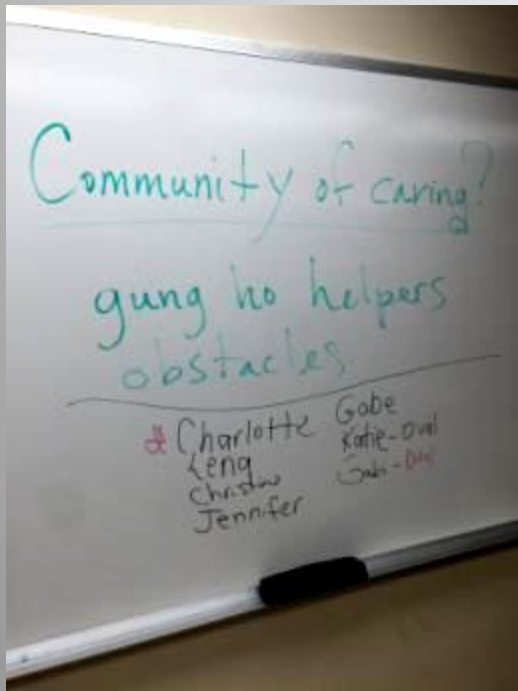


Classroom-based research experience in a non-majors core course: a successful strategy



Research Project Assignment - Data Sheet
Due Wednesday, October 16 (10 points)

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Tulsa Community College

Day going a-rye?



Let us help you!

Semester-long course-based projects with non-majors: transformative for students, challenging for faculty

Undergraduate research experiences are known to increase student confidence – a critical component to success for underrepresented minority and first-generation college students

3 major challenges for faculty:

1. Large differences in students' prior preparation/skill sets
2. The need to "cover course material" – course outcomes
3. Project conception, scheduling, directing, assessing

Challenge 1: Differences in prior preparation and getting student “buy-in”

Strategic solutions

Day One: set them up for success

1. Clear and high expectations in syllabus and in person
 - give students ownership
2. “Post” your passion
 - introduction exercise
 - your response

Make diversity a strength

Day Two and beyond: Allow students to self-assort in groups by passion – creates camaraderie, group ownership and support network

Recognize that many students will still earn the grades they would earn if not in a project-based course, but that the experience will be important and retention may be higher

Challenge 2: The need to cover course material – course outcomes, textbooks, and the like

Strategic solutions

1. Schedule course as one day/week
 - allows for both lecture and project work in the same session
 - allows for easier incorporation of outcomes into project work
2. Use your web-based LMS
 - **post and receive assignments, communicate, “flip”**
3. Take-home exams
 - **make students responsible for material you don't cover**
 - allows you to connect project work with course material
 - student feedback indicates good grasp of outcomes
4. Make the textbook a jumping off point for the research

