

## Partnership for Success: Geeks, Nerds and Techies Collaborate

**Mehmet "Dali" Öztürk, Ph.D.**

**Director, Research, Planning & Institutional Effectiveness**

**Tim Hollabaugh**

**Dean, Technology Services**

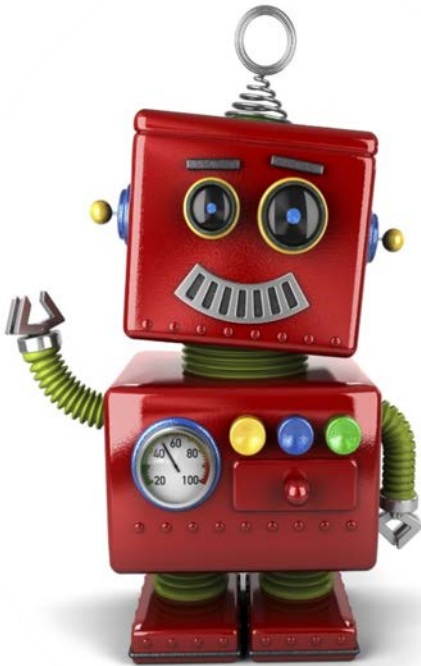
**The California Association for Institutional Research (CAIR)**

**40th Annual Conference**

**November 4-6, 2015**

**The Holiday Inn Golden Gateway Hotel , San Francisco**

The objectives of this presentation are to:



- Share experiences with building and maintaining a successful partnership between IR and IT departments.
- Discuss and demonstrate dynamics of developing processes, protocols, tools and improvement models that directly impact the institutional effectiveness.
- Stimulate audience participation, engagement and feedback.



COLLEGE OF THE SEQUOIAS



**Recommendation 3:** The team recommends that the college increase the research capacity of the institution in order to compile and provide data to guide institutional planning and resource allocation, program review and assessment, and decision-making for institutional effectiveness. (Standards I.B.2, I.B.3, I.B.6, II.A.1.a, II.A.1.c, II.A.2.e, II.A.2.f, II.B.4, III.A, IV.B.2.b)

Association of Schools and Colleges, at its meeting January 7-11, 2013, considered the institutional Self Evaluation Report, the report of the evaluation team which visited College of the Sequoias October 8-11, 2012, and the comments made by College representatives via conference call to the meeting.

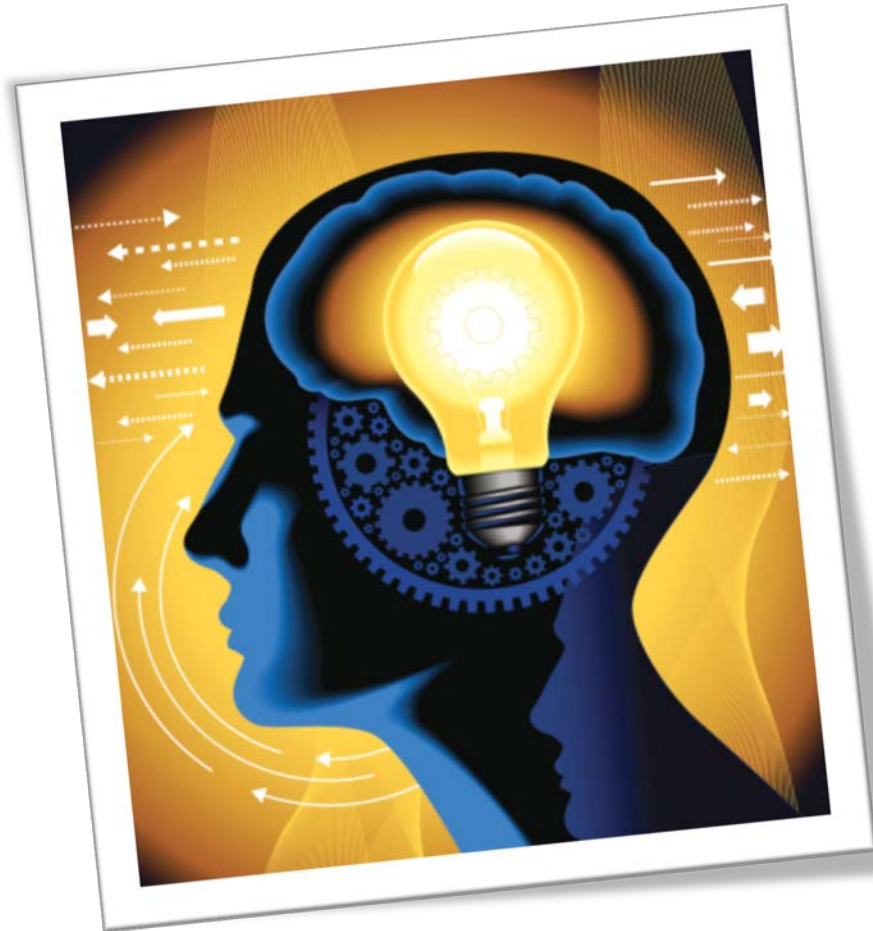
# Where was research in 2012?

- Inadequate staffing impacted research capacity
- No defined research agenda
- Lack of apparent link for research and use of data to planning
- Lack of clear or formal process to use data to make decisions
- Lack of educational opportunities for District employees on how to access and use data to make informed decisions
- Low visibility and ineffective communication of research efforts





# Problem Solving



We cannot solve our problems with the same thinking we used when we created them.

*~ Albert Einstein*



# COS

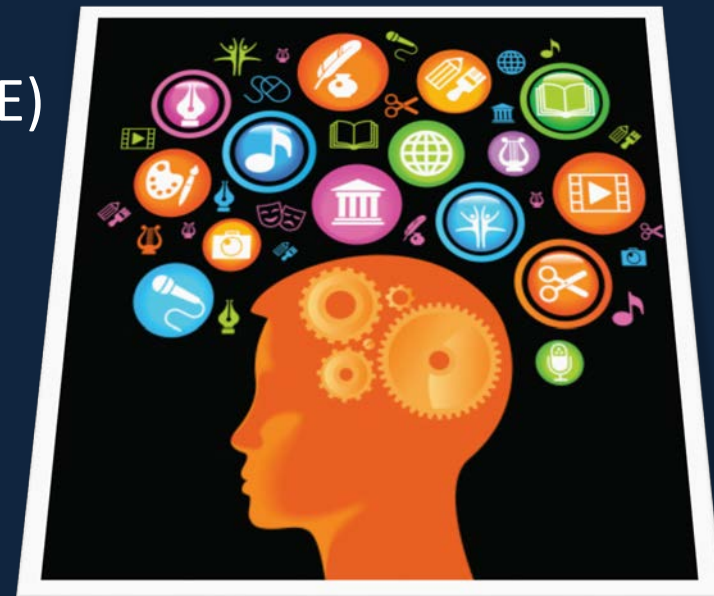
RESEARCH, PLANNING &  
INSTITUTIONAL EFFECTIVENESS  
[R-PIE]

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## Mission Statement

The mission of the Office of Research, Planning & Institutional Effectiveness (R-PIE) is to provide **research, planning, and assessment services** to all segments of the College community.

