Liz Kisenwether (Penn State) – (handout provided)
Just started a minor degree program – Examples of getting good and getting better practices – we are learning along the way.

We started a program in early 2001, after receiving several endowments in 1990s from alumni. Won a grant from the GE- Learning Excellence- Problem-Based Learning Entrepreneurship. The timing of the grant was perfect, it provided money to launch the program. Grant is ending spring of this year and we will be looking for new money. Money comes from College of Eng, but have to work with the school of business. Commonwealth program in Pennsylvania, so have to work with those other universities as well. So that defined our audience.

Our clients from the beginning have been students from engineering, business, and IST. Minor program was determined by university, so minor will carry on past the grant. The minor consists of 18 units total, 12 units defined (4 courses). We offer a minor to any undergrad, though we target those 3 groups. We had to get the groups to communicate, because problem-based learning means totally different things to engineers and business school students. Students take a leadership class, then split into 2 tracks (engineering and business). The engineers focus on finance, marketing, etc., so they can talk to business students. We make the b-school students take some CAD stuff, so they can design things and communicate with the engineers. Then we have them all come back together after these courses to take 2 courses together.

As a director, my job is to figure out what the requirements are for the different groups of students, and then help them complete them.

Q&A
How many students?
We are heady on engineering students. 2/3 engineering, the rest are split between IST and b-school.
What is your target number of students?
150 students. That corresponds to the number taking the classes.

Are the faculty full-time or adjunct?
Full-time. If the regular faculty want to teach the classes then they can.

(Inaudible question)?
We are fortunate right now, because timing is everything. They just reworked the b-school, and are going to rework the undergrad curriculum.

How long does it take to do the minor in addition to the regular engineering requirements?
For mechanical it is tight and usually forces another semester. Other engineers have more flexibility.

What is the interaction of the grads and undergrads?
We’ve talked to dean about getting grads into this. We let them take the classes. That is it at this point.

Frank Landsberger (MIT) – (slides available)
Harvard-MIT Division of Health Sciences and Technology (HST).

Commercialization
Bench-Bedside-Business

Biomedical Enterprise Program

BEP
2 year program MS in HST or MS in Management and Technology (Sloan)
Integrate B-School …

Who is BEP?
Faculty – existing MIT and Harvard faculties
Students – entrepreneurial focus on commercializing

Biomedical Sciences and Technology Competencies
Understand general disease processes
Clinical experience
Statistics and decision-making

Management Competencies

The BEP Integrative Stream
HST Stream
Business Stream
Clinical Stream  
(Integrated Stream)  

BEP Launch  
Launched this year n 2002  

BEP Collaboration with U of Cambridge  
CMI – Cambridge MIT Institute  

BEP: A Unique Program with a Plethora of Logos  

Q&A  
*The business side of the triumvirate....?*  
This is not open to regular students. It is not an undergrad program. The length… I don’t know. We have developed some new courses that are specific to bio-related businesses. So it is not just offering the same courses to different people. 

This is more of a comment than a question. Your program sounds really great. Sounds like you are really making it happened. This is beyond the standard program. 

Cyrus Taylor (Case Western Reserve) - (slides available)  
Science Entrepreneurship Programs  

Much of what we are doing is experimental  

Agenda  
The model: the Physics Ent. Program at CWRU (2000)  

Physics Gets Down to Business  
A 2 year MS program  

How the Program Came to Be  
We listened carefully to  
Alumni  
Potential partners inside and outside academia (ent. Program at Weatherhead School of Management – Bob Hirisch)  

The Right Place at the Right Time  
CWRU physics dep’t  
Weatherhead school  

Financial Support
Bequest of Robert Stieglitz
NCIIA
Coleman Foundation
Alfred P. Sloan Foundation
Ohio Tech Action Fund
CWRU

Initial External Advisory Board

How do you structure a program to empower scientists as entrepreneurs?
Lean and flexible curriculum
5 others
Modern Physics for Innovation 1 & 2

Grounded in the Real World
2 sets of students – students who have an idea for the real world, and those that don’t.
Intrapreneurial internship (10-20 months, ~half time).

Building Networks
Physics Entrepreneurship Seminar Series
Graduates deeply committed to the program – ent. boot camp

Surprising Demographics
Age ranging from 22-56
40% women, where BS in Physics are around 19%
Minorities are also better represented

Intrapreneurship Examples
GENVAC Aerospace
USA Instru

Growth
Expansion of model to other sciences
Each program will start 5 new students

Challenges

Q&A
This is more of a boutique degree, did you have problem naming the program?
I think the competition is with an MBA. I think the basis for this being competitive is that the students see the program as really empowering towards what they want to do.

Are the MS theses in the public domain?
Yes, we do put them in the public, but leave some stuff out from them.

Why are you doing so well recruiting female and minority students to the program?
Frankly, I don’t know.

**Tina Seelig (Stanford University) – (handout provided)**

We started this program because we felt that it was no longer enough for engineers to have solely technically skills. They need to have business skills and experience. They really need to understand the business vocabulary.

Our goal is to serve the entire science community at Stanford. We reach 1200 students. We reach many more much more informally. We also have several parts that are open to the entire community.

We are very active with BASES (4500 members). They run the business plan competition on campus. They just launched an idea challenge.

We also try to reach students around the world through conferences, such as this. 2nd in our outreach efforts we put everything online. We videotape all these lectures, so everyone can access them. We try to put them in smaller pieces so they are easier to use for professors in class.

We have 3 major areas- teaching, research and outreach. 24 courses, not 24 different courses, but some are offered twice, really 15 different courses. Range from small programs – Mayfield – 12 students, spring-summer-fall. We use the Mayfield as a lab for our other classes. We can afford to make some mistakes because it lasts so long.

We have about 12 PhD students in our department. We expect them to be professors at other universities and teach entrepreneurship there.

We have conferences – REEE in Europe and Asia.

On campus – concern that all our entrepreneurship programs on campus would end up competing with each other. So we created SEN – Stanford Entrepreneurship Network (sen.stanford.edu).

We are hosting a program on 11/5 for all the campus faculty. We have 150 Stanford faculty coming. Hennessy is doing the keynote and Dean Plummer is coming as well.

What are keys to success? We’ve been really lucky. We have had senior level support. We try to operate like a startup. We take advantage of opportunities. This has really led us to be successful. We have a great team of faculty, adjuncts, and senior staff. We can’t do it all, so we are aware that we need to leverage relationships with other organizations- NCIIA, the Kauffman Foundation, etc. This gives us a chance to share our efforts with these other great organizations.

A lot of foundations want to give money to startups, not more developed groups like ours. So we are moving into the next stage to keep the group going.

**Q&A**

*I come from a b-school, do you recommend separate programs in different departments?*

Different schools have different centers of gravity. Stanford is unique in that there are several places. So I think that it is highly dependent on the university and where they would fit best.
Moderator (John Jaquette)—Any other questions.

Open Q&A

*Students learn finance, marketing, etc. But I think project management is missing?*

Liz – we have it in our capstone course, so if they haven’t seen it by then, they get it then. Milestones, managing a budget, … I agree it is really critical.

Frank – I would give a negative response. They learn it through the courses if at all. Our courses are an over-decorated Christmas trees if you will…

Jaquette – Cornell is a very isolated campus. So the politics is quite different. So the alumni convinced the deans that they should work together. I’m not sure it would elsewhere. That is why I say that I have 9 deans.