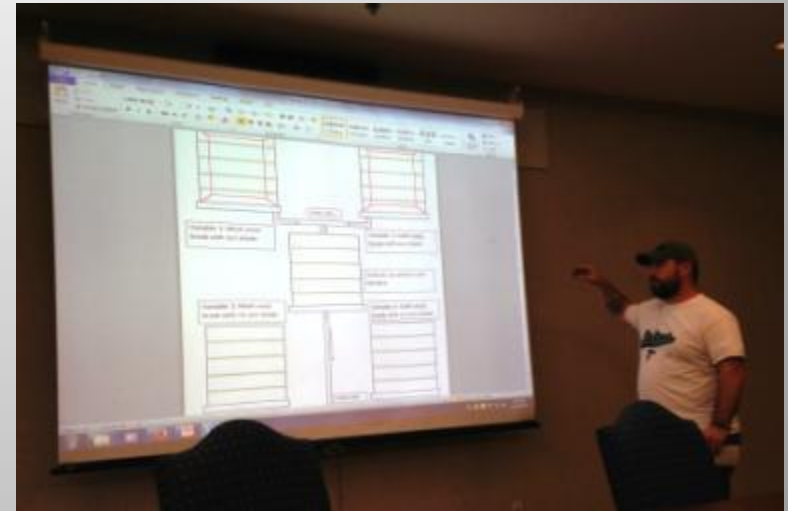
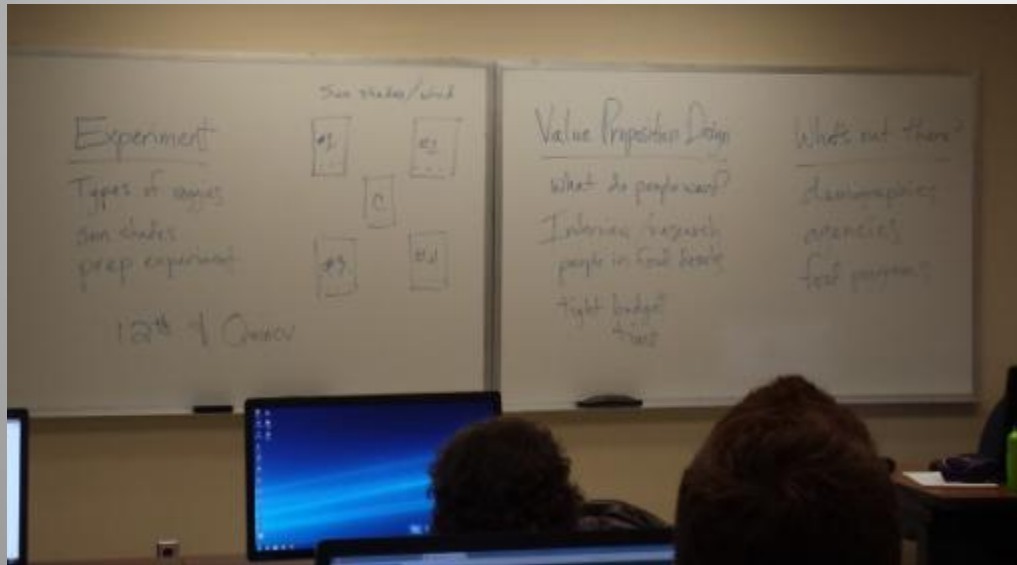
Strategic solutions – sample course schedule

TENTATIVE! HONORS NUTRITION COURSE SCHEDULE – Fall 2015

Changes to this schedule will certainly be necessary. Changes will be announced in class.

Day	Topic	Chapter
Aug 19	Syllabus Intro to Nutrition and the semester	1
Aug 25	Healthy Diets Project talk	2
Sept 2	Digestive System and Digestive Disorders	3
Sept 9	Carbohydrates / Nutrition and Diabetes	4, 5
Sept 16	The Lipids Project field trip	6
Sept 23	Lipids in Health and Disease American Eaters	7
Sept 30	Project Research Day	
Oct 7	Protein	8
Oct 14	Food for Thought Project Field Trip	
Oct 21	Plant-Based Diets Vegan for a day/week/month/life??	9
Oct 28	Project data/work wrap-up	
Nov 4	Energy Balance and Obesity Fitness and Sports Nutrition	15 16
Nov 11	Data analysis; putting it all together	
Nov 18	Food Safety and Security Project finishing touches	20
Nov 25	Thanksgiving Holiday – No Class	
Dec 2	Project Presentation/Service Learning Day	
Dec 7	My Food Culture Assignment due	

Challenge 3: Project conception, scheduling, directing, assessing, **completing!**



	Real Name	Last Name	Communication	Follow through	Leadership	Involvement or initiative activity	Work quality	Event day
1	Michael							
2	Elyseann							
3	Berkeley							
4	Nina							
5	Blaine							
6	Chilly							
7	Mia							
8	Dimitry							
9	Loren							
10	Shawn							

Identifying healthy whole grain breads in local grocery markets:
accessible and affordable

