**** [](http://www.google.com/url?sa=i&rct=j&q=&esrc=s&source=images&cd=&cad=rja&uact=8&ved=0ahUKEwjS6pD8u7vPAhUJcT4KHe8yBCUQjRwIBw&url=http://www.brandsoftheworld.com/logo/universidad-autonoma-de-yucatan-0&psig=AFQjCNH0YK0pBVYbS5tOqhobIq1NdlBoDQ&ust=1475475302482146)

**Winter Session**

**Social and Sustainable Innovation driven by the Sustainable Development Goals**

**Yucatan Mexico, January 7th to 18th, 2019**

**Instructors**

John Spengler, PhD

Akira Yamaguchi Professor of Health and Human Habitation

Department of Environmental Health

Harvard T.H. Chan School of Public Health

Email: [spengler@hsph.harvard.edu](mailto:spengler@hsph.harvard.edu)

Ramon Sanchez, ScD

Research Associate

Director

Sustainable Technologies and Health Program

Center for Health and the Global Environment

Department of Environmental Health

Harvard T.H. Chan School of Public Health

Email: [rsanchez@hsph.harvard.edu](mailto:rsanchez@hsph.harvard.edu)

Carlos Vinajera, PhD

Professor of Engineering

Autonomous University of Yucatan

[vreyna@correo.uady.mx](mailto:vreyna@correo.uady.mx)

**Additionally faculty from local universities and research centers will teach some sessions like "history and resilience of Mayan architecture", "principles of a single-payer health insurance system (pros and cons)", etc.**

**TEACHING ASSISTANT**

TBD

**Office hours** to be arranged via email before January 8th, then there will be an office hour in the evening of every day.

**Partners:** Universities in Merida Yucatan like the Autonomous University of Yucatan (UADY) and Universidad Anahuac-Mayab

**Credits:** 2.5 credits

**Grading Options:** Ordinal and P/F Options

**Course Overview:**

In January 1st of 2016 the United Nations officially released the 2030 Agenda for Sustainable Development which officially launched the 17 Sustainable Development Goals (SDGs) which over the next 15 years will drive global activities to end all forms of poverty, fight inequalities and reduce climate change. The new goals call for action for all countries to promote economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection (UN, 2016). Although SDGs are not legally binding, it is very likely that governments may use them to establish national frameworks for achieving these 17 goals which might trigger innovation at a global scale. However, the task of complying with SDGs should be a shared responsibility with citizens of each country as it is unlikely that governments would be able to act by themselves without people’s support. A big percentage of new ideas are likely to be conceived and implemented in developing countries which may require to strengthen their frameworks and capacity to conceive and implement innovation initiatives under their local conditions. For that reason, public health professionals should become agents of change that empower people worldwide by sharing knowledge and developing skills in sustainable practices and technologies, climate change preparedness, social entrepreneurship and the process of creating positive startups to implement sustainable and social innovation to help in achieving SDGs.

This course will examine the relationship between SDGs, community problems and current sustainable and social solutions to serve as a starting point for developing new solutions that might serve as the business or social cases for new startups in health, sustainability or social ventures

This course will be taught in the Yucatan Peninsula in Mexico during January of 2017. Students from Harvard University will take classes along with students from the Autonomous University of Yucatan and will work in multi-national teams to assess community needs, prepare climate change vulnerability and resiliency enhancement plans, design health and social solutions to problems to serve as the business case for sustainable startups, develop business or social plans for potential investors, engage the community into participating in developing and implementing solutions and in recommending frameworks to enhance sustainable and social entrepreneurship in a community.

Some of the topics for this course are:

* Sustainable Development Goals as drivers of sustainable, health and social initiatives
* Assessment of health and environmental beneficence of new ideas to achieve SDGs based on scientific tools developed by public health professionals
* Assessment of community vulnerability and resiliency development to the effects of climate change
* The process of identifying and understanding community needs to engage people into participating in achieving the aims of SDGs
* The process of creating social, health or sustainability startups based on SDGs, community needs and climate change preparedness activities
* The process of using health and environmental benefits of sustainable or social value propositions to strengthen the business cases to help funding activities with innovation and social investors

Eligible students may conduct further independent studies, thesis and write papers.

**Texts and Reading Materials**

Kawasaki, Guy, “The Art of the Start: The Time-Tested, Battle-Hardened Guide for Anyone Starting Anything,” Portfolio, 2004

All of the other readings and links will be available before class or provided as uploaded documents on the course website.

