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Student Information Use and Decision-Making in Innovation Competitions

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Student Information Use and Decision-Making in Innovation Competitions

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Student Soybean Innovation Competition

- New, innovative sustainable product from soy
 - Prototype
 - Market & Patent Analysis
 - Impact on soy production
- Started in 1994
 - First winner: Soy-based crayons, now sold by Prang





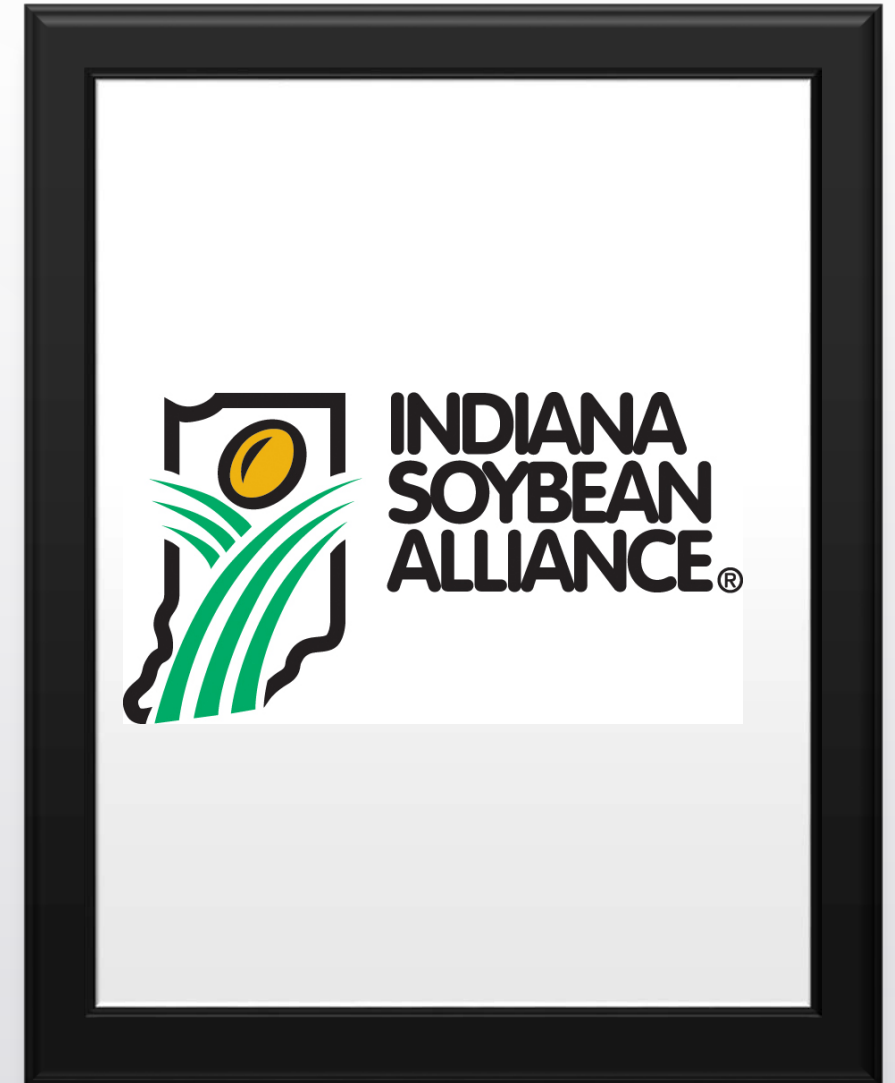
Soybean Competition Timeline

Phase I - Registration

- September – Call Out
- October – Large Team Meeting
- November 1 – Register
 - Teams must have two faculty advisors (Technical & Marketing)

Phase II – Preliminary Business Assessment

- December 1 – Due Date
 - Product Idea / Bibliography
 - Patent Search / Literature Review
 - Timeline
 - Market Analysis



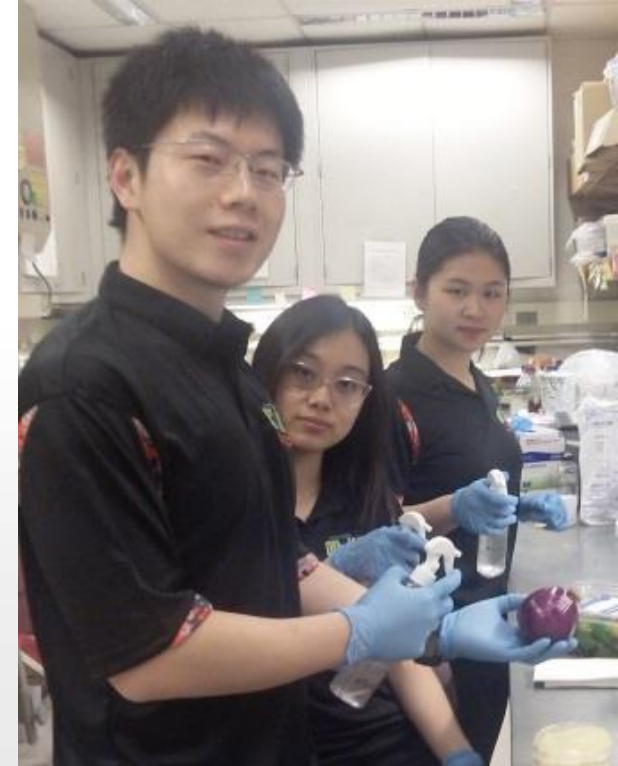
Soybean Competition Timeline

Phase III – Technical Feasibility

- January 20 – Due Date
 - Begin Research Notebook
 - Budget/Vendor - Order raw materials, start prototypes
 - Lab Safety Training
 - Assign IP to Purdue
 - Technical Process Summary