We take pride in **collecting, analyzing, interpreting, and presenting** research findings to administrators, faculty, and staff for use in advancing the COS Mission.





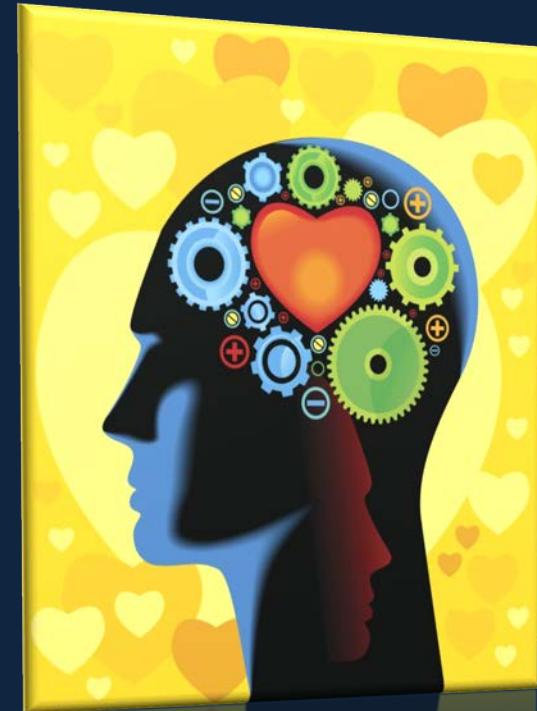
# COS

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## Core Values

- **Team-oriented:** Build, manage and nurture teams;
- **Accountability:** Take responsibility for our own actions;
- **Integrity:** Commit to open, honest and transparent decisions and relationships
- **Continuous Improvement:** Commit to on-going assessment and evaluation;
- **Innovation:** Pursue innovations in data management systems that are critical to continuous improvement of quality;
- **Solutions:** Generate sustainable data-driven solutions to achieve excellence.





# Why is research/data relevant AND important?

**COS 2.0:** The analysis of **data is central** to the COS Model for Integrated Planning.

**Core Values:** Innovative thinkers and problem solvers: Proactively explore and adapt, innovative and sustainable, **data driven solutions** to achieve institutional excellence.

**General Ethical Standards-** Recognizing responsibility to the District, all managers:

- J. **Engage in research** and are knowledgeable and **skilled in research techniques**, use sound and defensible methodologies, conduct and report investigations in a manner that **minimizes** the **possibility** that results will be **misleading, inaccurate**, and/or deceptively **incomplete**.

(Source: COS 2015 Management Handbook, pp. 6-8).



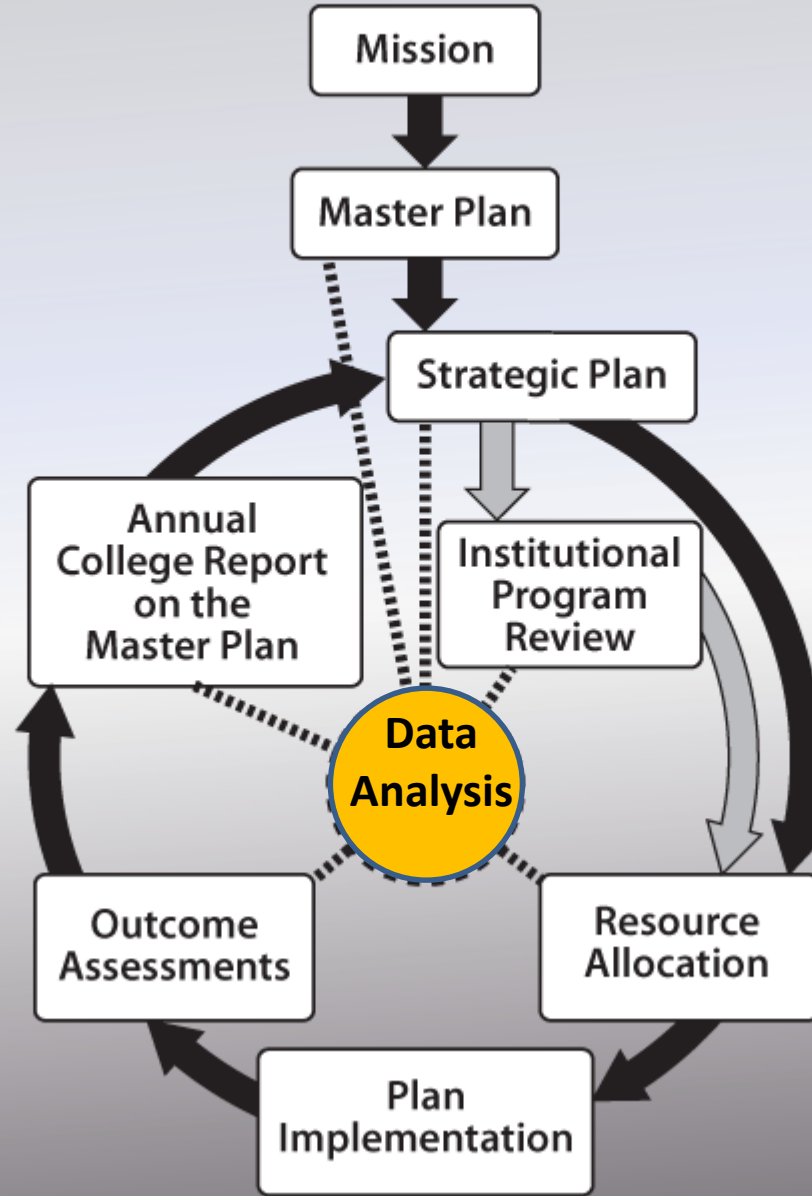
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# College of the Sequoias Model for Integrated Planning

