THE OHIO STATE UNIVERSITY
DEPARTMENT OF
FOOD, AGRICULTURAL, AND
BIOLOGICAL ENGINEERING

THE OHIO STATE UNIVERSITY EXTENSION
AGRICULTURAL Safety & Health

Extending the teaching mission of a land grant university: Incorporating an interdisciplinary capstone experience with an Extension program

June 27th, 2013

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AGRICULTURAL Safety & Health

Presenter:

Dewey Mann
Lecturer / Research Assistant

Advisor: Dee Jepsen

Overview

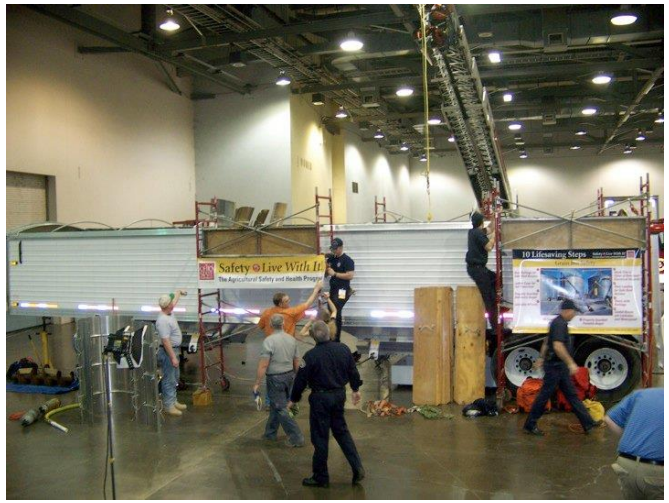
- Extension Project – Grain Safety
- Q2S (Quarters to Semesters)
  - First offering of ASM 4900 – Capstone
- Grain C.A.R.T.
  - Development through a ‘pilot capstone-type’ experience
  - Team dynamics
  - Lessons learned

Grain Comprehensive Agricultural Rescue Trailer (C.A.R.T.)

Extension Project – Grain Safety

- Agricultural Safety and Health (ASH) – Grain rescue and safety awareness project

- Program was limited to grain facilities and the Farm Science Review event



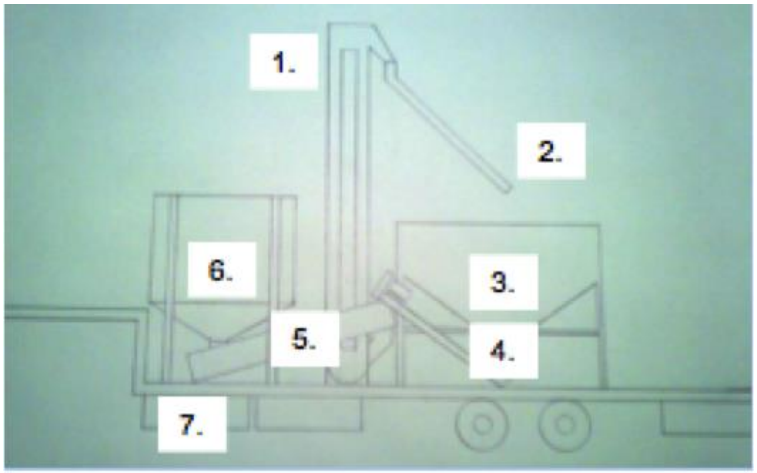
Q2S – ASM 4900 Capstone

- Four Agricultural Systems Management (ASM) students interested in completing a project
  - Previously, no capstone design course offered
- ASM capstone course, offered spring 2013, served as the conduit for discussion in 2012

