

Special Topics in Agriculture and Food Systems

Subtopic: Introduction to Agricultural Innovation and Entrepreneurship

11:020:255 Spring 2018

3 Credit Seminar

Fridays, 9:15 am – 12:15 pm; Field trip tentatively: Friday March 23, ~8 am – 6 pm

Institute for Food, Nutrition and Health (IFNH), Room 205

Prerequisites: None.

CONTACT INFORMATION:

Instructor(s): Xenia K Morin

Co-instructor: TBD.

Office Location: IFNH 220

Phone: (848) 932-3502

Email: xenia.morin@rutgers.edu

Office Hours: By appointment.

COURSE WEBSITE, RESOURCES AND MATERIALS:

Textbooks:

- Carlisle, Liz (2016) *Lentil Underground: Renegade Farmers and the Future of Food in America*. Avery (ISBN: 978-1592409563)
- Drucker, Peter F. (2006) *Innovation and Entrepreneurship: Practice and Principles*. Harper Business. Reprint Ed. (ISBN: 978-0060851132)
- Hirshberg, Gary (2008). *Stirring It Up: How to Make Money and Save the World*. Hyperion (ISBN: 978-1401303440).

With additional selected readings and videos on Sakai.

COURSE DESCRIPTION:

This interdisciplinary seminar-style course is an introduction to innovation and entrepreneurship in the area of agriculture and food systems. Students will begin with an historic overview of innovations and entrepreneurship in agriculture and food systems. Using recent case studies such as those from Stoneyfield Organic, Timeless Seeds, Horticulture Innovation Labs, Arable, Grub Tubs, Blue Apron, Campbell's "Real food that matter's for life's moments" campaign, and agribusiness companies such as Monsanto, and more, students will begin to apply the main concepts that drive innovation and entrepreneurship using Peter Drucker's classic book *Innovations and Entrepreneurship: Practice and Principles*. Students will also learn the nine basics component of Business Model Canvas, a tool used to analyze and create successful enterprises. Invited speakers will provide opportunities to discuss and apply ideas and concepts learned in the course. To end the course, students will developing a pitch for an innovation (agricultural or food product or process) as part of an extended group project. One all-day off-campus field trip, to the Rutgers Food Innovation Center and EcoComplex, is planned.

LEARNING GOALS:

By the end of this class, students should be able to:

1. Using Drucker's framework, create a concept map of the seven areas of opportunity for innovation in which agricultural and food systems.
2. Create an historical outline of innovations in agriculture and food systems over the past 300 years.
3. Describe the nine components of a Business Model Canvas worksheet.
4. Discuss and analyze recent agricultural and food innovations and entrepreneurship, and how they are impacting their markets.

5. Give a short oral presentation.
6. Successfully contribute to group discussions and effectively work in teams.

ASSIGNMENTS/RESPONSIBILITIES & ASSESSMENT:

- Mid-term Exam: 20%
- Weekly Summative Forum Posting: 40% (8 @ 5% ea.).
- Week 5 Student presentation: 10%
- Group project presentation and individual written report (due May 4): 20%
- End-of-semester reflection (due May 4): 10%

Learning goals will be assessed using a combination of rubrics, multiple choice and short answer questions, oral presentations and a final report. Additionally, students will self-assess their learning using an end-of-semester reflection exercise.

Your grade will be determined by the following criteria:

A (90-100)– Outstanding –The student has demonstrated a high level of consistent effort and a superior grasp of the subject matter. The student communicates ideas and concepts in an organized, insightful and analytical manner. The research work is strong and the arguments presented are focused, on-topic and based on evidence with interpretation. The student has found his/her own voice.

B+/B (80-89) – Very Good/Good – The student has demonstrated consistent effort and a solid grasp of the material. The B+ student demonstrates the ability to organize and examine the material in a critical and insightful manner. The B student may struggle with some organization and analysis but has learned to use evidence; his/her voice is developing.