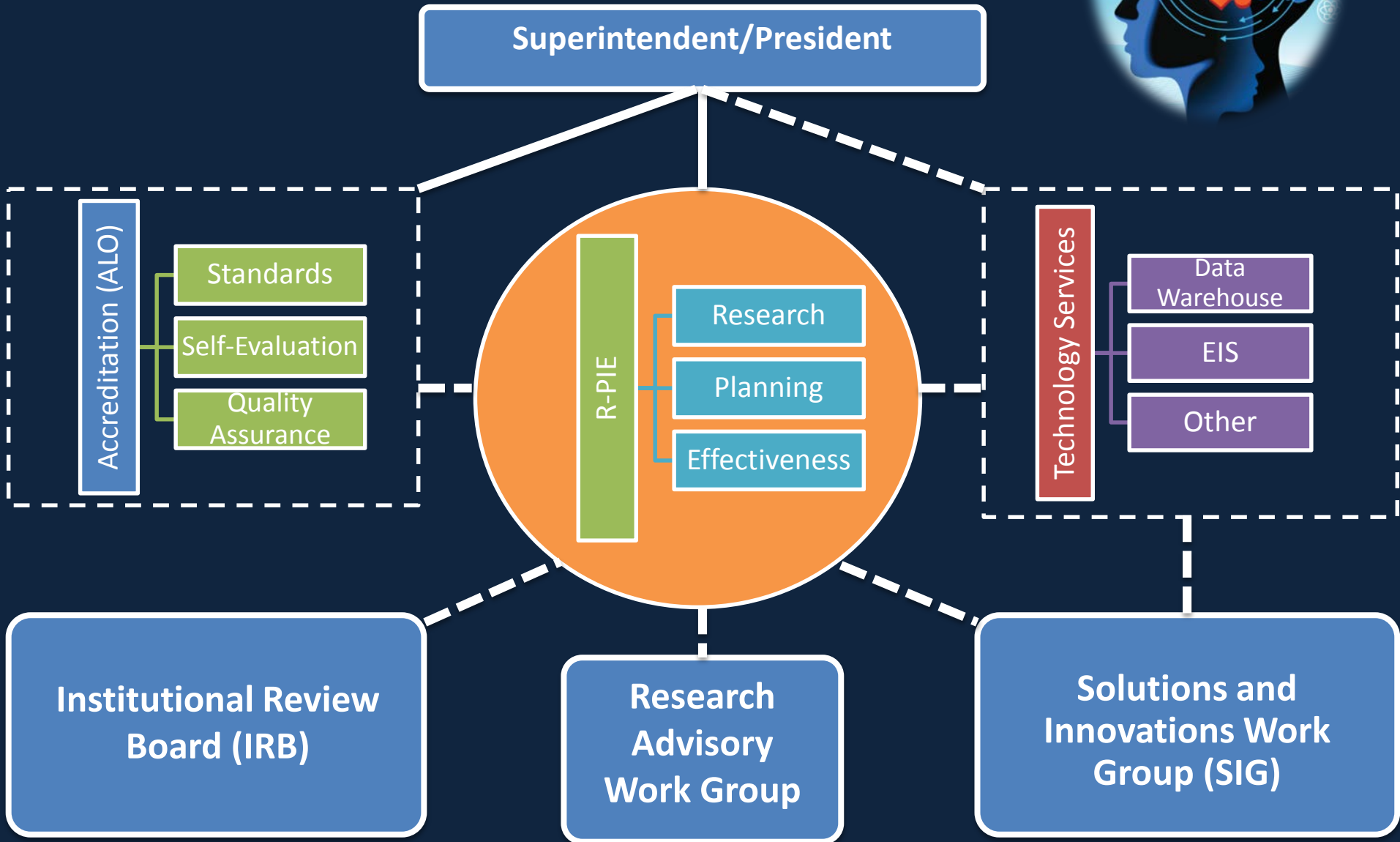


The analysis of data is **central** to the College of the Sequoias Model for Integrated Planning and serves as an important tool in each of the District's planning processes.



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# The C.O.S. Solutions & Innovations Work Group



**Co-Chairs:** Dr. Mehmet Dali Ozturk & Tim Hollabaugh

**Purpose:** Solutions and Innovations Work Group has been established in fall 2013 to coordinate district's efforts in utilizing available data that can be used for research, assessment and decision support purposes. The work group meets on a regular basis to discuss and **generate solutions to issues** and challenges related to data and data systems that directly affect district's research capacity. The group also pays special attention to innovations in data management systems that are critical to **continuous improvement of quality**.

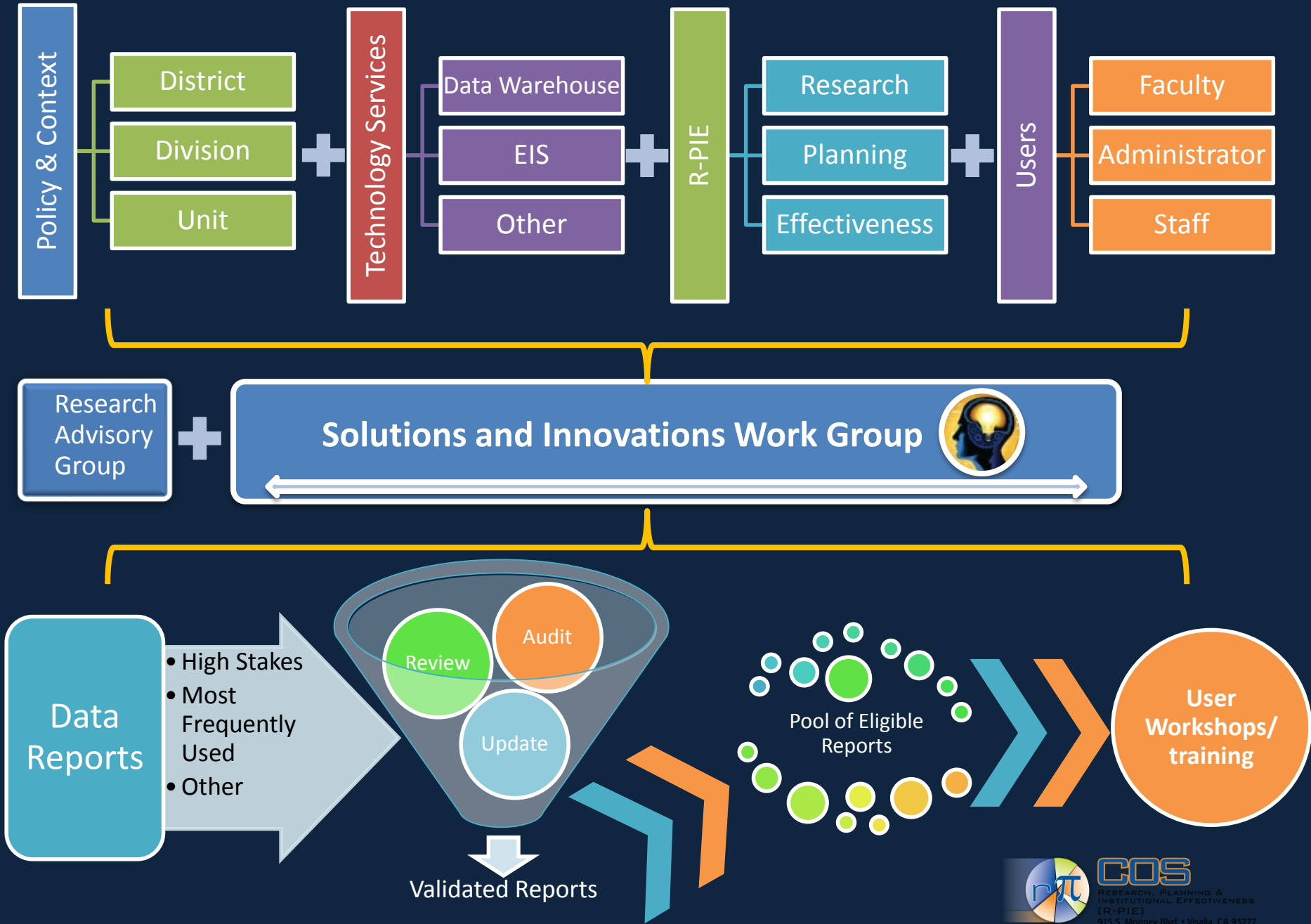
The Solutions and Innovations Workgroup was designed to increase the research capacity of the institution by coordinating District efforts in utilizing available data that can be used for research, assessment, and decision support services.



