



# ROOT CAUSE ANALYSIS

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# Case 1

- At UHD, students absolutely refused to use student e-mail system
  - <30% said the best way to get in touch with them was through Gatormail
  - 70+% said they preferred their personal e-mail
  - 40% said they opened their GM < 1 time a semester
- Creates Problems
  - FERPA issues
  - Important information is lost, ignored, etc.
  - No way to systematically communicate with the student body

# Our assumption and solution

- Assumed: If they only knew GM they would love (and use) GM.
- Solution: **Drive** student use (based on the “Nudge” theory)
  - Introduced GM in orientation
  - Tied it to all critical systems (FA, Bb, Reg, wait-listing, etc.)
  - Strongly encouraged faculty to use GM
  - NAG

# Result

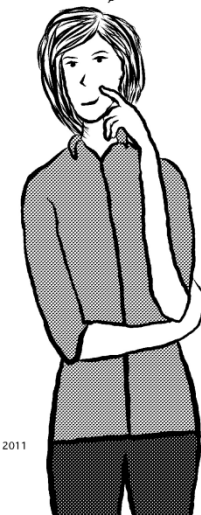
- At UHD, students absolutely refused to use student e-mail system
  - <30% said the best way to get in touch with them was through Gatormail
  - 70+% said they preferred their personal e-mail
  - 40+% said they accessed Gatormail <1 time a semester

**NOTHING CHANGED**

# What should we have asked?

- Data give us the **what**  
(70% preferred personal e-mail)
- We failed to ask the **why**.

Why is it that a great idea takes so long to implement whereas really stupid ideas take hold immediately?





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# The why:

- *"GatorMail is a great way to not get a hold of me until a month or two later..."*
- *"Would like to be able to set up own e-mail client to use gatormail address. Also - "gator" feels juvenile and unprofessional. So: would like to be able to check, download, sort & organize, read & reply an @uhd.edu student account along with my other personal and business e-mail accounts (within the same client) - as well as have web access when having to use a public device."*

- 
- *“Gator mail is useless, fire IT department **PLEASE**. Design a simple to use, large email for UHD and people will start using.”*
  - *“I wish there were more choices about the types of emails sent. I feel I spend a lot of time deleting the bulletin email. I would prefer to have emails that pertains to my degree or department sent to me,” complained one student.”*



*"It aggravates me that UHD allows solicitors access to Gatormail. I receive more junk mail than I do from the university."*






# Solution 2.0

- Software Issue: Either need a new system or we need to fix what we have
  - AND
- Policy Issue:  
Address the spam problem





Root Cause Analysis: An interactive method of problem solving that:

- **Systematically** identifies the range of potential causes
- Uses data to **test** the validity and **weigh** the impact of each potential cause
- Targets solutions at the **validated** causes which have the **greatest influence** on the phenomena

# When we don't ask the why:

- We waste time
- We waste resources
- We don't fix the problem
- We frustrate our colleagues & students
- We destroy the collegiality within our communities of practice

# A (lightening) quick trip through RCA

- Part 1: Defining issues
- Part 2: Identifying possible causes
- Part 3: Using Data to Validating & Weighting Causes
- Part 4: Finding solutions
- Part 5: Implementation  
iteration

refinement





sustainment



# Part 1: Articulate the issue

A problem is:

- a deviation from a requirement or expectation;
- when "actual" is different from "should";
- an undesirable event, situation, or performance trend; and/or
- the primary effect critical for a situation to occur.



		Example
a deviation from a requirement or expectation;		Faculty are not posting their syllabi as required by state statute
when "actual" is different from "should";		Pass rate for demographic A is 70% but pass rate for demographic B is 30%
an undesirable event, situation, or performance trend;		Enrollment is trending downward
the primary effect critical for a situation to occur.		We don't retain students so our grad rates are low .

- 
- Clearly articulate the problem and keep it visually in front of the group as you work
- 

# Well-articulated problems:

- Focus on the gap between what is and what should be
- It states **what is wrong, not why** it is wrong.