C+/C (70-79) – Satisfactory/Acceptable –The student has shown a moderate or inconsistent level of effort and has demonstrated the ability to grasp concepts and communicate ideas and concepts. The student’s work is basically satisfactory or acceptable, but is not in any way exceptional or insightful. The research work may be somewhat unfocused and the work may demonstrate some struggles to organize and use evidence to support an argument. The student is struggling to find his/her voice.

D (60-69)– Unacceptable – The student has demonstrated a minimal effort and understanding of the fundamental nature of the course material. The student’s performance reflects inconsistent effort and the student’s research work reflects a poor understanding of the effort and work required, or reflects a poor understanding of the overall research topic. The student struggles to articulate his/her own opinions or research.

F (<60)– Failure – The student has demonstrated limited effort and a lack of understanding or familiarity with course concepts and materials. The student’s performance has been inadequate or highly inconsistent. Research work fails to follow the instructions. Failure is often the result of limited effort and poor attendance which may indicate that the student is not in the proper field of study.

ACCOMODATIONS FOR STUDENTS WITH DISABILITIES

Please follow the procedures outlined at <https://ods.rutgers.edu/students/registration-form>. Full policies and procedures are at <https://ods.rutgers.edu/>

ABSENCE POLICY

Students are expected to attend all classes; if you expect to miss one or two classes, please use the University absence reporting website <https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence. An email is automatically sent to me.

Chronic absence or lateness may result in failing the class.

COURSE SCHEDULE (tentative 11/21/2017; subject to change and speaker availability):

Week (Fridays)	Class Topics, Case Studies, and Activities	Weekly Readings (to be completed for class):
1 Jan. 19	<p>What to expect in this class.</p> <p>Introduction to Innovation and Entrepreneurship.</p> <p>Class Activity: What is it? Equipment from agriculture and food preparation and dining.</p> <p>Overview of history of innovation in agriculture: On farm, Product, Processing, Packaging, Marketing, Retailing, Waste. Sustainability.</p> <p>Case study: What does the future of farming look like? "This Tiny Country Feeds the World", National Geographic 2017 (https://www.nationalgeographic.com/magazine/2017/09/holland-agriculture-sustainable-farming/)</p> <p>Reviewing Homework and Posting Forums in Sakai.</p>	<p>Drucker: Introduction: The Entrepreneurial Economy.</p>
2 Jan. 26	<p>Entrepreneurship and Purposeful Innovation: Steps in Agricultural Innovation</p> <p>Case studies: Innovations in Seeds, Plants, and Animals (Historical to current). Can science lead to innovation? Plant breeding; hybrid seeds; biotech plants and animals.</p> <p>Finding a presentation topic (innovations in equipment). Expectations for presentations in week 4.</p> <p>Guide to searching for patents.</p> <p>In class: Students to choose three very different innovations from the U.S. Patent and Trademark Office, or from <i>Fresh</i>:</p>	<p>Drucker: Part I. Chapter 1: Systematic Entrepreneurship, Chapter 2: Purposeful Innovation and the Seven Sources for Innovative Opportunity</p> <p>Sakai: Smith, J. "The Second Gold Rush" (Chapter 3) in <i>The Garden of Invention: Luther Burbank and the Business of Breeding Plants</i> (Penguin, 2009), excerpts, p. 51-73.</p> <p>Fussell, Betty. "The Language of Science" in <i>The Story of Corn</i>, (U of New Mexico Press, 1992), excerpts, p. 59-96.</p> <p>Enviropig. National Geographic, March 30, 2010</p>