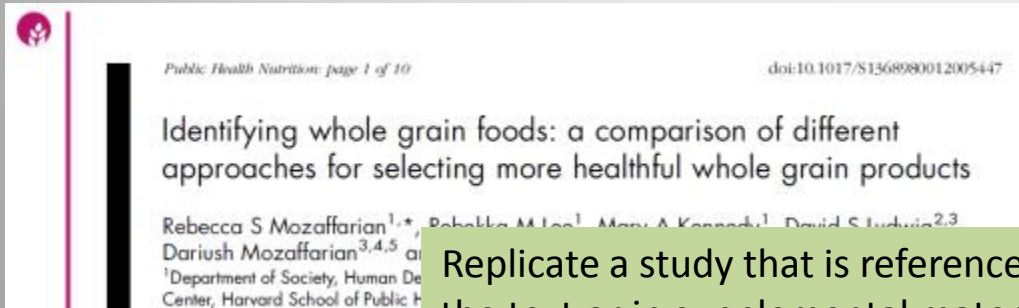
¹Tulsa Community College, Metro Campus, Honors Nutrition Class, Fall 2013, 909 South Boston Avenue Tulsa, Oklahoma 74119; ²Department of Science and Mathematics, Tulsa Community College, Tulsa, Oklahoma

Abstract

Objective: Eating healthy whole grain breads are recommended for health, but there is conflicting thoughts that whole grain breads are not affordable or accessible. Conflicting advertising and marketing limit the ability for healthy whole grain choices to be recognized by

Strategic solutions – Topic ideas

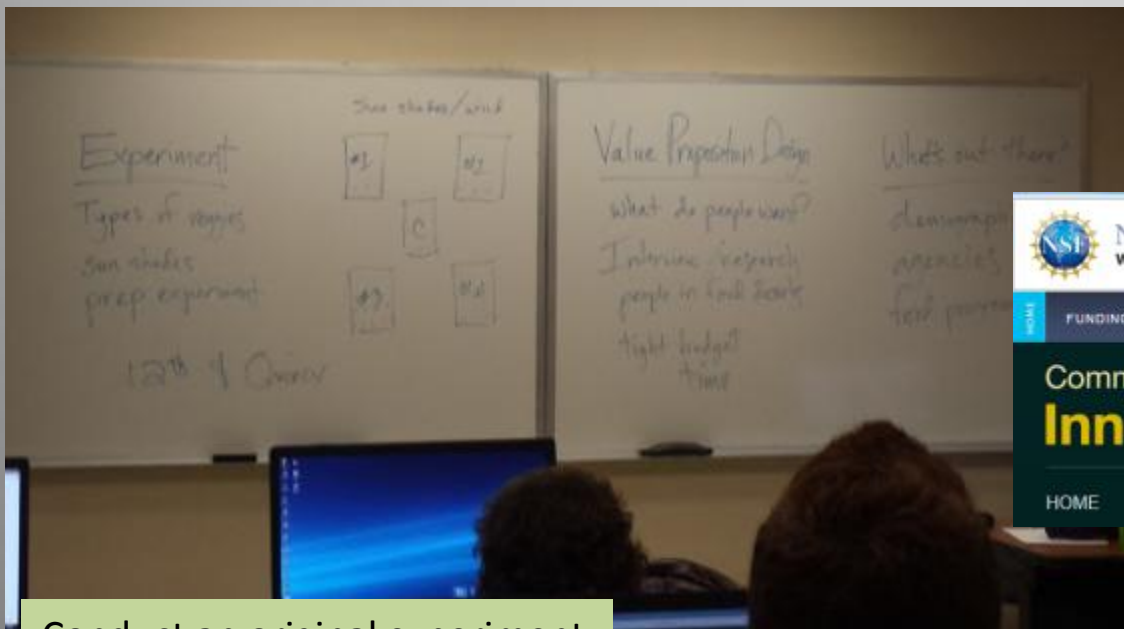
ONLY choose topics/projects that YOU have interest in; otherwise, it will be a very long semester for you. . .