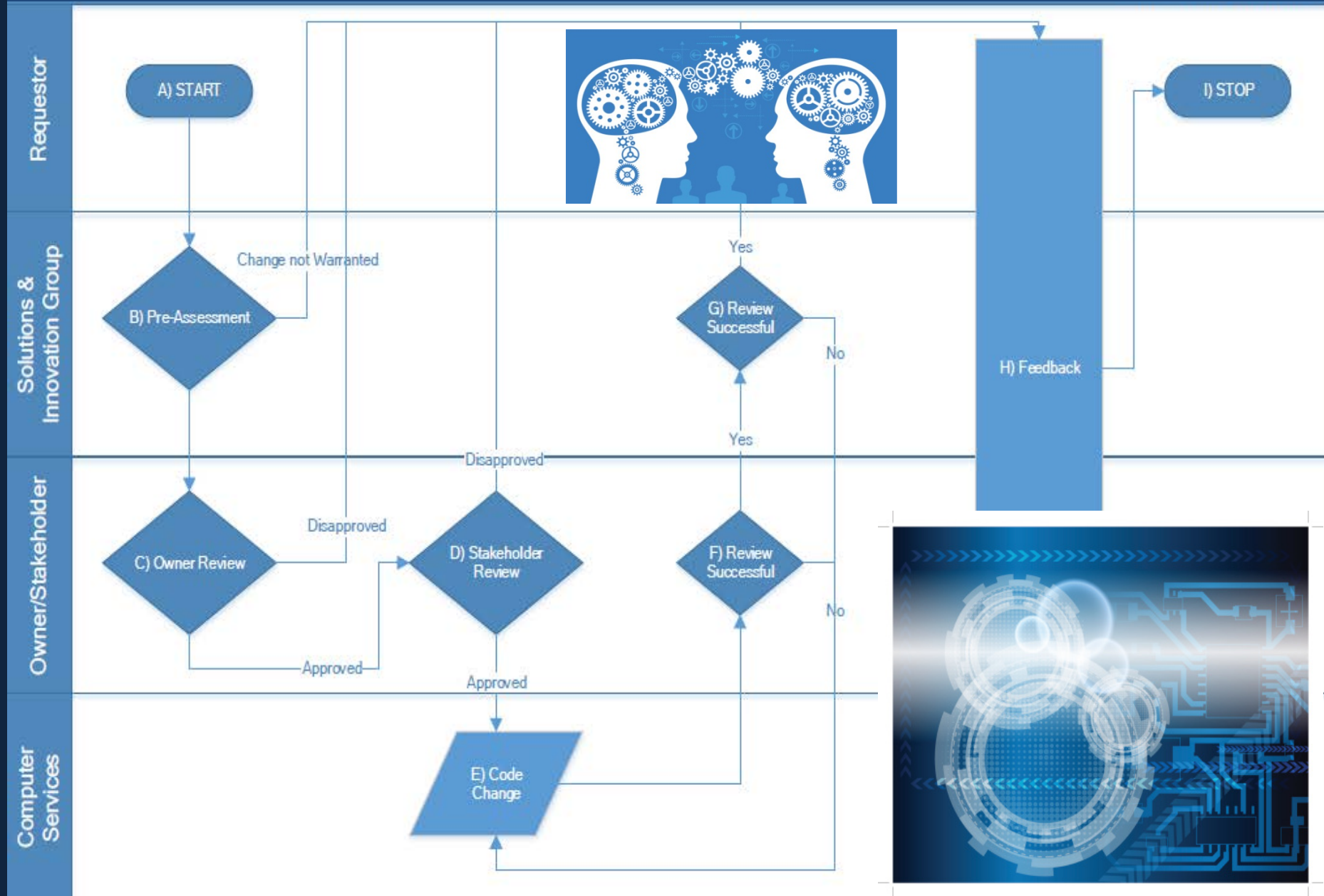
## The Solutions & Innovations Work Group

- **Assess the efficiency and effectiveness** of the District's COS Extended Information System (CEIS) in order to further decrease replication of requests and assure data integrity as it pertains to internal and external reporting;
- Identify and employ strategies that **maintain data integrity** which included standardization of operational definitions, coding procedures, and data accounting methods;
- Meet on an ongoing basis to identify issues with data use and reporting, analyze their implications, and **generate solutions**. These activities directly increase the District's research capacity as well as improve efficiency and **data validity**;
- Coordinate the District's efforts to employ data for research, assessment, and to **support decision making**;
- Implement the COS Data Reports Improvement Model which is a plan **to improve quality** and effective use of data.

# C.O.S. Data Reports Improvement Model



# Extended Information System Reports/Validation Tables: Code Change Workflow





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915 S. Mooney Blvd., Visalia, CA 93277

President's Office Academic Services Student Services Administrative Services Human Resources

Solutions & Innovations Workgroup

SIG Home

COS Intranet > Governance > Solutions & Innovations Workgroup



- Libraries
- Lists
- Discussions

- Recycle Bin
- All Site Content



# Solutions & Innovations Workgroup

We cannot solve our problems with the same thinking we used when we created them. A. Einstein

### Upcoming Meetings

Select	Edit	Date	Details
--------	------	------	---------

There are no items to show in this view of the "Meetings" list. To add a new item, click "New".

