Mark attendance at ignite.byu.edu/cbe400/lectures

A woman books a flight to London in the morning, makes reservations in New York for lunch and buys *Cirque de Soleil* tickets in Vegas for an 8 p.m. show—all for the same day. How will she make it to each of these places in time?

George is unemployed without a penny to his name. He lives in a mansion he doesn't pay for and has all his needs met. George isn't a criminal, so how does he get away with it?

A man pushes his car until he reaches a hotel. When he arrives, he realizes he's bankrupt. What happened?

A man is condemned to death. He has to choose from three rooms to accept his punishment. The first room has a firing squad with guns loaded. The second room has a blazing fire. The third room is full of tigers that haven't eaten for six months. Which room should he choose?

A man who lives in a 30-story building decides to jump out of his window. He survives the fall with no injuries. How did that happen?

Show and Tell

Taylor
Mackenzie
Ben R

Next week: Justin, William



Michalko

Eight Strategies

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____

Michalko

Eight Strategies

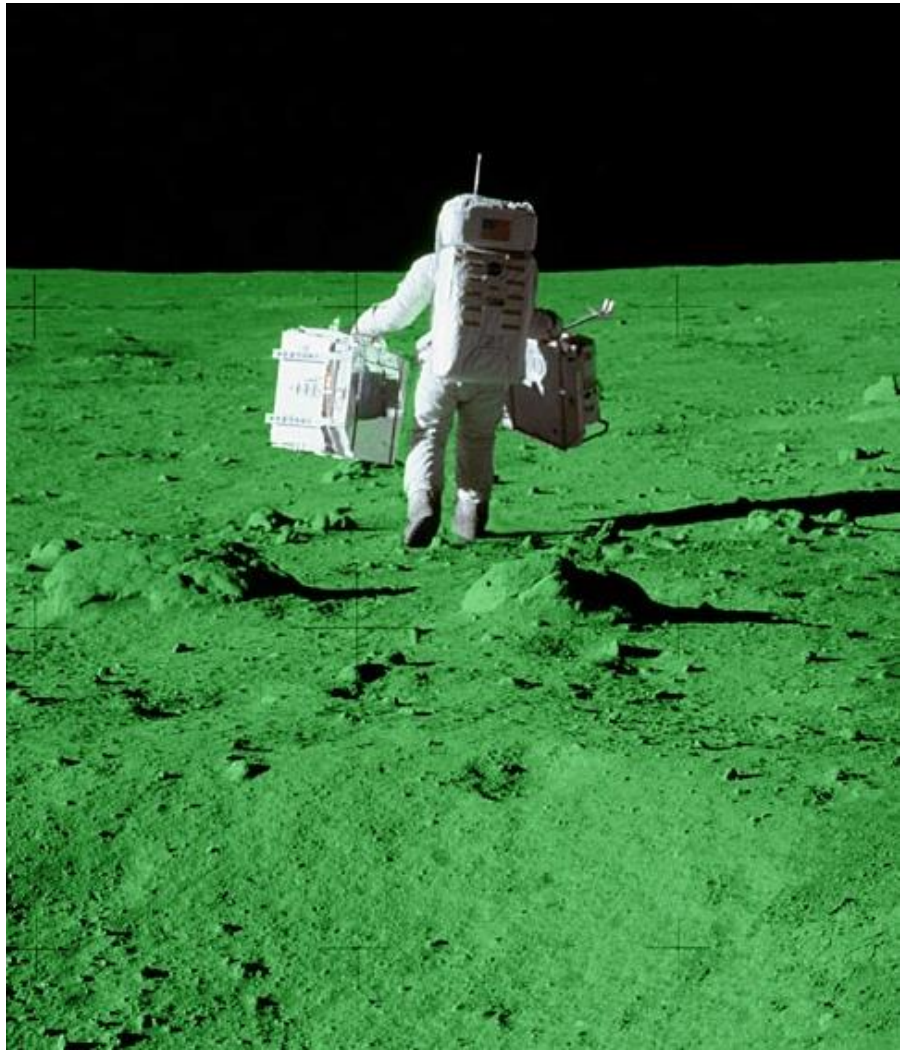
1. Look in different ways
2. Make thoughts visible
3. Produce
4. Make novel contributions
5. Force relationships
6. Think in opposites
7. Think metaphorically
8. Prepare for chance