**Learning Objectives:**

Participants in the course will learn to:

* Have a deep understanding of the Sustainable Development Goals and how they support environmental and health protection worldwide
* Identify what are the potential social and economic benefits of SDGs and how that relates to resilient and healthy communities
* Identify and use the right methodologies to assess social, health and environmental community needs through climate change vulnerability assessments
* Compile and record lessons learned from the past from indigenous communities to help in reducing climate change vulnerability and enhancing community resiliency for other societies in the future
* Transform the needs of a community into new social and/or technological ideas to solve problems in a sustainable way (clean water, renewable energies, prevention of infectious diseases, enhancement of human comfort in buildings, enhancement of the built environment and protection of the natural ecosystems, etc.)
* Use the basic new product/service development process to create new technologies and/or services that enhance environmental and human health protection.
* How to use techniques to enhance customer-driven design for sustainable and social solutions by engaging local people into the new product/service development process and in defining conceptual designs that work for them and for their communities
* Use proper scientific methods for estimating and comparing the impacts of conventional VS sustainable and/or social technologies and practices and how to use this information to build the business or social case for a startup
* Apply community-based participation and benefit-sharing of revenues with local people to consolidate participation in prevention of infectious diseases, renewable energy and energy efficiency projects and in creating traction for new sustainable and social startups
* Create a sustainable, health or social startup from scratch and the process of writing a business plan to assess and manage risks properly to increase the chances of getting funded
* Identify the main components and use global lessons learned to create a sustainable and/or business plan for sustainable, health or social startups
* Characterize types of innovation and social investors and determine how to deal with each one of them to support positive startups that support the process of achieving SDGs (Angel investors, venture capitalists, venture philanthropists, foundations, aid agencies, crowdfunding, co-ops, etc.)
* Prepare effective presentations to pitch a startup to different types of investors based on the type of business and/or social proposition by enhancing the idea of fulfillment of SDGs, overall environmental and health beneficence and potential social benefits of a new venture
* Use techniques to prepare a rural or developing community into creating frameworks to support social and sustainable entrepreneurship to create positive startups and connect them with innovation investors around the world to enhance funding opportunities for companies actively supporting the achievement of SDGs

**Outcome Measures/Grading Criteria:**

Levels: Graduate- Non Degree, Graduate, Graduate - Special Students.

Schedule Types: Field trips; seminars and case based discussions.

**Class participation: 20%**

Active learning through class participation is a necessary component of this course. Students are expected to read before class. Their engagement will be evaluated on three measures: substantive class participation (10%), co-leadership of assigned class presentations (5%) and guided-discussion (5%). Students are expected to attend all classes and participate in discussions in a manner that reflects their understanding of recommended readings and team building attitudes during field visits. Discussions can take on various creative forms. Examples include class debate, role games, or discussions topics. The discussion/activity should last 20-30 minutes after each lecture.

**Preliminary Climate Change Preparedness Plan: 20%**

Students will form groups of 3 or 4 people to assess climate change vulnerability and resiliency enhancement opportunities for a community (in Yucatan or any other place known to them). This plan will be a document with results and recommendations to the community (5-10 pages [double spaced] with 3 - 5 references, APA style*)* on January 16th

**Preliminary Business and/or Social Plan: 50%**

Students will form groups of 3 or 4 people to create a business or social proposition for a startup that aims to help in achieving one or more SDGs. Students will use their newly acquired knowledge and skills as well as community information to create a business or social plan that assesses and manages diverse types of risks in a sustainable way to facilitate funding activities and the creation of a positive startup. Such plan will include business, social, community beneficence and health protection aspects in the standardized format usually followed by successful entrepreneurs in mature innovation hubs like Boston or Silicon Valley. This document will be a business or social plan that could be presented to real innovation and social investors (8 to 12 pages [double spaced] with 3 - 5 references, APA style*)* on January 20th

**Final presentation (business or social pitch for a positive startup): 10%**

At the conclusion of the winter session term, students will present their value proposition for a startup to the class over one or two sessions at HSPH. The type of final project will be based on the needs of host communities and agreed upon by the student and the winter course teaching team. Innovation and Social Investors will be invited to these presentations. Grades will be based on investors’ evaluation of the value proposition and the student’s final presentation. The teaching team will use pass/fail or ordinal grading schemes based on students’ preference in order to assess the quality of products.