+ Add new item

### Documents

Type	Name	Document Purpose
------	------	------------------

- CAIR conference presentation proposal
- Oracle to SQL Server Warehouse mapping
- Validated\_EIS\_Reports

+ Add document

### Past Meetings

Select	Edit	Date	Details	Type	Name	Document Purpose
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- 8/26/2015
- 9/2/2015
- 9/9/2015

There are no items to show in this view of the "Documents" document library. To add a new item, click "New" or "Upload".

+ Add document



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I Like It

Governance Workgroups ▾ Councils ▾

Search this site...

**Solutions & Innovations  
Workgroup**

SIG Active Tasks ▾

COS Intranet &gt; Governance &gt; Solutions &amp; Innovations Workgroup



<input type="checkbox"/>	ID	Title	Assigned To	Status	Priority	Due Date	Needs review/atten
--------------------------	----	-------	-------------	--------	----------	----------	--------------------

Count= 23

<input type="checkbox"/>	4152	Change Repository/Document History/ChangeLog	Ahsen Baig Ryan White Lee McDonald Tim Hollabaugh	3) In progress	(2) Normal		No
	4155	Consequences of making coding changes	Lee McDonald	4) Review/Validation	(2) Normal		No
	4157	Employee Procedural Handbook	Solutions And Innovations Work Group	3) In progress	(2) Normal		No
	4173	Data Warehouse - Jobs - Enroll	Ahsen Baig Solutions And Innovations Work Group	3) In progress	(1) High	8/17/2015	No
	4175	Faculty Load Exception Report	Lee McDonald Solutions And Innovations Work Group	1) Issue discovered	(2) Normal		Yes

Libraries ▾

Lists ▾

Discussions ▾

▶ Team Discussion



Recycle Bin



All Site Content

Version History	Alert Me
Manage Permissions	Workflows
Edit Item	Delete Item
Manage	Actions

**Solutions & Innovations Workgroup**

OLD SIG Tasks: Ethnicity data coding

COS Intranet > Governance > Solutions & Innovations Workgroup

Libraries

- Documents
- Project Documents
- Lists
- OLD Tasks
- Meetings
- Calendar
- Issues
- Risks
- Deliverables
- OLD SIG Tasks
- SIG Project Tasks

Discussions

Team Discussion

- Recycle Bin
- All Site Content

**i** The content of this item will be sent as an e-mail message to the person or group assigned to the item.

Title	Ethnicity data coding
Predecessors	
Needs review/attention	No
Priority	(2) Normal
Status	6) Closed - Solution
% Complete	100%
Assigned To	Ahsen Baig Ryan Barry-Souza Ryan White
Start Date	8/28/2014
Due Date	8/28/2014
Ticket#	0
Last Status Change	12/11/2014 11:26 AM
Ticket	<a href="http://helpdesk.cos.edu/rep/view.asp?id=0" target="_blank">0</a>
Category	Banner; Data Warehouse
Owner/Stakeholders	Solutions And Innovations Work Group
Issue	<p>Ryan Barry-Souza (9/10/2014 3:05 PM):</p> <p>Ethnicity formula needs to be revised and checked for accuracy. Specifically needs:</p> <ul style="list-style-type: none"> <li>Filipino students need to be included.</li> <li>verify or reduce the "unknown" category.</li> <li>Remove "non-resident alien" product.</li> </ul>
In progress	<p>Ryan Barry-Souza (12/11/2014 11:26 AM):</p> <p>Ryan Barry-Souza (12/11/2014 11:03 AM): Ethnicity formula altered and is within the range of datamart figures. Changes to the EIS still need to be made to reflect the new ethnicity groups.</p> <p>Ryan Barry-Souza (11/20/2014 8:46 AM): RyanBS, RyanW and Ahsen explored formula and initiated the following actions:</p> <ul style="list-style-type: none"> <li>Remove the Non-Resident from the formula</li> </ul> <p>Aim to match the same ratio of students that are displayed in the datamart distribution. The count of students will be different, but the proportions need to be comparable.</p> <p>Still working on tightening up the formula to minimize the amount of unknown students.</p>
Solution	<p>Ryan Barry-Souza (9/24/2014 2:51 PM):</p> <p>Ryan Barry-Souza (9/24/2014 1:41 PM):</p> <p>Ryan Barry-Souza (9/10/2014 3:29 PM):</p> <p>Ryan Barry-Souza (9/10/2014 3:05 PM): Ahsen, Ryan BS and Ryan W investigated issues. Access issue was remedied by Ahsen. Investation revealed what fields can be used and how to clean the formula.</p> <p>Formula re-written to reflect the distribution of Datamart.</p>

Save	Cancel	Paste	Cut	Delete Item	Attach File	Spelling
Commit		Clipboard		Actions		Spelling

- Documents
  - Project Documents
- Lists
  - OLD Tasks
  - Meetings
  - Calendar
  - Issues
  - Risks
  - Deliverables
  - OLD SIG Tasks
  - SIG Project Tasks
- Discussions
  - Team Discussion
- Recycle Bin
- All Site Content

<b>Content Type</b>	Task ▾ Track a work item that you or your team needs to complete.
Title *	2012 - 2014 MIS CB Report resubmission
Predecessors	<div style="display: flex; align-items: flex-start;"><div style="border: 1px solid gray; padding: 2px;"><ul style="list-style-type: none"><li>2009 Data Resubmission</li><li>2012 - 2014 MIS CB Re</li><li>2015 Objective Assessr</li><li>AAC - Replacement fot /</li><li>Academic Planning Data</li><li>Access Database Files</li><li>Access Protocol/Issues</li><li>ACCJC Annual Report M</li></ul></div><div style="margin-left: 10px;"><input type="button" value="Add &gt;"/> <input type="button" value="&lt; Remove"/></div><div style="border: 1px solid gray; padding: 2px; margin-left: 10px;"><p>Transferable Courses CF</p></div></div>
Needs review/attention	<input checked="" type="checkbox"/>
Priority	(1) High ▾
Status	6) Closed - Solution ▾ <ul style="list-style-type: none"><li>1) Issue discovered</li><li>2) Issue defined/Statement of problem</li><li>3) In progress</li><li>4) Review/Validation</li><li>5) Closed - No action</li><li>6) Closed - Solution</li></ul>
% Complete	
Assigned To	<input type="text" value="d;"/>
Start Date	<input type="text"/>
Due Date	<input type="text"/>
Ticket#	
Category	<ul style="list-style-type: none"><li>D1) Disapproved (Owner/Stakeholder)</li><li>E) Code Change</li><li>F) Review Successful (Owner/Stakeholder)</li><li>G) Review Successful (SIG)</li><li>H) Feedback</li><li>I) Stop with Solution</li><li>I1) Stop/Closed</li></ul> <input type="checkbox"/> Accreditation <input type="checkbox"/> Specify your own value: <input type="text"/>

