Maximizing the Value of Internship Opportunities for Safety Management Graduate Students in the Appalachian Region

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At WVU, we are entering our 5th decade preparing grad students in the Safety Management program (SAFM)

- The mission of the program:

  “To prepare leaders who will preserve and protect the people, property and efficacy of an organization”.
We have many of the same concerns as other safety programs

- Constant battle over ABET accreditation standards
- State funding restrictions on student travel and support
- Some challenges are unique:
  - New SAFM faculty must be engineers
We also have some real strengths

- 98 percent of our students are not on scholarship (they pay full tuition and fees)

- Largest and most active visiting committee in the College of Engineering

- We attract most students from *outside* engineering:
  - Forestry
  - Business
  - Exercise physiology
In addition:

- We have always been accredited
- Placement is strong
- We are full partners with engineering departments
  - Share technical electives
So life is good in the heart of Appalachia, right?

- Not completely...
Not completely, indeed.

- Appalachian families have high mortality and low fertility
- Many families send us first-generation college students
- Net out-migration of Appalachian college grads
And...

- Appalachian communities have been isolated for generations
  - still distrustful of outsiders

- Parents and churches don’t want kids to travel or move away
  - Morgantown is considered “a big city”
...the “barbed wire” theory

- A lot of Appalachian college-aged kids think they can’t leave their community for work or school or anything else
  - Few do summer work and few travel outside the state

- Some Appalachian parents will discourage college simply because it means leaving; this is especially true for girls
This means that students at any of the 13 Appalachian states from New York to Mississippi

Probably have little practical experience in ANY industry or ANY factory or ANY office

Probably have little travel experience

Possibly making them less competitive for placement

So let’s explore this a bit further
In 1970:

- SAFM students
  - came from industry;
  - they were mid-career;
  - they were 35-40 years old
  - predominantly male
  - they had a decade of experience
By 2000:

Most SAFM students:
- Came from undergrad directly
- Almost half were female
- **ALL** shifted fields completely
- Were 22 years old
- Had never worked summer jobs
To gather empirical data about the merit of internships, our exit interviews explore the question of experience:

- We ask about:
  - Management experience
  - EH&S experience
  - Industry experience
Excluding any internship experience, what management experience have you had in the last 5 years?
7 total with none
2 total with less than 3 months
2 total with 3-6 months
0 total with 6-9 months
2 total with 9-12 months
8 total with over 12 months
Excluding any internship experience, what environmental, safety or health work experience have you had in the last 5 years?
10 total with none
2 total with less than 3 months
0 total with 3-6 months
0 total with 6-9 months
2 total with 9-12 months
6 total over 12 months
Excluding any internship experience, what **industry** experience have you had in the last 5 years?

- 8 total with none
- 2 total with less than 3 months
- 1 total with 3-6 months
- 1 total with 6-9 months
- 2 total with 9-12 months
- 6 total with over 12 months
By 2001, recognizing these weaknesses in student work experience, we began requiring a field experience

- Same as “internship”
Internships break down this way

- Roughly 1/3 go to construction outfits
  - Parsons, Kiewit, Turner, others

- 1/3 go to insurance companies
  - Liberty-Mutual, The Hartford, others

- 1/3 go to assorted small industries and government agencies
  - FAA; State Parks; WVU, others
Internships offer advantages to the industry partner and to the student

- For the student:
  - A chance to check out up to two or three industry types before committing
  - Get industry experience, model leaders

- For industry:
  - A chance to gauge skills of a potential employee before long term commitment
But we didn’t know what our industry partners really wanted in an internship experience:

- Previous research projects were about employer/student satisfaction
- Or internship requirements
  - not what would maximize the internship experience
So in 2011, we formulated an on-line questionnaire

- Survey approved by IRB in December, 2011
  - Gathered about 50 e-mail contacts
  - Made the survey available Jan. 10 for 2 weeks.
  - We ended up with about 8 bad e-mail address and 20 useable responses
There were two parts to the questionnaire

- **Part 1**
  
  - Seven Likert-type questions were drawn from discussions with SAFM visiting committee members
    - What might improve an internship?
And...