	<p><i>Perishable History</i>, or other case study from a newspaper or magazine article or class.</p>	<p>https://news.nationalgeographic.com/news/2010/03/100330-bacon-pigs-enviropig-dead-zones/</p> <p>Paper: Xu, Y., and J. Li. <i>Agriculture and crop science in China: Innovation and Sustainability</i>. <i>Crop J.</i> 5 (2017): 95-99.</p> <p>Forum #1 on readings due by class Jan 26. (Graded for completion).</p>
<p>3 Feb. 2</p>	<p>Starting the seven sources of innovation opportunity: the unexpected, incongruities, process needs.</p> <p>In class activity: The Golden Rice Debate.</p> <p>Case Studies: Innovation in Production (Current) Monsanto's Water Efficient Maize in Africa. Timeless Seeds in <i>Lentil Underground</i></p> <p>Optional: Cropping system innovation for coping with climatic warming in China (See Deng <i>et al.</i> <i>Crop J.</i> (2017), 136-150)</p> <p>How to use Drucker's framework to apply to a case study.</p> <p>Narrowing down presentation topic. Students will narrow to one innovation for their presentation in Week 4 (assessment). Group work and discussion.</p> <p>Creating an effective presentation.</p>	<p>Drucker Part II: Chapter 3: Source: The Unexpected. Chapter 4: Source: Incongruities. Chapter 5: Source: Process needs</p> <p>Selected readings from <i>Lentil Underground</i>.</p> <p>Sakai class activity: The Golden Rice Debate (sections will be assigned to each student).</p> <p>Work on your research for your presentation topic.</p> <p>Forum #2 on readings by class on Feb. 2 (graded for completion).</p>
<p>4 Feb. 9</p>	<p>Starting the seven sources of innovation opportunity: industry and market structures, demographics, changes in perception, and new knowledge.</p> <p>Case Studies (Innovations in Equipment): Student presentations (~3-5 min each) (10% of grade).</p> <p>In class activity:</p>	<p>Drucker Part I: Chapter 6: Source: Industry and Market Structures. Chapter 7: Demographics Chapter 8: Changes in Perception Chapter 9: New Knowledge</p> <p>Forum #3 on readings by class on Feb 9.(graded for completion).</p>

	<p>Create an historic outline for the history of the plough (based on: http://www.ploughmen.co.uk/about-us/history-of-the-plough)</p> <p>Create historical outline of innovations 1700-2000 based on class presentations.</p> <p>Complete Field Trip Paperwork.</p>	<p>Remember to prepare your ~3- 5 min presentation for class. Upload copy to Sakai>Assignments.</p>
5 Feb. 16	<p>What is an entrepreneur and what does it take?</p> <p>Framing innovation and entrepreneurship: What problem are you solving? How are you meeting a need?</p> <p>Case Study #1: Future Innovation in Equipment on the Farm: Equipment and Data Collection/Analysis for Crop Management Guest Speaker: Adam Wolf, Arable, Princeton NJ</p> <p>Case Study #2: UC Davis Horticultural Innovation Labs: Technologies for developing countries and small holder farmers. Skype: Beth Mitchem, UC Davis</p> <p>Discussion.</p>	<p>Drucker Part II: The Practice of Entrepreneurship Chapter 10: The Bright Idea Chapter 11: Principles of Innovation</p> <p>Forum #4 on readings by class on Feb. 16 (graded for completion).</p> <p>Arable: https://www.arable.com/</p> <p>See Sakai for Hort Innovation Lab readings from: http://horticulture.ucdavis.edu/main/center_ucdavis.html0 .</p> <p>Start study for mid-term exam on Drucker, Chapters 1-11 and how they apply to agriculture.</p>
6 Feb. 23	<p>In class (60 min): Mid-Term Exam on materials from Weeks 1-5.</p> <p>Start Class Project Working in teams exercises Group contracts Brainstorming Choosing the Topic</p> <p>Tools: Introduction to Business Model Canvas (https://www.youtube.com/watch?v=QoAOzMTLP5s0)</p>	<p>Drucker Part II: The Practice of Entrepreneurship Chapter 12: Entrepreneurial Management Chapter 13: The Entrepreneurial Business</p> <p>Forum #5 on readings by class on Feb. 23. (graded for completion).</p> <p>Sakai: Business Model Canvas, selected reading/viewing.</p>
7 Mar. 2	<p>Food Systems Innovation</p>	<p>Drucker Part III: Entrepreneurial Strategies Chapter 16 'Fustest with the Mostest'</p>