# Building Research Capacity

- People
- Systems
- Processes
- Protocols






# PEOPLE:

# AWARE. INFORMED. INQUIRING.



<input type="checkbox"/> <b>Extended Information System Reports</b>		<b>68% (89)</b>
<input type="checkbox"/> TracDat Reports		73% (96)
<input type="checkbox"/> <b>California Community College Chancellor's Office Student Success Scorecard</b>		<b>62% (81)</b>
<input type="checkbox"/> <b>California Community College Chancellor's Office Management Information System Data Mart</b>		<b>55% (71)</b>
<input type="checkbox"/> California Community College Chancellor's Office Salary Surfer		46% (60)
<input type="checkbox"/> California Community College Chancellor's Office Basic Skills Cohort Tracking Tool		53% (69)
<input type="checkbox"/> California Community College Chancellor's Office Career Technical Education (Perkins IV) Reports		47% (62)

Show Reports You Don't Have Access To Show All Reports

Reports shown: 107

Click an Owner to send email to request access

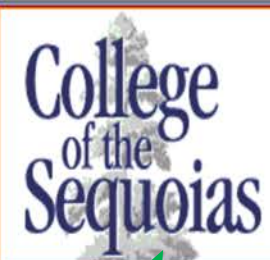
Report	Owner	Description	Documentation
Academic Calendar	<a href="#">La Serna, Jennifer</a>	Creates an academic calendar starting on the month you choose [BANNER]	<a href="#">Documentation</a>
Academic Standing	<a href="#">Tos, Angela</a>	EIS versions of Academic Standing reports in Access student_selection database (also includes Combined and Progress Standing) [BANNER]	<a href="#">Documentation</a>
Applicants and Applications	<a href="#">Tos, Angela</a>	EIS version of various Applicant reports from the Access student_selection database. [BANNER]	<a href="#">Documentation</a>
Application Interests	<a href="#">Tos, Angela</a>	Shows students who have marked the various interest checkboxes on their applications. Can be filtered by one or multiple interests.	<a href="#">Documentation</a>
Application Review	<a href="#">Tos, Angela</a>	Shows application answers for a student	<a href="#">Documentation</a>
Assessment and Placement	<a href="#">Tos, Angela</a>	EIS version of the Assessment and Placement Report in studentselection.mdb [BANNER]	<a href="#">Documentation</a>
Athletic Eligibility	<a href="#">Tos, Angela</a>		<a href="#">Documentation</a>
Average Full Time Load	<a href="#">Tos, Angela</a>	EIS version of the Average Full Time Load query in the StudentSelection Access database. Shows the average of current units > 11.9 for a term. [BANNER]	<a href="#">Documentation</a>
BOGG Waivers	<a href="#">Loverin, David</a>		<a href="#">Documentation</a>
Budget Availability	<a href="#">Miller-Hernandez, Leangela</a>	Available budget by Account for a Fund, Organization, and Program	<a href="#">Documentation</a>
Budget by Org and Prog	<a href="#">Miller-Hernandez, Leangela</a>	Budget numbers for Fund, Organization, and Program	<a href="#">Documentation</a>
Budget Summary	<a href="#">Miller-Hernandez, Leangela</a>	Budget numbers by Account for a Fund and Date range	<a href="#">Documentation</a>
Budget Summary Extended	<a href="#">Miller-Hernandez, Leangela</a>	Budget numbers Fund, Organization, Program and Location	<a href="#">Documentation</a>
CalWorks	<a href="#">Figallo, Jessica</a>	EIS version of still-used reports in the CalWorks.mdb Access database.	<a href="#">Documentation</a>
Canceled Courses	<a href="#">La Serna, Jennifer</a>	Shows courses canceled for a term since an entered date [BANNER]	<a href="#">Documentation</a>
Census Enrollment	<a href="#">Tos, Angela</a>	EIS version of Access report, plus enhancements [BANNER]	<a href="#">Documentation</a>
Certificate Report	<a href="#">Tos, Angela</a>		<a href="#">Documentation</a>
Computed Weeks	<a href="#">La Serna, Jennifer</a>	Shows difference between calculated weeks by section and weeks entered in Banner [BANNER]	<a href="#">Documentation</a>
Counseling Contacts	<a href="#">Tos, Angela</a>		<a href="#">Documentation</a>
Counselor Sessions (High School S.T.E.P.S. RSVP)	<a href="#">Tos, Angela</a>	Sessions for counseling and the appointment made for those sessions. High School S.T.E.P.S. RSVP.	<a href="#">Documentation</a>
Course Daily Fill Rate		Daily enrollment and percentage of max enrollment for each day of a term	<a href="#">Documentation</a>
Course Fill Pattern	<a href="#">La Serna, Jennifer</a>	Lists average enrollment history for 3 terms. Enrollment on particular date is also available.	<a href="#">Documentation</a>
Course Master	<a href="#">Giegold, Annette</a>	[BANNER]	<a href="#">Documentation</a>
Course Type Counts & Percentages	<a href="#">La Serna, Jennifer</a>		<a href="#">Documentation</a>
Courses Not Offered in 2 Years	<a href="#">La Serna, Jennifer</a>	Active courses that have not been scheduled in the last 2 years [BANNER]	<a href="#">Documentation</a>

128 Reports and Operational Tools

1 2 3 4 5



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- Days
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# COS Extended Information System

## Leaves Balances

Logged In: COMPUTER  
 Today's Date: May 29, 2015  
 Data from liv

John Smith

Records listed: 5

Home Org	Position	Leave Code	Begin Bal	Leave Accrued	Leave Taken	Ending Balance	Activity Date
004050	MDR985						
		ADSL	0.00	0.00	0.00	0.00	8/25/2014
		END	16.00	0.00	0.00	16.00	7/29/2014
		NDD	0.00	0.00	0.00	0.00	2/23/2015
		SICK	214.80	0.00	1.00	213.80	5/22/2015
		VAC	277.93	13.33	0.00	291.26	5/22/2015

### Employees who report to John Smith

Banner ID	Name	Home Org	Position	Reports To	Leave Code	Begin Bal	Leave Accrued	Leave Taken	Ending Balance	Activity Date
	Jane Smithovich			MDR985						
					COMP					5/22/2015
					END					7/28/2014
					NDD					5/22/2015
					SICK					5/22/2015
					VAC					5/22/2015

### Employee Leaves Balances

User Manual

Data Source (majority)	BANNER database
Owner	Bratsch, John
Menu Group	Human Resources

#### Description

Shows the current user's sick leave, vacation, comp time, and adult sick leave balances. Data comes from PHRHIST, PERLEAV, and PHRACCR tables.