Replicate a study that is referenced in the text or in supplemental materials



Use research results to create an educational product



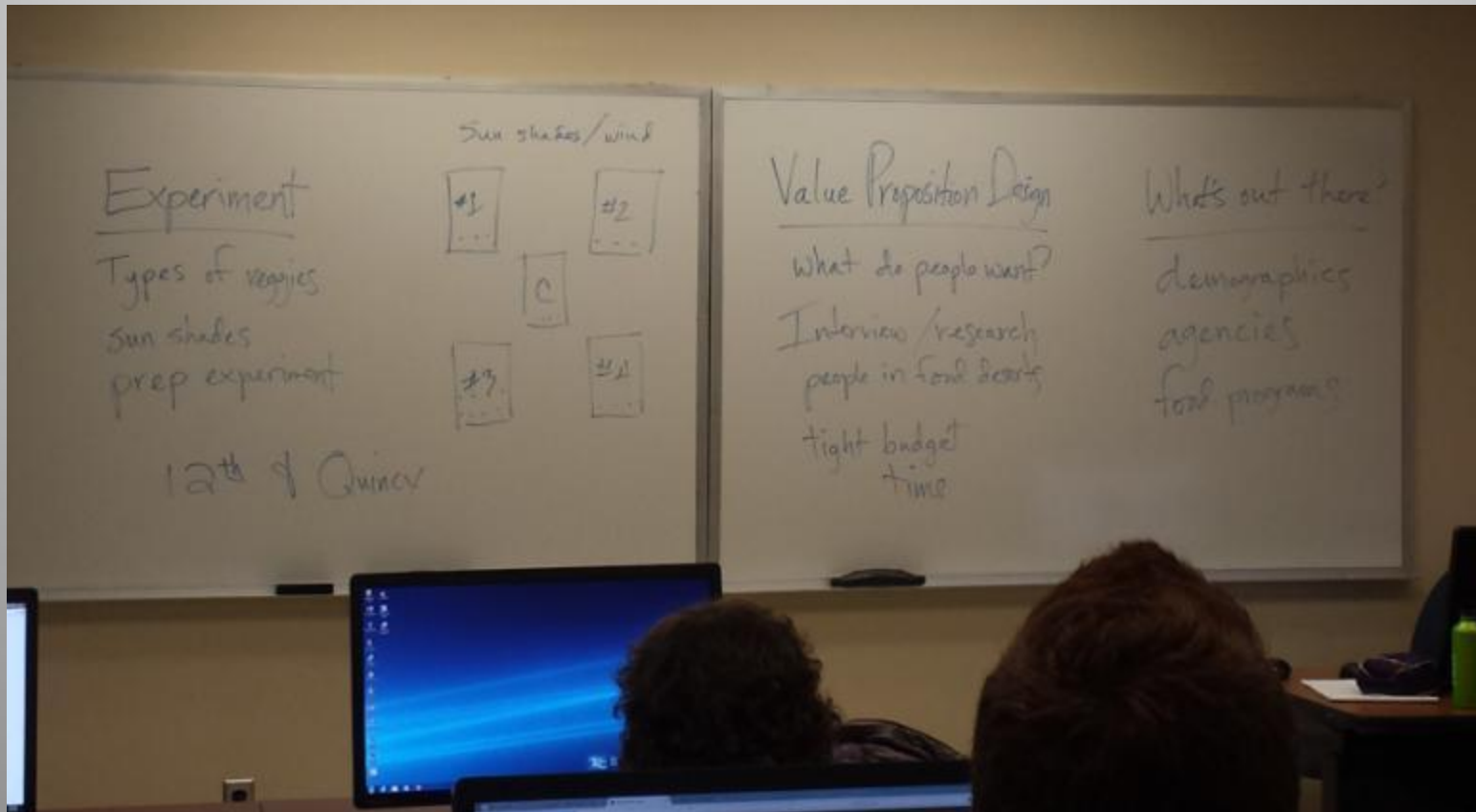
Conduct an original experiment



Write a grant proposal or enter an academic competition

Strategic solutions – Question/action development and group assignment

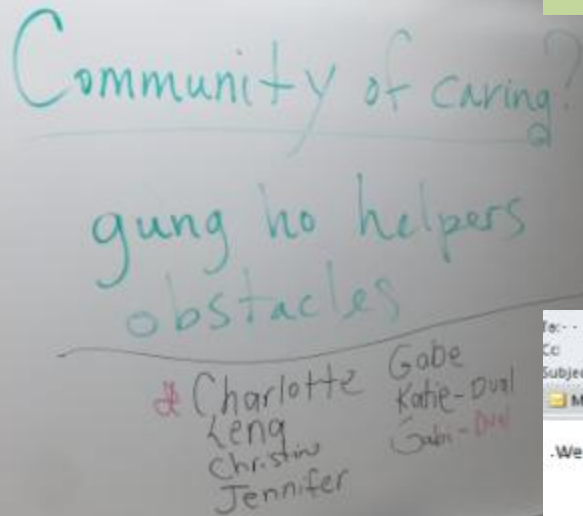
Step 1: Class discussion of possible projects and/or focus, faculty led



Strategic solutions – Question/action development and group assignment

Step 2: Student assortment into teams – leave the room and let them go

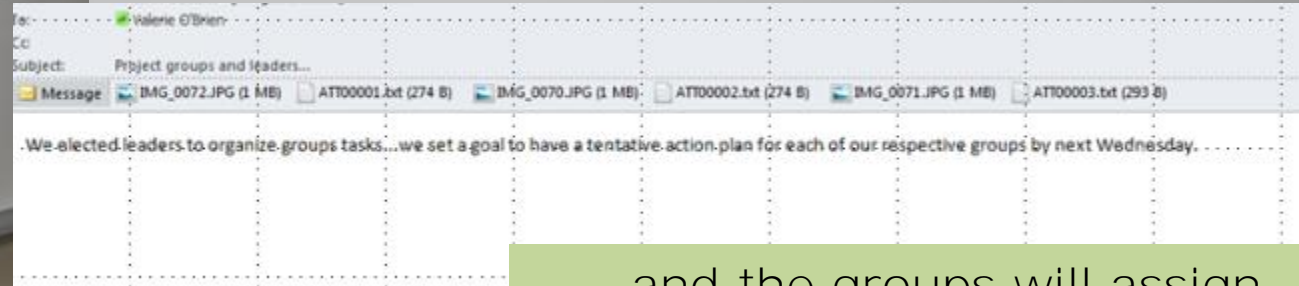
Leaders will arise spontaneously, and groups can form according to passions and majors



Community of caring?
gung no helpers
obstacles

Charlotte
Leng
Christin
Jennifer

Gabe
Katie-Dual
Gabi-Dual



... and the groups will assign themselves homework

Use Discussion Boards in LMS to get groups going and assess participation

Strategic solutions – “How will you assign us a grade?”

Total points possible = 200

- ~ 50 are graded assignments during the semester

Honors Nutrition (BIOL 1383) – Fall 2013

Research Project Assignment – Data Sheet

Due Wednesday, October 16 (10 points)

Good data sheet design is critical for any project requiring data collection. Data sheets are necessary at the start of a project, and can undergo revision; however, a well-thought through, complete data sheet provides consistency across groups and keeps errors in data collection to a minimum.

Create a data sheet, with columns, for use in data collection in the bread project. You can use the bread bag experiment data sheet to give you ideas on structure. Keys to good data sheets include: readability from left to right, preferably in order of data collection, clear column headings, a place for scientist names, store name, date, and what the sheet is for at the top, and a place for “notes and observations”.

This can be done in Microsoft Word or Excel. If you need help with fundamentals of Excel, let me know and I'll walk you through that. The data sheet will be due at the beginning of class next week. It should have the following minimum column headings:

Brand/Name

Honors Nutrition (BIOL 1383)

Weekly Project Reports (10 pts each) – Due November 5, 12, and 19

Answer the following questions

- 1) What team are you on? Who else are you working with on that team?
- 2) What was your assigned task? Completed? Why/why not?
- 3) What did you do?
- 4) How did you do it?
- 5) What did other members of your team do?
- 6) Any issues or problems arise?