Capstone Experience

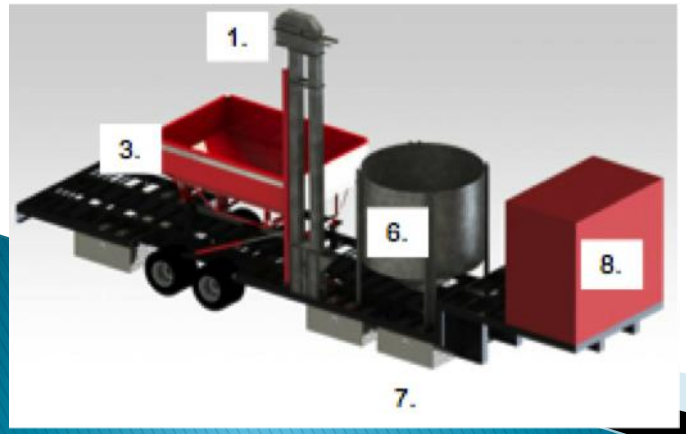
- Students enrolled in ASM 4193 – Individual Studies

- Recruited a Civil Engineering (CE) student
  - Extensive computer design knowledge
  - Student working in the FABE department

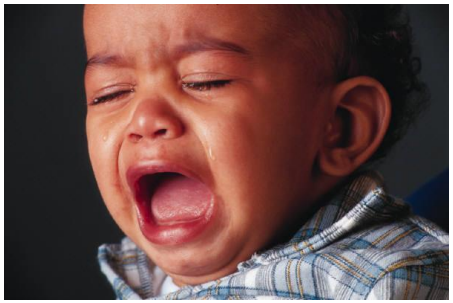


Capstone Experience, Cont.

- Weekly team meetings with academic advisors
- Industry stakeholders meeting (Feb 2012)
  - Consensus building approach



Team Dynamics/Managing Conflict



- Conflict is inevitable
- Students knew each other on a personal level
  - Pro: Informal dialogue on a REGULAR basis
  - Con: Quick to anger
- Communication protocol
  - Weekly meetings, open communication, identification of leaders for specific tasks, and email communication

Industry Sponsor Input

- Face-to face meeting with nine individuals, representing five different organizations
- Contributed an industry balance to the academic input students had been receiving
- Goal was to build consensus
  - Industry partners, academic advisors, and students

Industry Sponsor Input, Cont.

n=13

Item Description	Median Score*	Comments (Quantity)
1. The current design of the trailer will work well	5	Initial design is a great start
2. The 7-foot bin should have a flat bottom (instead of 45°)	2	30° (2), 45° (2)
3. The auger used to transfer grain from the gravity wagon to the grain leg should be 4-inch (dia)	5	[Specific company] can donate if needed
5. Catwalk is only needed around TWO sides of the bin and wagon	3	Around all sides (2), This is yet to be determined
9. The trailer decking material should be expanded metal	4	Diamond plate on deck (2), Steel non-skid for safety (2)

*Median Score of 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree

Student Feedback – 6 Month Follow Up

n=5

Item Description	Median Score*	Abbreviated Comments
1. This project was a good application of skills I learned thru internships and personal experiences	4	N/A
6. Working with stakeholders was often frustrating	4	You need to take [stakeholders] ideas into consideration
7. Despite any frustrations…communicating with stakeholders allowed me to gain skills that I use in my current career	3	When it came to communication, I was always nervous, but now I do it on a daily basis
8. The ability to work as a team and manage conflict was a valuable learning experience	3	Learning to [work through conflict] in a professional manner was very valuable

*Median Score of 4=Strongly Agree, 3=Agree, 2=Disagree, 1=Strongly Disagree

Conclusion

- Recommendations for ASM capstone projects:
  - Incorporate consensus building process/meeting with stakeholders, if feasible within scope of project
- Reviewing the literature and learning of other institutions capstone course provides insight
  - MUST get a grasp of realistic timeframe (project scope)
- Student buy in is key
  - Build something they will be proud of

Thank you

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Follow up questions and comments can be sent to:

osuagsafety@gmail.com

Jepsen.4@osu.edu, 614-292-6008

Mann.309@osu.edu, 614-292-1952

Websites:

www.agsafety.osu.edu

www.fabe.osu.edu

Facebook:

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