offers the acclaimed course for scientists:

“From Benchtop to Bedside
what every scientist needs to know”

A course for scientists, physicians, and graduate students who want to commercialize innovations and move basic research discoveries to the patient

Course Syllabus
Spring Term
CLRES 2730 Section 1040

http://innovation.pitt.edu
From Benchtop to Bedside
Course summary

This 12-week course is offered by the University of Pittsburgh’s Innovation Institute, which encourages and supports innovation and entrepreneurship across campus to all faculty, staff and students. The Benchtop to Bedside (B2B) course is designed to give research scientists, clinicians, graduate students, and other interested parties the basic information necessary to assess the business potential of basic science research discoveries. The B2B course will help scientists develop additional focused information, including proof of concept and validation experiments, that increase the value of the technology and reduce the investment risk. B2B will also give scientists insight into how intellectual property and other differentiators can create a barrier to entry for the competition. The course will cover the fundamentals of investment from the private sector to help finance the climb over regulatory hurdles and meet critical developmental milestones.

The B2B course content consists of highly interactive seminars that outline the steps necessary to develop a scientific or clinical discovery from the laboratory to the patient. Topics covered include how to:

- recognize an opportunity,
- develop the commercial potential of a scientific discovery,
- protect the intellectual property,
- disclose the invention to the university,
- initiate the university licensing process to a partner company or startup;
- begin early development of a drug candidate or a device for clinical use;
- plan for success within the regulatory and reimbursement guidelines; and
- clarify the scientist’s expected role and responsibilities as the process moves forward through clinical and commercial development.

Goals

Upon completion of B2B, attendees are expected to understand the following:

- A process that a scientist can use to screen an invention for commercial potential as a therapy, diagnostic, or device for ultimate use in people;
- How to map out and participate in the process of moving a potentially important therapy or diagnostic towards clinical trials, or an equally important device through the regulatory pathway;
- The University and regional resources available to clinicians and researchers to help them in the process of getting an innovative therapy, diagnostic, or device from the lab to the patient; and
- The need to thoroughly prepare in order to present new technologies to companies and investors, and how to conduct effective interactions with key customers and industry.
Projects

There is no exam at the end of this class. The final project for this class is a group presentation of a business opportunity around a new technology. Historically, these projects are in the life sciences field, and are often developed from a biomedical research project. However, the presentation can also be around an original idea developed by the group, as long as the technology exists and is feasible. See project handout for more detail. There will be preparatory presentations and exercises leading up to the final presentation. Course attendees are encouraged to invite guests to the final presentations.

Course materials

We will use Blackboard (Bb) for all course materials plus secondary materials including articles and publications relating to a particular topic. To access Bb, you need to use your Pitt username and password to log onto the course web system at http://courseweb.pitt.edu. Please print/access your own copies of powerpoint presentations. They will be uploaded 24 hours in advance.
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| Session 1  | **Welcome and introductions**  
The B2B course  
*Academic entrepreneurship: recognizing opportunity*  
- The business of academic research  
- Overview of the Innovation Institute, licensing, startups, and intellectual property  
Exercise: science vs business  
Projects  
Entrepreneurship @ Pitt |
| Session 2  | **Business basics**  
- Market focus  
- Business Model Canvas  
Projects  
- Project overview  
- Pitching  
- Groups |
| Session 3  | **Cohera Medical panel**  
#1 Business Model Canvas presentations |
| Session 4  | Finish #1 Business Model Canvas presentations  
*Customer discovery*  
- Market research  
- Interviewing customers & stakeholders  
- Competition  
Value proposition |
| Session 5  | **Voice from the trenches:**  
*Getting from the bench to the bedside* |
| Session 6  | **Understanding intellectual property**  
Group work on projects |
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| Session 7 | **Art of the Pitch**  
Group work on projects                                           |
| Session 8 | **Primer on finance**  
Building a team                                                         |
| Session 9 | **Scientist-entrepreneur: managing Conflict of interest: panel**  
#2 Business Model Canvas presentations                                |
| Session 10| **Financing: building the value chain**  
Finish #2 Business Model Canvas presentations                        |
| Session 11| **Regulatory & reimbursement, why these are Important**  
Guest speaker on the regulatory and reimbursement pathways  
**Elevator pitches**  
Group work on projects                                            |
| Session 12| **Final presentations**  
Graduation  
Party!                                                          |
|          | **Final submission of executive summaries for those taking B2B for credit** |