Examples

Bread Project Data - Elizabeth and Cheryl										
Brand/Name	Shelf Position	Price	Package	Slices	Weight (g)	Serving weight	Total CHO	Total Fiber		
Cobblestone Mill 100% Whole Wheat	R T	3.59	Y	14	454	1	32	14	2	
Cobblestone Mill Rye	R T	3.59	N	14	454	1	32	15	1	
Cobblestone Mill Sourdough	R T	3.59	N	14	454	1	32	16	-1	
Great Value Wheat Sandwich	WL B	1.38	N	24	680	1	28	14	-1	
Great Value Whole Grain White	WL B	1.68	Y	20	567	2	57	27	2	
Great Value 100% Whole Wheat	WL B	1.58	Y	20	567	1	28	13	2	
Great Value Round Top White	WL B	0.98	N	20	453	2	45	25	-1	
Great Value Texas Toast Thick	WL B	1.58	N	17	680	1	40	20	-1	
Great Value Wheat with Honey	WL B	1.68	N	20	567	2	57	28	2	
Great Value White Sandwich	WL B	1.28	N	24	680	1	28	14	0	
Home Pride Butter Top White	WM T	2.99	N	22	567	1	26	14	0	
HomePride Butter Top Wheat	WM T	3.29	N	22	567	1	26	13	-1	
HomePride Butter Top Wheat	R M	3.29	N	22	567	1	26	13	-1	
HomePride Butter Top White	R M	2.99	N	22	567	1	26	14	0	

Strategic solutions – “How will you assign us a grade?”

~ 150 points is either research paper or product/productivity

Project Rubric (3) [Read-Only] - Microsoft Excel

Project Rubric (% of total; points possible for each)												Total 150 points possible	
%	10	10	20	10	10	30	10			Total possible			
Pts	15	15	30	15	15	45	15			Total points	%		
Student Name	Communication	Follow through	Leadership	Innovation	Scholarly activity	Work quality	Final wrap-up						
ricia	15 Postings on BB; contact with partners; calls to team	14 Talked to home depot mgr., followed up; provided info in a timely manner	30 Responsive to requests; active on BB encouraging other team members	13 Thought in creative ways about partner possibilities	12 Planting ideas incomplete; not enough data	40 Provided some lists; not enough written out or discussed about planting				124	82.67		
is	15 Postings on BB; contact with partners; calls to team; talking to	15 Contacted CP; got signed agreement; provided study design when requested; completed all tasks	30 Actively lead project group; provided feedback to numerous groups; proactive	15 Most active in study design; pushed for new ideas; expressed continual	15 Created ppt and doc of study design; researched rooftop gardens; collaborated with	40 Continually brought energy and concern to the project; interested in high				130	86.67		
ett	9 No posts to BB discussion; class communication indicated low/no	12 Had several meetings with Goodwill; had some trouble "finishing" the work - lack of conclusions	15 Strong - in feasibility discussions - in the beginning of the semester but tapered at the end	10 Started strong, but waned as the semester went on; when idea for	10 Can't document any, though the capacity was shown in early discussion	34 Work that was done seemed to be appropriate and thorough; nothing	15		105	70.00			
get	15 Faithfully communicated progress, requests, and information to team members	15 Carried out, in a timely fashion, the task; always met deadlines	28 Team player; responsive to comments from team; easy to work with; willing to step up	15 Continually worked to tweak, change, and improve video					73	48.67			
h									0	0.00			
rea									0	0.00			

Strategic solutions – Completing Examples

Want hot buns?