Theme: open-mindedness

- Considering both likely and nonobvious solutions (halving 13)
- Willingness to consider all approaches, even after finding a promising one

Cromwell's rule

- Cromwell to the general assembly of the Church of Scotland 1650:
  - "I beseech you, in the bowels of Christ, think it possible that you may be mistaken"
- Lindley (statistician): the use of prior probabilities of 0 and 1 should be avoided:
  - Assigning a probability should "leave a little probability for the moon being made of green cheese; it can be as small as one in a million, but have it there, since, otherwise, an army of astronauts returning with samples of the said cheese will leave you unmoved"



“Our heavenly Father is more liberal in His views, and boundless in His mercies and blessings, than we are ready to believe or receive; and, at the same time, is more terrible to the workers of iniquity, more awful in the executions of His punishments, and more ready to detect every false way, than we are apt to suppose Him to be.”

Teachings of the Prophet Joseph Smith, 257-8



Theme: make space for though

- Skinner: when you find something interesting, drop everything else and study it.
  - Keep a notebook handy
    - (this morning I wrote lots of notes on my phone about the SVD)
    - President Nelson
- “Too many fail to answer opportunity’s knock at the door because they have to finish some preconceived plan. Creative geniuses do not wait for the gifts of chance; instead, they actively seek the accidental discovery”
- Be willing to ponder
  - Einstein haystack: “if you ask the average person to find a needle in a haystack, the person would stop when they found a needle; he, on the other hand would tear through the entire haystack, looking for all possible needles.”
  - Think about how we consume information, how we read books.