# Other characteristics

- It is measurable.
  - States how often, how much, when.
  - Avoids broad generalizations
  - Avoids ambiguous descriptors like “bad morale,” “low productivity,”

-If we state measurable language, we can measure progress toward the solution (assessment/success criteria).



-Forces us to see if we really do have a problem

# Characteristics cont.

- Avoid "lack of" and "no" statements which imply solutions
  - "Infant mortality has increased by 7% over the last 5 years due to a lack of food"
- It highlights the significance of effects.



# Shaping the conversations

-  Set a time limit
  - Keep people focused
  - Start with the general statement and refine:
- 

# Students don't pass English

When                      When don't they pass?  
(Long/short/summer semester? F2F?  
Online?)

Where                    Specifically where are they not passing  
(DE, 1301, 1302?)

Who                      Who is not passing? (FTIC, Dev Ed,  
Transfer, math majors?)  
\*Focus on large cohorts

How Much              The quantitative part: How many are  
How Many              not passing?

# Well-defined issue statements

- 72% of TRANSFER students failed the university writing exam, thus delaying graduation.
- 60% of ALL Eng 1302 students do not pass on their first attempt, driving up time to degree, cost of education.
- 70% of student prefer to communicate with the University through their personal e-mail account making it difficult to communicate important information with the student body.

## 2. Identifying the *why*

- Structure
  - Make sure you have the right folks in the room
  - Place a time limit on the discussion
  - Have the issue statement posted for the group to view

*Most difficult step*

## Strategies

May result in finger-pointing

Facilitator must build trust

- set a collegial tone
- set ground rules
- presume competent colleagues
- focus on fixing PROCESS not people
- keep the torches and pitchforks in check
- seek insight from/validate the contributions of those closest to the problem






	Strategies
May have to let go of assumptions, biases, etc.	“Suppose a colleague from another institution brought this problem to you, what other causes would you recommend he look given his student demographics?” Challenge biases
May not have a full understanding of the process	<b>Make sure you have some of the right people in the room</b> Ask people to follow up with fact finding
May need multiple iterations to determine the problem	Tell people up front that it sometimes takes a couple iterations Remind them of Edison





# Brainstorming Why

- Have people do an initial data dump on 3x5 cards 1 suspect cause/card  
Working in pairs sometimes helps
  - Pool everyone's cards and sort them into themes for evaluation
  - "Park" suggested causes that fall outside the scope of what the group can control
- 

60% of ALL Eng 1302 students do not pass on their first attempt , driving up time to degree, cost of education .

Hypothesis	Data Needed to Discredit /Validate the Hypothesis	

# Data Analysis & Summary

Hypothesis	Finding	Contributing Factor?	Impact
It's the ADJUNCTS!			
It's the ADVISORS! Students don't meet prereq			
It's the 1302 CURRICULUM!			
It's the 1301 CURRICULUM!			
A pox on the Administration! GRRRR Class size is TOO big.			
It's a POLICY issue: Students wait too long after 1301 to take 1302			

Hypothesis	Finding	Contributing Factor?	Impact
It's the <del>ADJUNCTS!</del>	Pass rate for courses taught by adjuncts $\approx$ pass rate for T/TT faculty	Probably not	Minor
It's the <del>ADVISORS!</del> Students don't meet prereq	F2011 < Almost 100% met prereqs	No (But have we set the prereq correctly?)	
It's the <del>1302 CURRICULUM</del>	90% are successful in subsequent writing classes	No	
It's the 1301 CURRICULUM	68% of students who got an A in 1301 (prereq) failed/withdrew from 1302	Yes	Significant
A <del>pox</del> on the Administration. Class size is <del>TOO</del> big	Avg class size was 19 ACTIVE students in 1302 (F2012)	No	
It's a POLICY issue: Students wait too long after 1301 to take 1302	Average semesters between 1301 and 1302 for D/F/W is .76 Average semesters for A/B/C's .26 semesters	Yes	Minor