Phase IV – Final Product Assessment

- March 1 – Due Date
 - Stage Gate Analysis
 - Technical Process Summary
 - Packaging
 - Produce Final Report and Product Prototype



Judging and Awards

1st Place - \$20,000

2nd Place - \$10,000

3rd Place - \$5,000





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Ag Soy Product Innovation
Realization & Entrepreneurship

A PURDUE VENTURES FUND
AG  **CELERATOR**



Market Research

- Rubric
 - Identify Existing Products
 - Advantages / Limitations
 - Target Market Demographics
 - Potential Market Size
 - Price for Marketing & Manufacturing
 - Potential for Commercialization by Existing Companies
 - Potential Impact on Soybean Utilization
- 90% on Market Analysis
- STEM Students
- What do you mean there's no report for my thing?



Patent Research

- Rubric
 - Effective patent search strategies
 - Explaining search results
- NOT A LAWYER
- Patents are hard
 - Keyword & classification searching
 - Multiple tools: USPTO, Derwent Innovation Index, Espacenet, Lens, Google Patents
 - A true patentability search can take weeks

Research Questions

- How do students find and use information resources for innovation competitions?
- How do students incorporate business information into decision-making within innovation competitions?



Methods

- Focus Groups
 - 10 students across 2 groups
 - All participated in most recent competition
 - 7 participated in multiple years
 - 9 undergraduate, 1 graduate





Results



Primary Market Research, Personal Connection

- “I had to go out and ask. I asked for examples... I was able to find small examples, large examples... so I was able to find how fast they could do it, how well they could do it, and then I was able to use that basic information to help develop the cost-benefit analysis, so I could compare our products to other products out there”
- “For our group we just went to the supermarket and then see which product is, has large demand for daily groceries, because we like a market that covers daily life, or like a majority of demand that people would want”



Primary Market Research, Personal Connection

- “He just started calling, and he probably called dozens of... local contractors and some larger ones just to get specific numbers, and that made a very big difference when we went into the final report and the presentation, because [we] had a list of actual companies and the revenues... and we were able to price our thing realistically.”
- “Yeah, we kind of went to the hog farm and asked them questions about marketing.”



Decision-Making

- Using information to support decisions
- One student who had previously participated in the competition talked about front-loading the research process so they would be able to make changes early based on the information they discovered
- Librarian Consultation
 - “And then for market, we met with [the business librarian]... twice, my second year. We did not meet with her at all the first year, which was a big mistake, as I said... In hindsight, I would tell every team going on in the future, meet with [the business librarian] [...] when you haven't even started the project, practically, to help understand where soy can go. And then once you actually have a decent plan, maybe meet with her again [...] when you're actually putting together the market report. But we didn't meet with her anywhere near as soon as we should have.”
 - “And then after actually looking at the market, and we had met with [the business librarian], who is, helps with marketing, she said you want to do something that can help distinguish your product, and so then we thought about how soy has more density, and that's how we got to the weighted blanket. So we weren't originally weighted blanket, we were just insulation first.”
 - Another group found out during a consultation that the costs on the product they would be replacing with soy were already so low, it didn't make sense to try and create a new soy-based version.



Instructional Opportunities & Challenges

- Overconfidence was often cited as a reason for not scheduling a consultation
 - “My team didn't ever meet in person with [the patent librarian]. I sent him an e-mail with a couple of questions, but we didn't have too much trouble with the patent search, finding patents for our product, because adhesives are everywhere. The trouble we had with patents was understanding them. But we got there eventually, I guess.”
- More information on the technical applications of soybeans



Instructional Opportunities & Challenges

- Some students also did not retain information from the original competition meeting at which the libraries speak
 - “I think the libraries should be better utilized. If you can point out the benefits, where you benefit from using libraries. I think it's as simple as showing up at the meeting and showing the resources.”
 - “I think an hour video would be better than a lecture in person. I would like it. That's how I learn, I like watching videos online.”



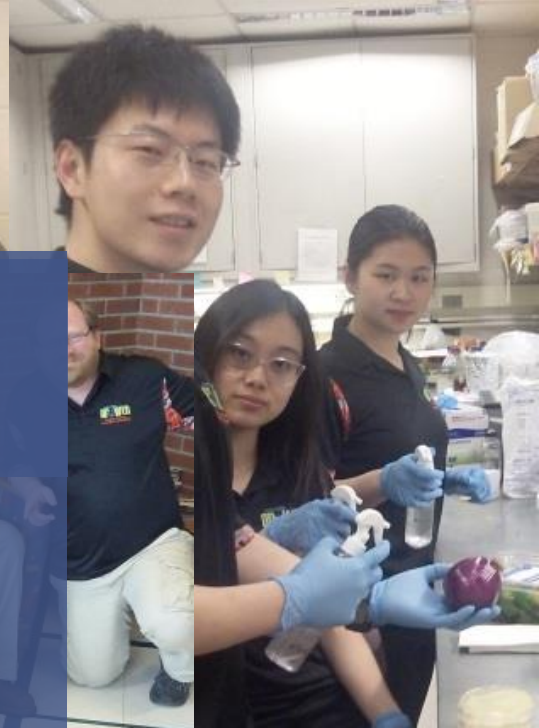
Conclusion

- Students went beyond traditional literature searching
- Searching for more authentic learning experiences
- Students showed an ability to follow the tenets of evidence-based decision-making, using information to make informed decisions

Future Work

- Pre/Post Test
- Longitudinal study on career impact of innovation competition





Thank you!

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