**Grading criteria for Climate Change Preparedness Plan**

* Identification of key community aspects to analyze (transportation, health system, food supply, energy generation, water and sewage systems, etc.): 20% (relevance, specificity of arguments for selection, explicitness of assumptions)
* Assessing community vulnerabilities, proposed mechanisms to reduce such issues and proposals to reduce vulnerabilities and enhance resiliency to climate change: 60% (composed of the following: proper identification of problems, adequacy of community data/literature that supports occurrence and severity of climate change-derived problems, identification of current and future enhancement in detection systems for climate change effects, proposals to reduce vulnerabilities by characterizing and managing risk properly, proper presentation of results, linkage between evidence and argument, limitations and discussion)
* Flow and overall clarity: 20% (grammar and spelling, logical flow of the plan and proper citations).

**Grading criteria for Business and/or Social Plan for a Startup**:

* Selection of sustainable and/or social value proposition: 20% (relevance, relation to community needs and/or fulfillment of SDGs, specificity of arguments, explicitness of assumptions)
* Evidence: 60% (composed of the following: adequacy of data/literature that supports the conceptual solution developed, use of class tools to manage risks in the business or social plan to increase the likelihood of getting funds, linkage between evidence and argument, assessment of health and environmental benefits and their relationship to SDGs, assessment of potential socioeconomic benefits and their relationship to SDGs)
* Flow and overall clarity: 20% (grammar and spelling, logical flow of the essay and proper citations where needed).

**Course Evaluations**

Completion of the course evaluation is a requirement.  Students’ grades will not be available until they submit the course evaluation.

**Session by session detail:**

**Course Evaluations**

Completion of the course evaluation is a requirement.  Students’ grades will not be available until they submit the course evaluation.

**Session by session detail:**

**Monday, January 7th**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor(s)** | **Local** |
| **09:00 am** | **Introduction** | John Spengler, Ramon Sanchez and Carlos Vinajera | UADY |
| **10:30 am** | Principles of the United Nations’ Sustainable Development Goals and how they are related to well-being, environmental and human health protection | John Spengler and Ramon Sanchez | UADY |
| **13:30 pm** | Field Visit 1:  Causes and potential consequences of climate change and their relationship to SDGs. Case study of energy generation, sustainable tourism and trade in Puerto Progreso Yucatan | John Spengler, Ramon Sanchez and Carlos Vinajera | Puerto Progreso Yucatan |
|  |  |  |  |

**Tuesday, January 8th**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | **Differences between climate change mitigation and adaptation projects** | John Spengler | UADY |
| **10:30 am** | Examples of climate change mitigation and adaptation technologies and practices | Ramon Sanchez and Carlos Vinajera | UADY |
| **13:30 pm** | Techniques to assess community climate change vulnerabilities based on risk management techniques developed by the U.S. Military, NASA, automotive and airspace corporations | Ramon Sanchez | UADY |
| **16:00 pm** | Techniques to enhance community participation in climate change vulnerability assessment and the process for preparing a climate change preparedness plan | John Spengler/ Ramon Sanchez | UADY |

**Wednesday January 9th**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | Advanced market intelligence techniques to find detailed technical and scientific information for sustainable technologies and/or social practices that might help in creating value propositions to solve community problems | John Spengler, Ramon Sanchez | UADY |
| **10:30 am** | Quality function deployment to transform community needs (requirements) into robust value propositions that fulfill or exceed customer’s expectations | Ramon Sanchez | UADY |
| **13:30 pm** | Field Visit 2: Field trip to the Dzilam wind farm. | Carlos Vinajera | Dzilam Yucatan |

**Thursday, January 10th**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | **Intellectual property: patents, trademarks, copyrights, utility models and trade secrets. Techniques to search for patents and trademarks in the U.S. and worldwide intellectual property authorities.** | Ramon Sanchez | UADY |
| **10:00 am** | Techniques to enhance creativity and innovation to synthetize conceptual designs and evaluate feasibility to select among design options | Ramon Sanchez | UADY |
| **13:30 pm** | Principles of Life Cycle Thinking and Sustainable Product and Service Design | Ramon Sanchez | UADY |
| **16:00 pm** | The Design Review Process and techniques and recommendations to introduce new sustainable products and/or services to the market | Ramon Sanchez | UADY |

**Friday, January 11th**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | **Lessons from the past in Climate Change Vulnerability and Resiliency**  Field Visit 3:  Visit to Chichen Itza Mayan Ruins | Carlos Vinajera and Director of Mayan Museum in Chichen Itza (to be confirmed) | Chichen Itza Yucatan |
|  |  | | |
| **13:30 pm** | Analysis of Mayan exodus due to climate change in 9th Century | Director of Mayan Museum in Chichen Itza or designee | Chichen Itza Yucatan |