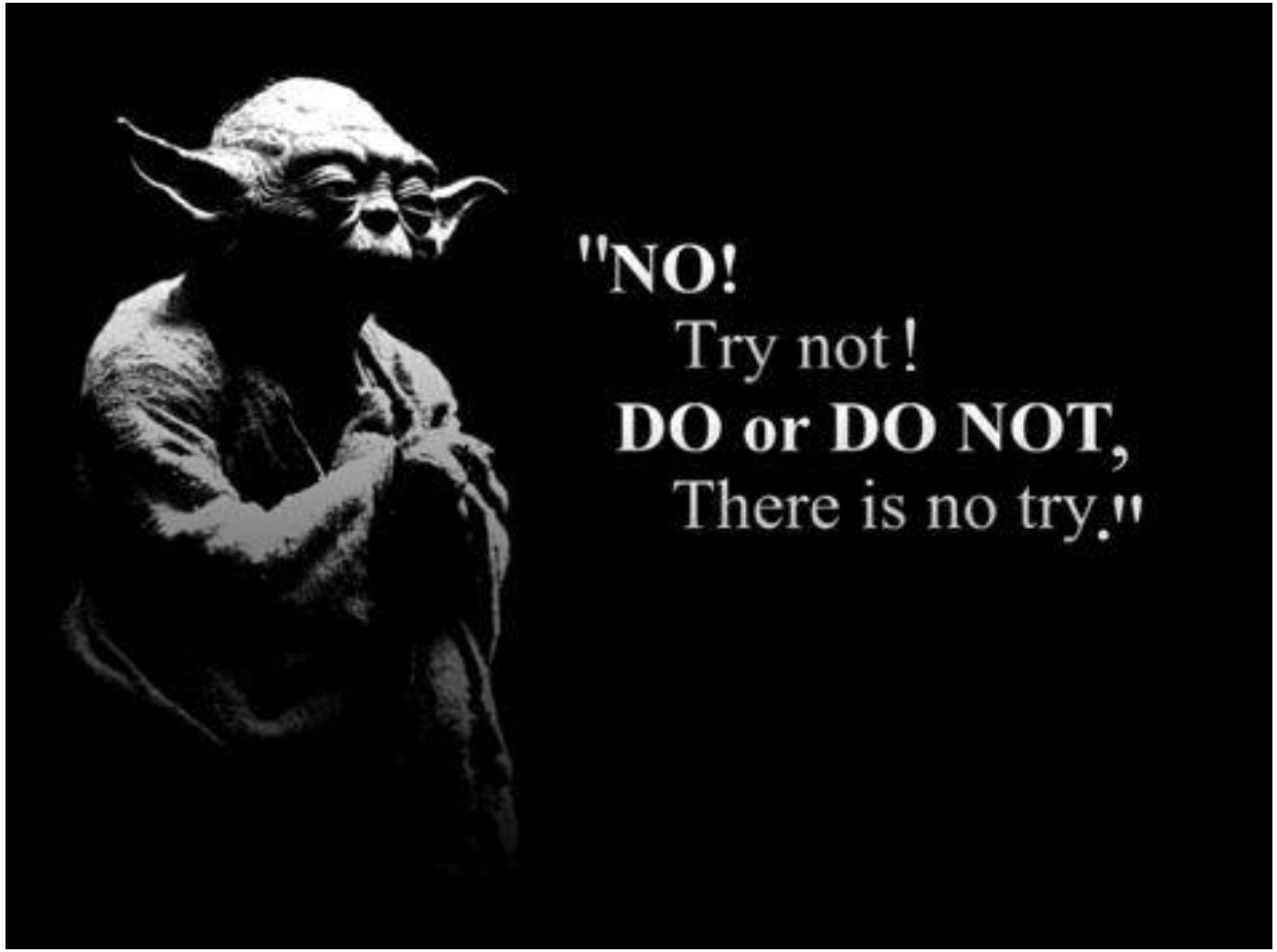

Treat
Yoself

Doing the Work

- Approval
  - Selling it
  - Make the case for change
- Planning
  - Resource allocation
  - Gantt charts
  - Critical path management
  - Coordination
  - Budget
- Carry through
- Follow up



The Champion



Warrior

- Generating an idea is the easy part
- The world of imagination is filled with endless possibilities and boundless resources. The world of action is different

Change is inevitable

Everybody resists change

Examples? Warriors?



Authur Rock: You can walk up to people on the street and ask them if they want to be rich and 99% will tell you, “Sure, I want to be rich.” But are they willing to do what’s necessary to be successful? Not many are.

…A goal not written

(That’s why I haven’t written my goal of running the Wasatch 100!)

Questions

- What's your objective?
- What's your plan?
- How to deal with obstacles?
  - Brute force? Finesse? Surprise?
- What are your resources?
  - Do you have a war chest?
  - Who are your allies?
  - Who are you models? Mentors?
- What sacrifices need to be made?
  - Consequences of failure?

The basic difference between an ordinary person and a warrior is that a warrior takes everything as a challenge while an ordinary person takes everything as a blessing or a curse
—Carlos Cataneda

Deadlines

- ”The ultimate inspiration is the deadline”
- The tradeshow phenomena: “the fact that twice a year, the creative talent of this country is working until midnight to get something ready for a trade show is good for the economy. Without this kind of pressure, things would turn to mashed potatoes.”
  - I’m doing that now as I have a fluids conference to attend in two weeks!