The Knead for Bread

(buns may be room temp)

April 30th 1:30-3:30

Commons Area @ the Metro Campus

#teamwholegrain

Identifying healthy whole grain breads in local grocery markets:

accessible and affordable

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Objective: Eating healthy whole grain breads are recommended for health, but there is conflicting thoughts that whole grain breads are not affordable or accessible. Conflicting advertising and marketing limit the ability for healthy whole grain choices to be recognized by

Lowest Prices			Total	
Pex bins	3/4"x30"	\$ 143.00	7	\$ 1,001.00
Pex	1"x32"	\$ 3.48	20	\$ 69.60
Mesh	12"x18"	\$ 24.90	4	\$ 99.60
aluminum	4"x24"	\$ 46.21	16	\$ 739.36
lattice	4"x8"	\$ 20.87	16	\$ 333.92
Hinges	4" gate	\$ 5.88	30	\$ 176.40
Brackets	corner	\$ 3.12	120	\$ 374.40
1"x12"	18"	\$ 22.87	10	\$ 228.70
4"x4"	0"	\$ 7.47	60	\$ 448.20
3/4 plywood	4"x8"	\$ 47.87	11	\$ 526.57
Season Vegetables	carrot/tomato/green peppers	\$ 1.80	400	\$ 720.00
Pex Tee		\$ 5.23	30	\$ 156.90
double elbow		\$ 2.60	30	\$ 78.00
				\$ 5,530.44

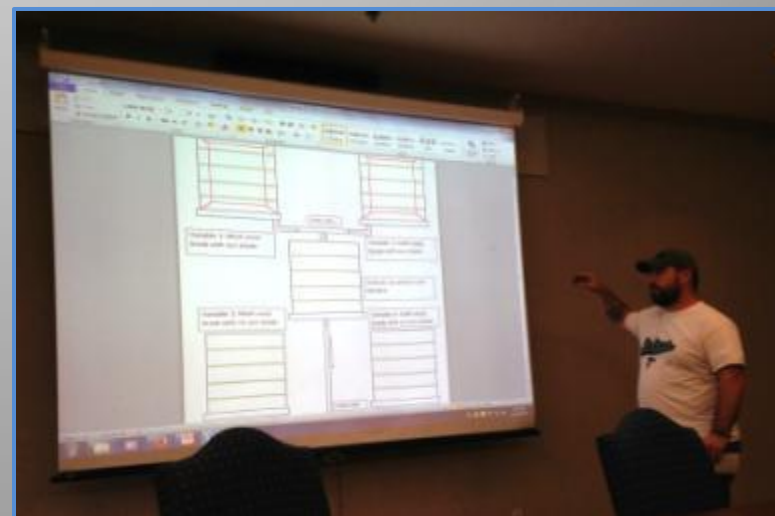
The Many Feats of Whole Wheat

What about gluten?!

Gluten is a mixture of proteins found in wheat, barley and rye. Despite what you believe or hear, people with gluten intolerance should avoid consuming it. But research indicates that those people make up only about 1% of the American population. As for the remaining population, gluten plays an essential role when consumed. In addition, gluten from non-cereal sources (such as soy, lentils, beans, peas, chickpeas, and other legumes) is also a good source of protein. The fact is, gluten is a healthy protein. Adapting a gluten-free diet means giving up the many advantages health benefits associated with eating whole grains.

How much whole grains should I eat?

What is a Whole Grain?



Completing – and beyond!

Former course-based research students have:

- Gone to conferences to present results
- Student organization president
- Featured TRIO student
- Featured EAC student
- Won a national contest!



Student feedback

“It was the hardest class I took and the best class I took.” *Jacob, business major and traditional student*

“I want to thank you for this class. It was way out of my comfort zone.” *Cindy, first generation college student and active introvert*

“I felt like the class could have been more organized and that class discussions should have been more monitored. I was very engaged at the beginning of class but was shut down by other students . . .”

“The project was fun, I learned a lot about being proactive and having to work with a diverse group of **people and backgrounds.**”

Same class, different perspectives

“This class has taught me so much about nutrition and life itself. Students were **free to speak and ask questions.** . . .”

It's always something. . .

What to do about Sequential Learners, Silent Bobs, Sloths, and Snobs?

Post-semester inertia: or, how to keep a project alive?

Can I “spring” a semester-long project on a class, or do they need to know what to expect coming in?

Where to get “seed money” for on-the-spot work?

And??????