**Weekend (Optional)**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** |  |  |  |
| **--** |  |  |  |
| **Saturday** |  |  | **Visit to Paseo Montejo in Merida** |

|  |  |  |  |
| --- | --- | --- | --- |
| **Sunday** |  |  | **Visit to Mayan Cenotes** |

**January 14th – Monday**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | **Presentation of Climate Change Preparedness Plans prepared by every group** | Ramon Sanchez, Carlos Vinajera and Director of Civil Protection and Preparedness in Yucatan | UADY |
| **13: 30 pm** | Field Visit 4: Visit to public hospitals in Merida Yucatan | Ramon Sanchez, Carlos Vinajera and Director of Civil Protection and Preparedness in Yucatan | Merida Yucatan |

**January 15th – Tuesday**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | **Techniques to assess health and environmental damages from air and water pollution** | Ramon Sanchez | UADY |
| **10:30 am** | Techniques to monetize health damages from air and water pollution (air pollution epidemiology, willingness to pay studies, Value for Statistical Life saved, cost of care estimations for morbidity damages) | Ramon Sanchez | UADY |
| **13:30 pm** | Field Visit 5: Visit to urban settlements in Merida to understand the needs of people in developing cities and how they relate to SDGs (clean water, sustainable buildings, renewable energies, energy efficiency, solid waste disposal, waste water treatment, reduction of heat islands, prevention of chronic diseases, etc.) | Ramon Sanchez and Carlos Vinajera | Merida Yucatan |
|  |  |  |  |

**January 16th – Wednesday**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | **Workshop on how to structure information from communities, climate change resiliency opportunities and fulfillment of SDGs to prepare a business plan for a sustainable or social business startup** | Ramon Sanchez | UADY |
| **13:30 pm** | Techniques to prepare a business or social pitch to innovation and social investors | Ramon Sanchez | UADY |

**January 17th – Thursday**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | **Meetings with every group to evaluate and improve preliminary business or social propositions** | Ramon Sanchez, Carlos Vinajera and group of faculty from a local Business School | UADY |
| **13:30 pm** | Optional Field Visit 6: Mexican National Council for Science and Technology in Yucatan | Ramon Sanchez | Merida Yucatan |
| **16 pm** | Wrap up and take away | Ramon Sanchez | Merida Yucatan |

**January 18thth – Friday**

|  |  |  |  |
| --- | --- | --- | --- |
| **Time** | **Class** | **Instructor** | **Local** |
| **09:00 am** | **Business or Social Pitches for startups developed in the class** | Ramon Sanchez, Carlos Vinajera and group of faculty from a local Business School | UADY |
| **13:30 pm** | Final feedback for business and/or social plans | Ramon Sanchez, Carlos Vinajera and group of faculty from a local Business School | UADY |
| **16:00 pm** | **Wrap up and take away** | Ramon Sanchez, Carlos Vinajera and group of faculty from a local Business School | UADY |

**Course/Travel Preparation**

In preparation for travel, students should read the *Harvard University International Travel Handbook* (<http://www.fas.harvard.edu/~oip/handbook/handbook.pdf>).

Any student who thinks s/he may be engaged in research involving human subjects, such as focus groups, individual interviews and similar activities, must apply to the Human Subjects Committee for appropriate authorization during Fall 2. For more information on this please visit <http://www.hsph.harvard.edu/ohra/>.

**Course Agenda**

**DAY 1: Monday, January 7th, 2019**

Introduction and scope of the course, principles of the UN Sustainable Development Goals

**Learning objectives:**

* Discuss driving forces innovation and their relationship to solving environmental and health problems
* Analyze each one of the United Nations Sustainable Development Goals and determine its most common performance metrics
* Understand the relationships between SDGs and well-being, environmental and human health protection

**Required Reading:**

* Read pages 12 to 23 of the document that first presented the Sustainable Development Goals, available at <http://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf>
* Read Annex 1, 2 and 3 about ways to assess performance metrics for the Sustainable Development Goals, available at <https://sustainabledevelopment.un.org/content/documents/1684SF_-_SDG_Universality_Report_-_May_2015.pdf>

**DAY 2: Tuesday, January 8th, 2019**

Principles of climate change, differences between climate change mitigation and adaptation projects, techniques to assess community climate change vulnerabilities