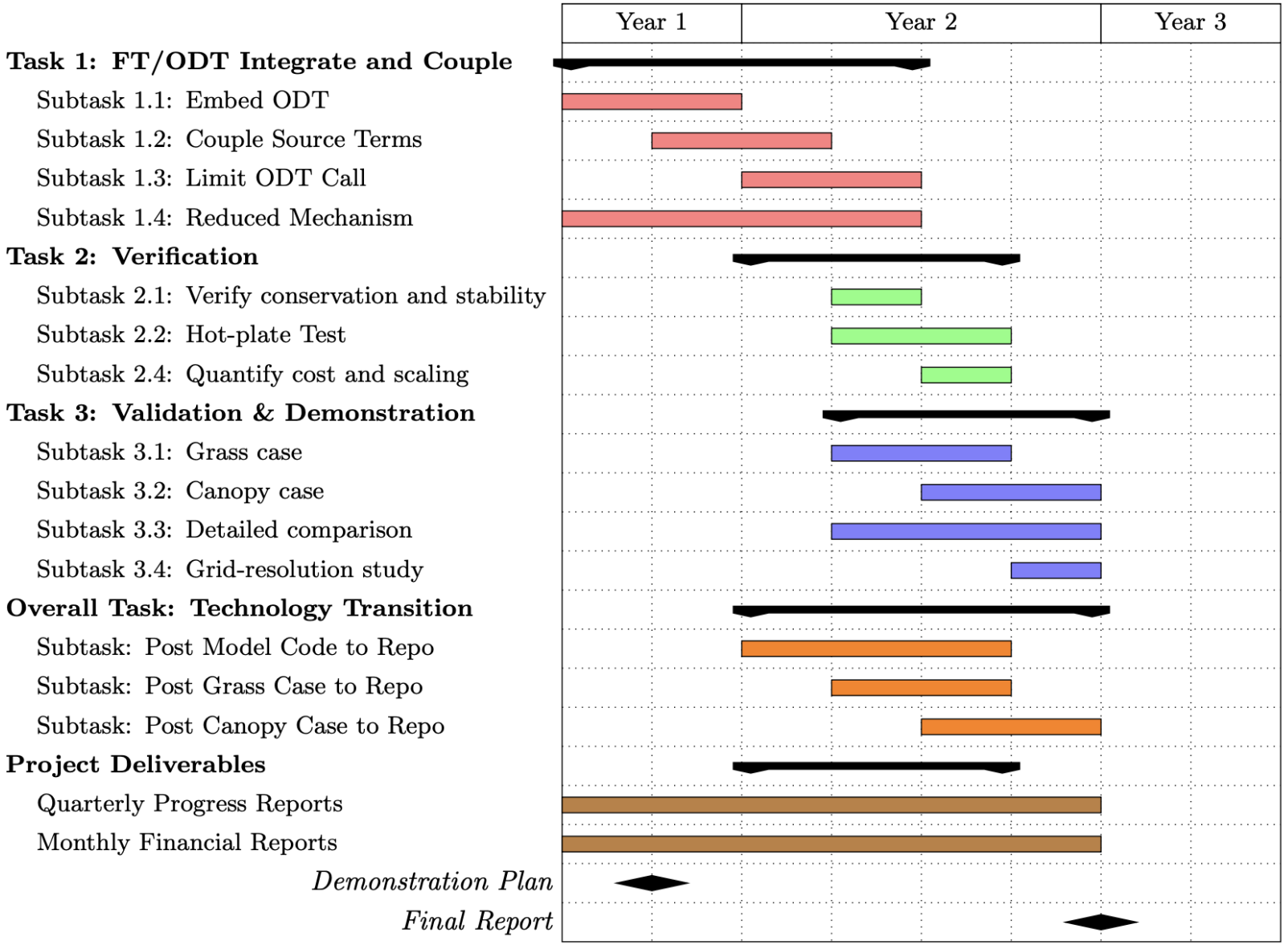
Budget

2026		Use Kuali Research for Accurate Budget Calculations (This tool is ONLY for Approximate Planning Purposes)					
		Period 1	Period 2	Period 3	Period 4	Period 5	Cumulative
	Start Date						
	End Date						
PERSONNEL COSTS							
Faculty Spring/Summer Salary *(populated from p.2)*		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefits @	19.70%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Postdocs/Visit. Fac./Res/Staff		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefits @	21.90%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Administrative Staff Salary		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefits @	36.60%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Grad Students (Contract) (No FICA)		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Grad Students (Contract) (With FICA)		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefits @	7.70%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Undergrad Student (Timecard) (No FICA)		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Undergrad Student (Timecard) (With FICA)		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Benefits @	7.70%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
NON-PERSONNEL COSTS							
Supplies							$0.00
Research Publication Costs							$0.00
Travel - Domestic							$0.00
Travel - Foreign							$0.00
Contract Services - On Campus							$0.00
Contract Services - Off Campus							$0.00
Consultant(s) (populated from p.3)		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Subaward(s) (populated from p.4)		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Graduate Student Tuition							$0.00
Capital Equipment							$0.00
Participant Support Costs							$0.00
TOTAL DIRECT COSTS		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Modified Total Direct Cost Base		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
INDIRECT COSTS	51.50%	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
TOTAL COST TO SPONSOR		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00