#### Parameters

None

#### Report Columns

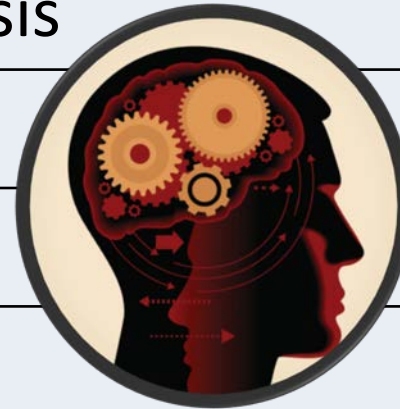
Column	Description
Home Org	The user's home organization code
Position	The user's job position code
Leave Code	ADSL: adult sick leave COMP: comp time SICK: sick leave VAC: vacation time
Begin Bal	Beginning balance from PERLEAV



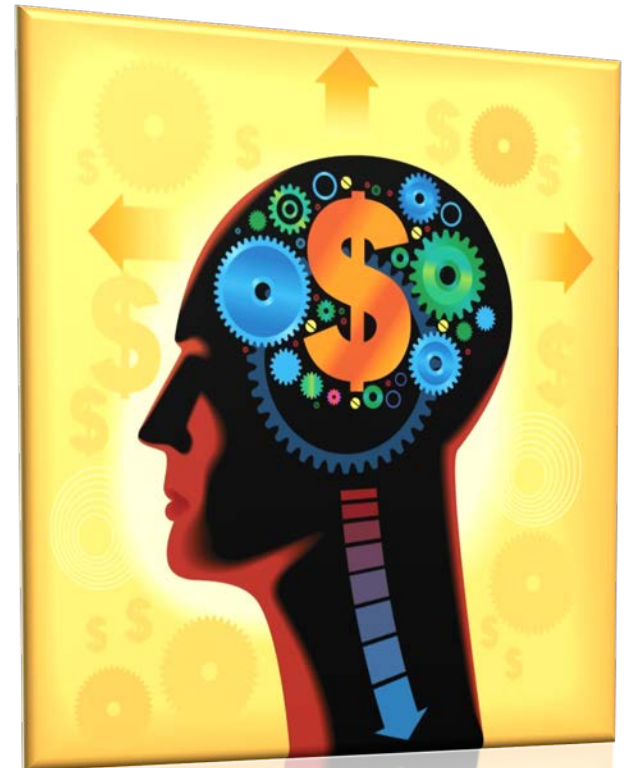
## Level of Interest in Potential Workshop Topics

Source: COS Research Advisory Data Needs Questionnaire, 2014

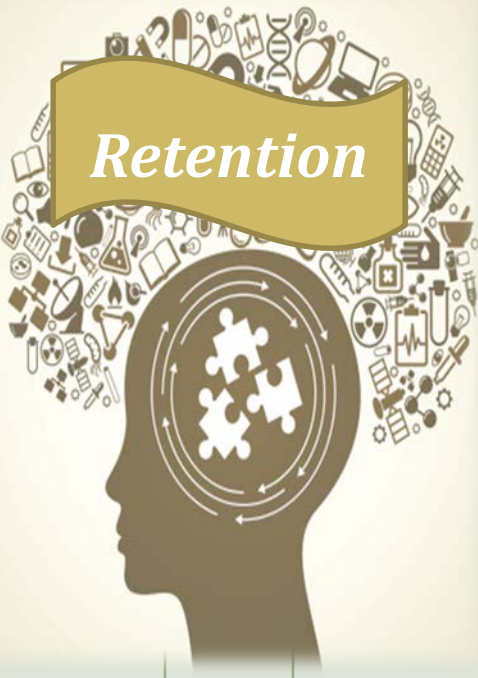


<input type="checkbox"/> <b>Availability and identification of relevant/useful data sources/reports</b>	<b>77% (100)</b>
<input type="checkbox"/> Data interpretation and analysis	<b>70% (90)</b>
<input type="checkbox"/> Effective uses of data	<b>71% (96)</b>
<input type="checkbox"/> Research/study design	<b>68% (89)</b>
<input type="checkbox"/> Evaluation design	<b>71% (91)</b>
<input type="checkbox"/> Survey development and administration	<b>66% (87)</b>
<input type="checkbox"/> <b>Service Area Outcome development</b>	<b>62% (80)</b>
<input type="checkbox"/> Evidence-based decision-making	<b>74% (96)</b>
<input type="checkbox"/> How to present and disseminate results	<b>68% (88)</b>



- Information/data sources
- Definitions
- Methods
- Methodology
- Parameters used
- Reporting period



# DEFINITIONS

Question # 15a.	Answer	ACCJC	COS	RP Group	Scorecard	DataMart
<p>Percent of students <b>retained</b> from fall 2011 to fall 2012 semesters:</p> 	<p>49%</p>	<p><b>Rate equals the number of students who completed a course in fall 2011 and were enrolled in a course fall 2012</b></p>	<p><b>Student Retention</b> is defined as the ratio of all first-time students with a declared goal to transfer, earn an AA/AS, or earn a two-year vocational certificate, who complete a course with any grade (A,B,C,D,F,W,CR,N C,PNP, and I) in the initial Fall term and is registered for a course past census (registration code starts with 'R' or = 'DW') in the subsequent Fall term.</p>	<p>Percentage of students who are enrolled as of census for an initial and a subsequent term.  <u>Numerator:</u> The number of students who receive a grade of A, B, C, D, F, FW, I*, MW, P/CR, NP/NC, R, or W in at least one class in the subsequent primary term.  <u>Denominator:</u> The number of students who receive a grade of A, B, C, D, F, FW, I*, MW, P/CR, NP/NC, RD, W in at least one class in the initial primary term.            Exclude: Any students who receive a degree, certificate, or transfer during the time period covered by the first term and subsequent term.</p> 	<p>The percentage of first-time students with minimum of 6 units earned who attempted any Math or English in the first three years and achieved the following measure of progress (or momentum point):</p> <ul style="list-style-type: none"> <li>• Enroll in first three consecutive primary semester terms (or four quarter terms) anywhere in the CCC system.</li> </ul> 	<p>Data Mart defines retention as completing a course with any grade mark. It is not comparable with ACCJC's application of "retention rate".</p> <p>* <b>Retention</b> count is number of enrollments with grade of A,B,C,D,F,PNP ,I*,IPP,INP,FW</p>



# How many words are there in this quote?

Everything that can be counted does not necessarily count; everything that counts cannot necessarily be counted.

- Albert Einstein



Growth?

Satisfaction?

Success?