	<p>Systematic Innovation And Entrepreneurial Strategies</p> <p>What problem are you solving? How are you meeting a need?</p> <p>Guest Speaker: Dr. Joshua Anthony, Vice President Global R&D Campbell Soup, and Founding Chief Scientific Officer, Habit, LLC.</p> <p>Group work</p>	<p>Chapter 17 ‘Hit Them Where they Ain’t’ Chapter 18 Ecological Niches Chapter 19 Changing Values and Characteristics</p> <p>Campbell Soup Company: https://www.campbells.com/</p> <p>Forum #6 on readings by class on Mar. 2 (graded for completion).</p>
8 Mar. 9	<p>Innovations and Challenges in the Organic and Dairy Sectors</p> <p>Case study: Stoneyfield Organic Case Study: Supply Chain Issues in China’s Milk Adulteration Incident.</p> <p>In class activity: Applying Business Model Canvas to Stoneyfield Organic and China’s milk market</p> <p>Class Discussion, Group work</p> <p>Preparation for Field Trip</p>	<p>Hirschberg, <i>Stirring it Up</i>, selected chapters. Company Webpage: www.stoneyfield.com</p> <p>Sakai: Supply Chain Issues in China’s Milk Adulteration Incident, selected pages.</p> <p>Sakai: Business Model Canvas, selected reading/viewing. For example: Learning about Business Model Canvas: https://www.youtube.com/watch?v=IP0cUBWTgpY 9 boxes to describe a start up to a large company.</p> <p>Forum #7 on readings by class on Mar 9 (graded for completion).</p>
9 Mar. 16	<p>SPRING BREAK! ENJOY.</p>	
10 Mar. 23	<p>FIELD TRIP: 8 am – 6 pm. EcoComplex and/or Food Innovation Center.</p>	<p>Rutgers: EcoComplex http://ecocomplex.rutgers.edu/</p> <p>Rutgers: Food Innovation Center (http://foodinnovation.rutgers.edu/)</p> <p>No Forum this week.</p>
11 Mar. 30	<p>Field Trip Discussions and group discussions</p> <p>Venture Capital and Innovation Hubs: Guest Speaker: Adrian Hyde, 20 year venture capitalist and Hopewell vegetable grower</p> <p>Case Study: Place-Based Innovation Hub: Intervale Center, Burlington VT.</p>	<p>Sakai: Selected Readings or video.</p> <p>Reading: Impossible Foods Meatless Burger (https://www.investing.com/news/stock-market-news/article-514064)</p> <p>Intervale Center: https://www.intervale.org/</p>

	<p>Case Study: Grub Tubs, Austin, TX. (Skype in owner) winner of wework Creator Award.</p> <p>Building research skills for Business Model Canvas</p>	<p>Grub Tubs: https://www.grubtubs.com/ . The elevator pitch.</p> <p>Forum #8 on Lessons learned from the Field Trip by class on Mar 30 (graded for completion).</p>
12 Apr 6	<p>Innovations in Marketing and Retail</p> <p>Home Food Delivery Service <i>Guest Speaker:</i> Blue Apron (TBD)</p> <p>Case Study: Antimicrobial finishes for textile materials. E.g. Cotton</p> <p>Building skills for Business Model Canvas</p> <p>Project Development Group Work</p>	<p>Sakai: Selected Readings or video.</p>
13 Apr 13	<p>Building more skills for Business Model Canvas</p> <p>Project Development Group Work in class</p>	<p>Sakai: Selected Readings or video.</p>
14 Apr 20	<p>Project Development Group Work in class</p> <p>Class feedback survey (in class).</p>	
15 April 27	<p>Class Presentations (graded) for invited guests.</p> <p>In class discussion and review of class.</p>	<p>Sakai>Assignments>Pitch Presentation Upload your presentation prior to class on April 27.</p>
By May 1	<p>Complete End-of-Semester Reflection and hand in individual report from group project.</p>	

FINAL EXAM/PAPER DATE AND TIME

NO FINAL EXAM. FINAL PRESENTATION AND PROJECT PAPER IN LIEU OF EXAM.