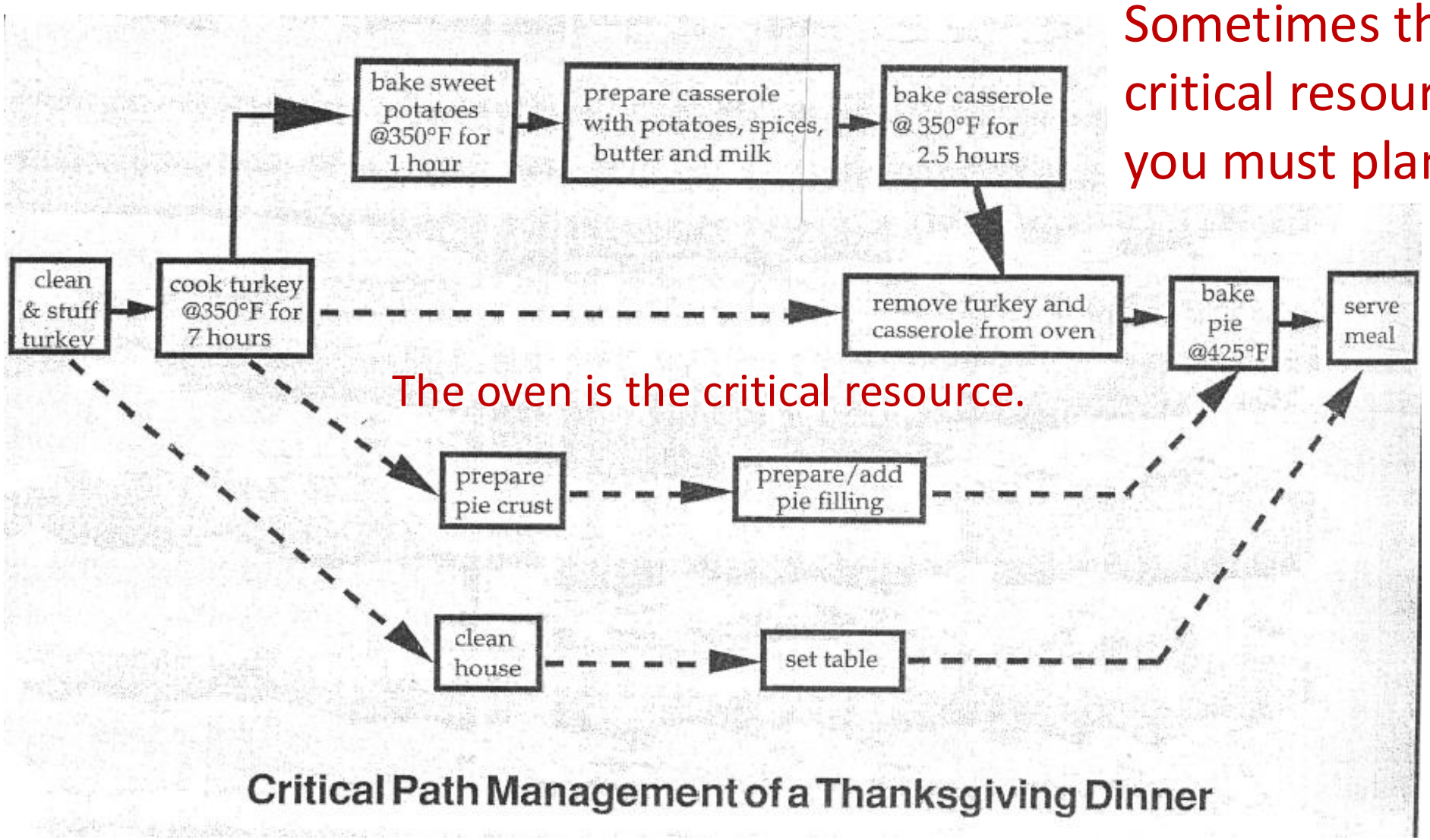
Budget

	Year 1 10/1/26 - 1/31/27	Year 2 2/1/27 - 1/31/28	Year 4 (Contingency) 2/1/28-1/31/29	Total
# months in "year"	4	12	0	
Faculty (D. Lignell) 1/2 summer month	$0	$0	$0	$0
Faculty benefits @ 19.7%	$0	$0	$0	$0
Post Doc	$21,667	$65,000	$0	$86,667
Benefits @ 21.9%	$4,745	$14,235	$0	$18,980
Travel (per person)				
Technical meeting (USNC, Boulder CO, 3 nights, May)				
Registration		$650		$650
Flight		$350		$350
Hotel @ $200/night + 15% taxes & fees		$690		$690
Food; per diem $80/day (travel days @75%)		$280		$280
Parking; $12/day @ airport		$48		$48
Taxi; to and from conference		$100		$100
Personal car miles to and from airport @ $0.725/mi		$66		$66
DoW Burn (Eglin or Fort Stewart)				
Registration		$0		$0
Flight		$550		$550
Hotel @ $200/night + 15% taxes & fees		$450		$450
Food; per diem (travel days @75%)		$224		$224
Parking; $12/day @ airport		$48		$48
Rental car		$250		$250
Personal car miles to and from airport @ $0.725/mi		$66		$66
Overhead @ 51.5%	$13,602	$42,749	$0	$56,351
Total	**$40,014**	**$125,756**	**$0**	**$165,769**

Gantt Chart


Year 1
Year 2
Year 3
Task 1: FT/ODT Integrate and Couple