Data Complexity

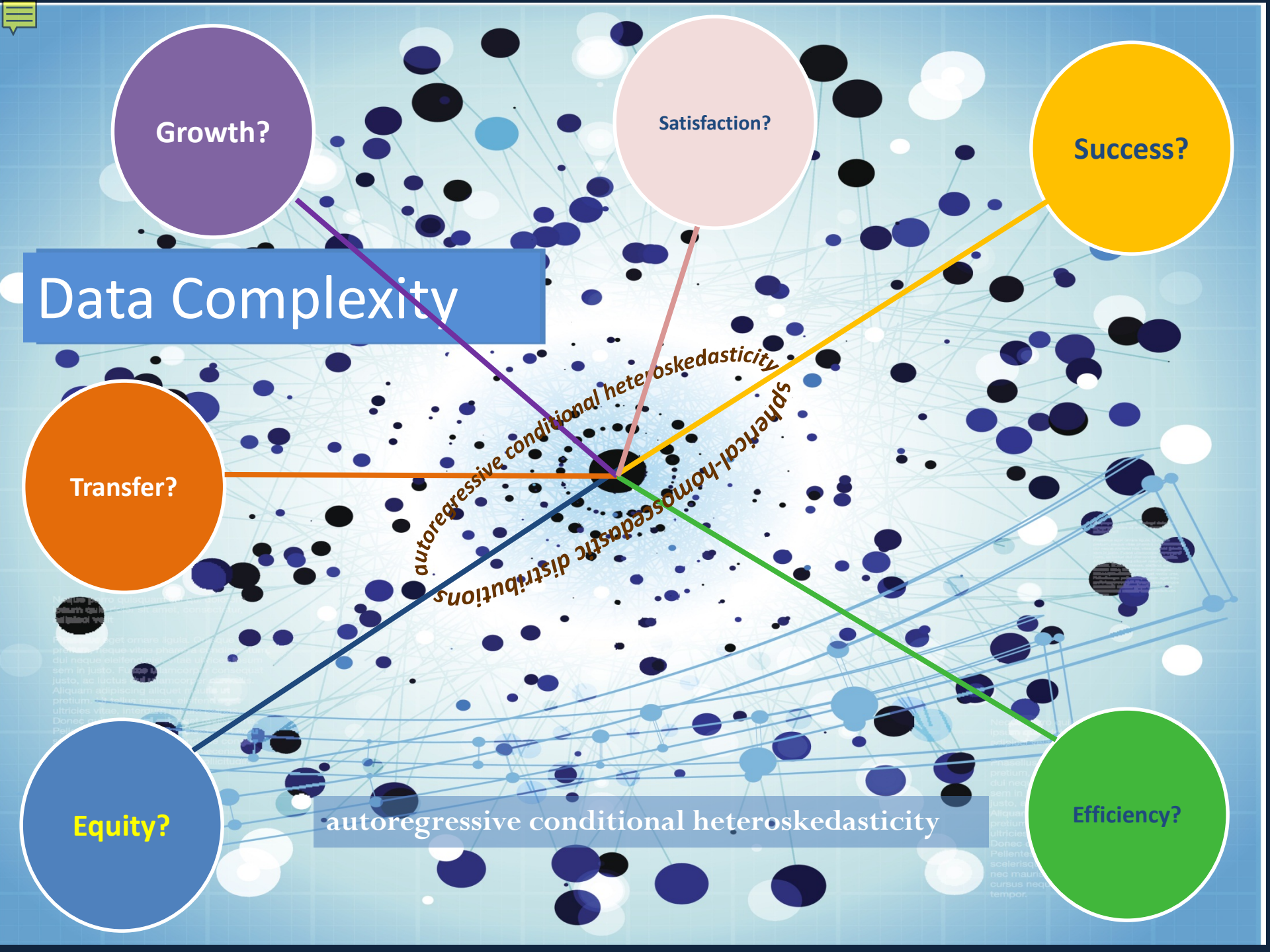
Transfer?

Equity?

Efficiency?

autoregressive conditional heteroskedasticity  
spherical homoscedastic distributions

autoregressive conditional heteroskedasticity



Many different ways of  
looking at data

**150 Data elements**  
**4 Units**





## Data Elements and Units of Analysis

$$P = \frac{n!}{(n - k)!} = \frac{150!}{(150 - 4)!} = 486,246,600$$



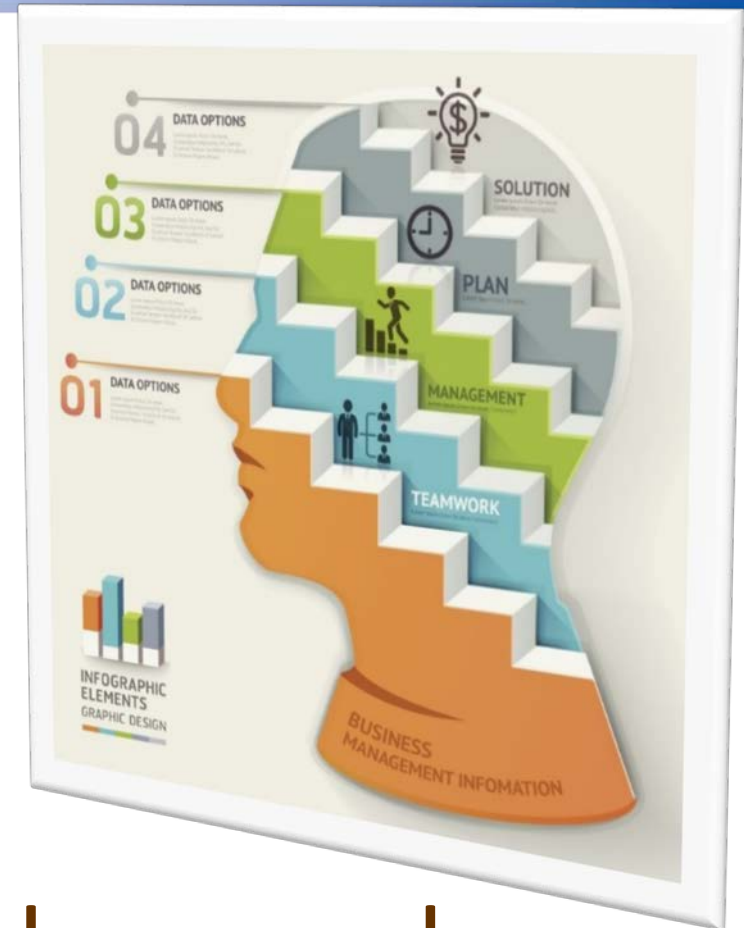
$$C = \frac{n!}{(n - k)!k!} = \frac{150!}{(150 - 4)!4!} = 20,260,275$$

# Making Decisions

- Data
- Make sense of data
- What is missing?

Data without a  
context is pretext

...can also be meaningless, useless,  
and misleading.







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*Thank  
You!*

*Questions?*