# Data Analysis & Summary

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It's the ADVISORS! Students don't meet prereq	F2011 < Almost 100% met prereqs	No (But have we set the prereq correctly?)	
It's the <del>1302</del> CURRICULUM	90% are successful in subsequent writing classes	No	
It's the 1301 CURRICULUM/ ADJUNCTS	68% of students who got an A in 1301 (prereq) failed/withdrew from 1302	Yes	Significant
It's a POLICY issue: Students wait too long after 1301 to take 1302	Average semesters between 1301 and 1302 for D/F/W is .76 Average semesters for A/B/C's .26 semesters	Yes	Minor

# Data begets the need for more data

- Before you identify a solution, be sure you understand the scope of the cause
- What is taught in 1301?
- How does 1301 curriculum mesh with 1302?
- How proficient are students at the end of 1301? Is that enough?
- Who is teaching 1301?
- Do any of the 1301 faculty have greater success? What do they do/teach different?

# Carefully tie intervention to cause

Not so well-tied:

- Bad 1301 curriculum -> fire the adjuncts!

Better:

- Bad 1301 curriculum ->
  - hire a curriculum specialist to align 1300 to 1301 to 1302
  - establish a community of practice among 1301 faculty to help implement/learn the new approach
  - nurture your adjuncts
  - rotate 1301 and 1302 teaching assignments so faculty understand exactly what students learn over 2 semesters of writing.

- 
- What should we consider when identifying a solution?



# Last thoughts on solutions:

- Is the solution doable:
  - within the climate/culture?
  - given available resources?
  - given available expertise?
- Is the solution scalable?
- Can the solution be implemented with a defined level of consistency
- Will the solution have broad impact?
  - In other words, is the solution robust enough to move the dial?

# Implementation

- Lay out a step by step process with timeline
- Establish regular meetings to review progress
- Identify responsible parties
- Hold people accountable
- Identify/secure needed resources
- Define your measures
- Charge a well organized colleague with monitoring assignments and progress
- Stay focused - don't dawdle

Task	Responsible Party	Completion Deadline	Notes	

### Modified Gantt Chart

	Responsible Party	Sept	October	Nov	Dec	Jan	Feb	March	April	May
Task 1				due date:						
Task 2					due date:			due date:		
Task 3						due date:				
Task 4							due date			

# Implementation cont.

- Pilot/Review/Implement Broadly
- OR
- Implement Broadly

To have any measurable impact, the strategy must be broadly and consistently implemented


# A Short Case Study


- In early 2006, a college was interested in increasing the number of first-gen students transitioning directly from high school into college-level courses.
- A bridge program was designed to help students make the transition.



# The “What”

Less than 20% of interested Seniors tested college ready in math.





College faculty believed that poor math performance was the result of:

“Students were lazy.”

“HS faculty did not teach well”

“HS curriculum was poorly designed”

“Students didn’t take the placement test seriously.”

“Placement test was not appropriate for high school students.”

# What we thought was the “why”

## -HS faculty

- are poor quality
- are poorly educated
- don't assign homework because they are lazy and they know the students won't do it.
- dumb down the curriculum.


-HS curriculum is out of step with what we require.







# Our solution:

- College faculty would hold professional development for the HS math faculty....
- 

## Are you lonely?

Tired of working on your own?

Do you hate making decisions?

### HOLD A MEETING!

*You can –*

- See people
- Show charts
- Feel important
- Point with a stick
- Eat donuts
- Impress your colleagues

All on company time!



## MEETINGS

THE PRACTICAL ALTERNATIVE TO WORK

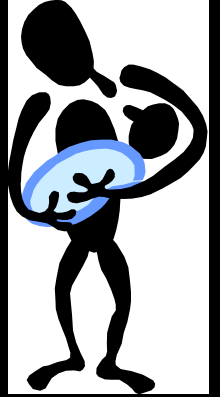
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# The real “why”

- Students were only required to take 3 years of math in HS.
  - They thought that was all they needed
  - Their parents thought that was all they needed – *surely* if they needed more, someone would have said something?
  - So students only took 3 years of math


# Captain Hindsight

- Where we got it wrong:
  - Presumed to know HS faculty credentials
  - Presumed we knew HS homework assignments/tests/tests
  - Failed to speak with any HS faculty
  - Set foot on a HS campus



**Captain Hindsight**

With his sidekicks, Shoulda, Coulda, and Woulda



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