**Learning Objectives:**

* Understand the causes and potential consequences of climate change
* Discuss the differences between climate change mitigation and adaptation projects
* Learn about climate change mitigation and adaptation technologies and practices
* Learn how to engage the community into determining their main “neural points” to assess climate change vulnerability
* Learn how to create scenarios of potential failure modes in community systems to assess their current controls in terms of occurrence, severity and detection levels to extreme weather events and chronic climate change issues
* Learn how to estimate and climate change vulnerabilities for each community system and increase resiliency using risk management techniques from NASA and the U.S. Military

**Required Readings:**

* Global Climate Change Impacts in the United States. US Global Change Research Program, available at <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>

*Read executive summary and key findings*

* Turn Down the Heat Report

[*http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/06/14/000445729\_20130614145941/Rendered/PDF/784240WP0Full00D0CONF0to0June19090L.pdf*](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/06/14/000445729_20130614145941/Rendered/PDF/784240WP0Full00D0CONF0to0June19090L.pdf)

## Sanchez, Ramon (2014). Use of Failure Mode and Effects Analysis to assess community climate change vulnerability (document to be provided in the course’s website)

**Recommended readings:**

## U.S. Department of the Interior Climate Change Adaptation Plan, available at <https://www.doi.gov/sites/doi.gov/files/migrated/greening/sustainability_plan/upload/2014_DOI_Climate_Change_Adaptation_Plan.pdf>

## Implementation of recommendations from the Presidential Commission on the Space Shuttle Challenger (NASA) <http://history.nasa.gov/rogersrep/v6ch3.htm>

**DAY 3: Wednesday, January 9th, 2019**

Market intelligence techniques and transformation of community needs into robust value propositions

**Learning Objectives:**

* Learn how to use the Harvard Electronic Library and how to use some resources offered by the Environmental Library at Harvard
* Learn how to use Google Search operators to optimize search activities in the open internet,
* Learn how to use the Quality Function Deployment methodology to transform basic customer requirements into products/services that exceed customers’ expectations

**Required Readings:**

1. Link to the Environmental Library at Harvard available at <http://guides.library.harvard.edu/enviro>
2. Links to Google Search Operators: <http://www.googleguide.com/advanced_operators_reference.html>
3. Quality Function Deployment Methodology (document will be uploaded to the course’s website)

**DAY 4: Thursday, January 10th, 2019**

Intellectual property, techniques to enhance creativity and innovation and sustainable design principles

**Learning Objectives:**

* Learn the principles of intellectual property and some of its components such as patents, trademarks, copyrights, geographic indicators, utility models and trade secrets
* Learn how to search for a patent or trademark in the United States of America and the rest of the world
* Learn the basic process to write a patent to protect a technical idea or how to use copyrights to protect a business or social model
* Learn how to use utility models to protect your ideas in countries with “low respect” to intellectual property
* Learn different techniques to enhance creativity and innovation like brainstorming, De-Bono techniques (“six thinking hats”), mind maps, patterns of technical evolution for technological systems, theory of invention problem solving, etc.
* Learn about Life Cycle Thinking and the basic principles to frame and perform a Life Cycle Assessment to determine lifetime environmental and health damages from products or services
* Learn the basic principles of sustainable product and/or service design based on type of product and energy use during its lifetime operation
* Understand the stage-gate design review process used to manage a new product introduction process
* Understand the lessons learned for launching a new product or service

**Required Readings:**

* Link to the United States Patent and Trademark Office <http://www.uspto.gov>
* Carayannie E.G. et al. (1998), *The Wealth of Knowledge, Converting Intellectual Property into Intellectual Capital*. Available at:

<http://www.uni-klu.ac.at/wiho/downloads/CARAYANNIS_IPR_IJTM.pdf>

**DAY 5: Friday, January 11th, 2019**

Visit to Chichen Itza Mayan ruins

**Learning Objectives:**

* Understand the lessons learned on climate change vulnerability and resiliency from the past
* Discuss how SDGs and climate change preparedness could have been applied to prevent sudden depopulation of Mayan sites due to sudden climate change
* Understand some techniques to engage the community in climate change preparedness activities by determining key stakeholders, establishing implicit “social contracts” and by promoting sharing benefits by making local people partners in new renewable energy facilities or sustainable startups
* Learn the history and most common social equity and economic issues related to indigenous communities around the world

**Required Readings:**

* Peterson and Haug (2005). Climate and the Collapse of Maya Civilization. American Scientist, Volume 93. Available at <http://www.columbia.edu/itc/sipa/envp/louchouarn/courses/Clim-Wat/Wat/Drought-MayanCollapse(AmerSci05).pdf>