Subtask 1.1: Embed ODT
Subtask 1.2: Couple Source Terms
Subtask 1.3: Limit ODT Call
Subtask 1.4: Reduced Mechanism
Task 2: Verification
Subtask 2.1: Verify conservation and stability
Subtask 2.2: Hot-plate Test
Subtask 2.4: Quantify cost and scaling
Task 3: Validation & Demonstration
Subtask 3.1: Grass case
Subtask 3.2: Canopy case
Subtask 3.3: Detailed comparison
Subtask 3.4: Grid-resolution study
Overall Task: Technology Transition
Subtask: Post Model Code to Repo
Subtask: Post Grass Case to Repo
Subtask: Post Canopy Case to Repo
Project Deliverables
Quarterly Progress Reports
Monthly Financial Reports
Demonstration Plan
Final Report

Thanksgiving



Critical Path Management of a Thanksgiving Dinner

Sometimes there is a critical resource that you must plan around.

The oven is the critical resource.

Deployment chart

Deployment Chart for the Web-Site Development Project

Task	Team Member		
	Melinda	John	Web Programmer
Determine needs			
Register site name			
Develop initial layout			
Review with customer			
Develop content and graphics			
Contract with ISP			
Revise and fine tune			
Site goes live			
Follow up and update			
Evaluate			