Part 2:

Open-ended questions

1. What are the strengths of interns you have hired in the last ten years

2. What are the weaknesses of interns you have hired in the last ten years
Results of this survey

- Part 1
“Do interns need daily experience with safety applications?”
“Do interns need social interaction with crafts people?”

**Social Interaction with Crafts People**

- Number of Respondants

![Bar chart showing social interaction with crafts people. N = 22. 1 = Low Importance, 5 = High Importance.](chart.png)
"Do interns need accompanied out-of-state travel?"
“Do interns need student management of small projects”?

Student Management of Small Projects

- Number of Respondants
- 1 = Low Importance
- 5 = High Importance

N = 22
“Do interns need a site visit by a safety professor?”

Site Visit by Safety Professor

Number of Respondants

0 1 2 3 4 5

1 = Low Importance
5 = High Importance

N = 22
“Do interns need to work through an ethical dilemma?”

![Bar chart showing the importance of working through an ethical dilemma. The x-axis represents the scale from 1 to 5, with 1 being low importance and 5 being high importance. The y-axis represents the number of respondents. The data is labeled as N = 22.](image)
“Do interns need to provide a written summary of the intern experience?”

A Written Summary of Internship Experience

Number of Respondants

0 1 2 3 4 5

1 = Low Importance
5 = High Importance

N = 22
Results

- Part 2
Strengths and weaknesses of interns.

- Skilled in computer applications and software (six responses)

- * Students are typically skilled in compliance-related matters (six responses)

- * Students and industry representatives value the internship experience (four responses)
More qualitative findings:

- * Some interns are filled with enthusiasm; actively take on new challenges; (four responses)
- * Interns are accepted by crafts people (two responses)
- *
But some responses may need further research:

- Interns are timid, lacked self-confidence or didn’t want to take initiative or ask questions (six responses)

- * Interns would benefit from an opportunity to lead and model key behavior(s) (three responses)
And also...

- * Didn’t want to relocate or travel extensively or understand that travel is part of the job (four responses)

- * Interns Preferred to work only in their ‘comfort zone’ (two responses)
Methodological problems for interpreting broadly

- Low “n”
  - Some thought this was for WVU’s interns only
  - Response window open only two weeks
  - About 16 per cent bad e-mail addresses
  - Better if multiple universities took part
  - Overall, this is more like a good pilot study
Is there a take-home message about what experts think will maximize an internship?

- Independent management of small [safety related] projects (.955 rated it high or medium high importance)

- Interaction with crafts people (.909)

- And probably coaching from mentors about confidence, cross-cultural contexts, the need to re-locate (this needs further investigation in a larger survey)
What’s not very important about internships?

- Written summary of the internship experience (.612)
- Faculty visits (312)
Areas for future work:

- Replicate these findings with larger “n”
- Issue of how to improve low confidence
- How to provide opportunities to model behavior(s)
- Is the reluctance to travel a feature of Appalachian universities or all?
My take on this data

– An internship is *far more important* for 2012 grads than those of 1970
– WVU students have little *work* or *management* experience
– Modeling behavior(s) best practiced under supervision
– Internship managers can work on
  ■ Confidence issues
  ■ Reluctance to travel
And now some comments from Brad Giles, our co-author today on his expectations for interns.
My expectations

Participate and teach new employee orientation
  Participate and present weekly toolbox and plan of the day meetings
  Participate in weekly/monthly safety action team meetings/reviews
  Participate with craft in Stretch and Flex
  Participate in the Substance Abuse Prevention process
  Participate in fire extinguisher inspections
  Participate in the development of JHA’s
  Participate in monthly safety webcasts
My expectations, continued

- Participate in Accident/Incident/Near Miss investigations
- Participate in Safe Behavior Observations
- Assemble a Safe Acts Index
- Participate in monthly Project Business Reviews
- Take safety related Knowledgewire/Compliancewire on line courses
- Take STS certification test
- Utilize G-Smart data management system
- Participate in project Sustainability initiatives
- Participate in project Health and Wellness initiatives
And finally

Where applicable:

- Become familiar with confined space programs and permitting
- Become familiar with heavy equipment and crane operations
- Become familiar with rigging, hoisting and signaling
- Become familiar with industrial hygiene equipment operation and calibration
Thank you.