**DAYS 6 & 7: January 12th – January 13th**

Weekend activities are optional for students

**DAY 8: Monday, January 14th, 2019**

Presentation of climate change preparedness plans

**Learning Objectives:**

* Learn how to present a climate change preparedness plan to a community that includes vulnerability assessment and resiliency enhancement recommendations
* Learn how to use information from climate change preparedness plans to derive clear business or social propositions related to SDGs that can serve as the business or social cases for new positive startups

**Required Readings:**

* Climate Change Vulnerability Assessment Report for the City of Cambridge Massachusetts, available at <https://www.cambridgema.gov/cdd/projects/climate/~/media/307b044e0ec5492bb92b2d8fa003ed25.ashx>

**DAY 9: Tuesday, January 15th, 2019**

Techniques to assess and monetize health and environmental benefits of achieving SDGs

**Learning Objectives:**

* Learn basic techniques on how to assess the health and environmental benefits of achieving SDGs
* Learn how to do an environmental Benefit-Cost Analysis (BCA) in projects that aim to reduce air and water pollution
* Learn some techniques on how to monetize health damages to include them in BCA
* Understand the basic process to do a willingness-to-pay (WTP) study and variability of WTP around the world based on national incomes and life styles
* Understand the concept of Value for Statistical Life saved (VSL) used to monetize mortality costs
* Learn how to estimate basic values for VSLs for different countries based on per capita purchase power income differences based on techniques used by the World Bank and other international financial institutions
* Learn how to use cost-of-care to estimate morbidity damages for different health outcomes caused by air and water pollution
* Learn how to use discount techniques for assessing the real life-time costs of infrastructure and/or health projects used in BCA
* Learn about other techniques to estimate co-benefits of increasing access to nutritious food, reduce gender inequalities in labor, reduce child labor, etc.
* Learn the principles of net-positive thinking for assessing the “ripple effects” of sustainable and social startups

**Required Readings:**

* Dockery D, Six Cities, NEJM, 1993. -- First cohort study of air pollution and mortality.
* Lelieveld and Evans (2015), Mortality from PM in 2010 and 2050 by Source Class, Nature

**DAY 10: Wednesday, January 16th, 2019**

Building a sustainable or social business plan and presentation for innovation investors

**Learning Objectives:**

* Learn how to structure and write a business plan for a sustainable, health or social startup
* Learn how to structure and do a presentation to pitch a new startup in sustainability, health or social development
* Learn how to identify the right innovation investor for your startup and to select the right mechanism to facilitate getting funded: Angel investors, venture capitalists, venture philanthropists, foundations, crowdfunding, cooperatives, etc.
* Learn how to find the right people with complementary skills to form a robust startup in sustainability and health

**Required Readings:**

* “Startups Lead the Way to Crack the Unsolvables” <http://www.greenbiz.com/blog/2014/01/24/startups-lead-way-cracking-unsolvables>
* Kawasaki, Guy, “The Art of the Start: The Time-Tested, Battle-Hardened Guide for Anyone Starting Anything,” Portfolio, 2004

Chapter 1, The Art of Starting

Chapter 2, The Art of Positioning

Chapter 6, The Art of Recruiting.

**Recommended readings:**

* Chahine T. (2016). Introduction to Social Entrepreneurship. CRC Press.

**DAYS 11 & 12: Thursday, January 17th & Friday, January 18th, 2019**

Improving and presenting a business or social value proposition to innovation investors

**Learning Objectives:**

* ​Learn how to use risk management and assessment of beneficence based on SDGs to emphasize positive features of new social, sustainable and health ventures
* Learn how to pitch a business or social value proposition to different types of innovation investors
* Learn how to use feedback from business or social pitches to improve value propositions and chances of getting funded for social, sustainable or health startups
* Learn how to connect entrepreneurs in developing countries with innovation investors in developed innovation hubs to enhance chances of getting funded for ventures that help in fulfilling SDGs

**Required Readings:**

* Kawasaki, Guy, “The Art of the Start: The Time-Tested, Battle-Hardened Guide for Anyone Starting Anything,” Portfolio, 2004

Chapter 4, The Art of Writing a Business Plan

Chapter 3, The Art of Pitching

Chapter 7, The Art of Raising Capital.

**Recommended Readings:**

* Lovins L.H. & Cohen B. (2012). The way out: kick-starting capitalism to save our economic ass. Hill and Wang