ACADEMIC INTEGRITY

The university's policy on Academic Integrity is available at <http://academicintegrity.rutgers.edu/academic-integrity-policy>. The principles of academic integrity require that a student:

- properly acknowledge and cite all use of the ideas, results, or words of others.
- properly acknowledge all contributors to a given piece of work.

- make sure that all work submitted as his or her own in a course or other academic activity is produced without the aid of impermissible materials or impermissible collaboration.
- obtain all data or results by ethical means and report them accurately without suppressing any results inconsistent with his or her interpretation or conclusions.
- treat all other students in an ethical manner, respecting their integrity and right to pursue their educational goals without interference. This requires that a student neither facilitate academic dishonesty by others nor obstruct their academic progress.
- uphold the canons of the ethical or professional code of the profession for which he or she is preparing.

Adherence to these principles is necessary in order to ensure that

- everyone is given proper credit for his or her ideas, words, results, and other scholarly accomplishments.
- all student work is fairly evaluated and no student has an inappropriate advantage over others.
- the academic and ethical development of all students is fostered.
- the reputation of the University for integrity in its teaching, research, and scholarship is maintained and enhanced.

Failure to uphold these principles of academic integrity threatens both the reputation of the University and the value of the degrees awarded to its students. Every member of the University community therefore bears a responsibility for ensuring that the highest standards of academic integrity are upheld.

STUDENT WELLNESS SERVICES

Do Something To Help: Share A Concern!

<http://health.rutgers.edu/wp-content/uploads/sites/57/2015/01/concerned.html>

Counseling, ADAP & Psychiatric Services (CAPS)

(848) 932-7884 / 17 Senior Street, New Brunswick, NJ 08901 / www.rhscaps.rutgers.edu/

CAPS is a University mental health support service that includes counseling, alcohol and other drug assistance, and psychiatric services staffed by a team of professional within Rutgers Health services to support students' efforts to succeed at Rutgers University. CAPS offers a variety of services that include: individual therapy, group therapy and workshops, crisis intervention, referral to specialists in the community and consultation and collaboration with campus partners.

Violence Prevention & Victim Assistance (VPVA)

(848) 932-1181 / 3 Bartlett Street, New Brunswick, NJ 08901 / www.vpva.rutgers.edu/

The Office for Violence Prevention and Victim Assistance provides confidential crisis intervention, counseling and advocacy for victims of sexual and relationship violence and stalking to students, staff and faculty. To reach staff during office hours when the university is open or to reach an advocate after hours, call 848-932-1181.

Disability Services

(848) 445-6800 / Lucy Stone Hall, Suite A145, Livingston Campus, 54 Joyce Kilmer Avenue, Piscataway, NJ 08854 / <https://ods.rutgers.edu/>

Rutgers University welcomes students with disabilities into all of the University's educational programs. In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation: <https://ods.rutgers.edu/students/documentation-guidelines>. If the documentation supports your request for reasonable accommodations, your campus's disability services office

will provide you with a Letter of Accommodations. Please share this letter with your instructors and discuss the accommodations with them as early in your courses as possible. To begin this process, please complete the Registration form on the ODS web site at: <https://ods.rutgers.edu/students/registration-form>.

Scarlet Listeners

(732) 247-5555 / <http://www.scarletlisteners.com/>

Free and confidential peer counseling and referral hotline, providing a comforting and supportive safe space.