or Project Data
- Watch List data

---

**The Platform**

- Extract & Mapping Rules
- Common Data Models
- Risk and Performance Checks
- Workflow & Platform Configuration

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**Knowledge Maintenance Console**
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**Knowledge Maintenance Console**
- **Extract, Map & Load**
- **Common Data Models**
- **Risk and Performance Checks**
- **Workflow & Platform Configuration**
- **Visual Reporting/User Interface**
Factors

1. Capabilities
   i. Data Integrity
   ii. Data Import from any source
   iii. Audit Specific Commands

2. Ease of Use
   i. Equation vs. Algorithm approach
Areas for Consideration

Purchasing Cards
- Large transaction volumes

Grant Compliance
- Possible nepotism
- Non-compliance
- Unallowable Expenses
- Cross Grant Movement
Data Analysis & P-Cards

- MCC
- Data Levels –III
- Project/Grant Number
- Allow-ability Definitions
- IDEA®
- Monitor ®
DATA that Didn’t exist 5 years ago...

<table>
<thead>
<tr>
<th>Level I data includes:</th>
<th>Level II data includes:</th>
<th>Level III Data includes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date</td>
<td>Date</td>
<td>Date</td>
</tr>
<tr>
<td>Merchant Name</td>
<td>Merchant Name</td>
<td>Merchant Name</td>
</tr>
<tr>
<td>City</td>
<td>Tax ID</td>
<td>Tax ID</td>
</tr>
<tr>
<td>State</td>
<td>Merchant Type Code</td>
<td>Merchant Type Code</td>
</tr>
<tr>
<td>ZIP Code IS not</td>
<td>Merchant Category Code (MCC)</td>
<td>Merchant Category Code (MCC)</td>
</tr>
<tr>
<td>prompted by the</td>
<td>City</td>
<td>City</td>
</tr>
<tr>
<td>terminal.</td>
<td>State</td>
<td>State</td>
</tr>
<tr>
<td></td>
<td>ZIP Code</td>
<td>ZIP Code</td>
</tr>
</tbody>
</table>

The merchant will then need to enter:
- Purchase Amount
- Excluding Sales Tax
- Sales Tax
- Local Tax Indicator
- Customer Code (if using a purchasing Card)

The merchant will then need to enter:
- Purchase Amount
- Excluding Sales Tax
- Sales Tax
- Local Tax Indicator
- Customer Code (if using a purchasing Card)
- Full Line Item Details
Things to note & how to detect

Notes
• Must have level three data
• Must have profile of use

Detection
• Ratio analysis of users to like items
• Test of store credentials to user information
• ID non level three vendors
• Project/Grant ID
The Journey continues...

Continuous Monitoring...

- Grants & Contracts
- Purchasing Cards
- Travel & Expense
- Financial Aid
Closing Comments

• More efficient use of resources
  ▪ 100% transaction review
  ▪ Still use traditional audit techniques to test transactions

• Improved risk identification
  ▪ Business rules based on risks
  ▪ Focus review on higher risks

• Recipients can use similar data analytics techniques
  ▪ Monitor grant spending
  ▪ Identify anomalies early