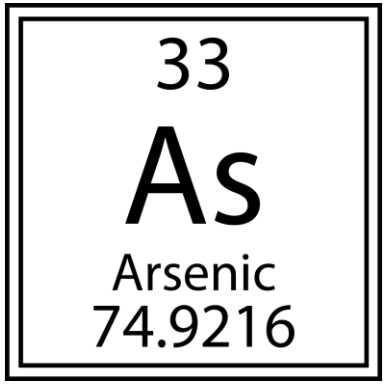


Development Engineering

CSEP 590B

Ashok Gadgil (UCB) & Richard Anderson

May 26, 2020

Today – Removing arsenic from drinking water

- Announcements
- Ashok Gadgil, UC Berkeley,
- Discussion Ashok

Announcements

- Discussion Sections – Zoom – Attend one
  - Wednesday: 3:00-4:00 pm
  - Wednesday: 5:00-6:00 pm

- Homework 8, Due June 1.
  - Short paper comparing today's topic with others in course
  - Submit by email
  - Course grade based on 7 of 9 assignments

- Next weeks lecture: Monday, June 1, Jenny Aker, Tufts

Course Schedule

Date	Topic	Lead
April 6	Engineering the Vaccine Cold Chain	Richard Anderson
April 13	Community Cellular Networks	Kurtis Heimerl
April 20	Remote Temperature Monitoring	Martin Lukac, Nexleaf
April 27	Election Monitoring	James Long
May 4	Global Goods Software	Skye Gilbert
May 11	Voice Based Social Networks	Aditya Vashistha
May 18	Open Data Kit	Waylon Brunette
May 26	Removing Arsenic from Drinking Water	Ashok Gadgil
June 1	Fintech for Rural Networks	Jenny Aker
June 8	Development Engineering Discussion	Temina Madon and Anustubh Agnihotri

Framework for Development Engineering

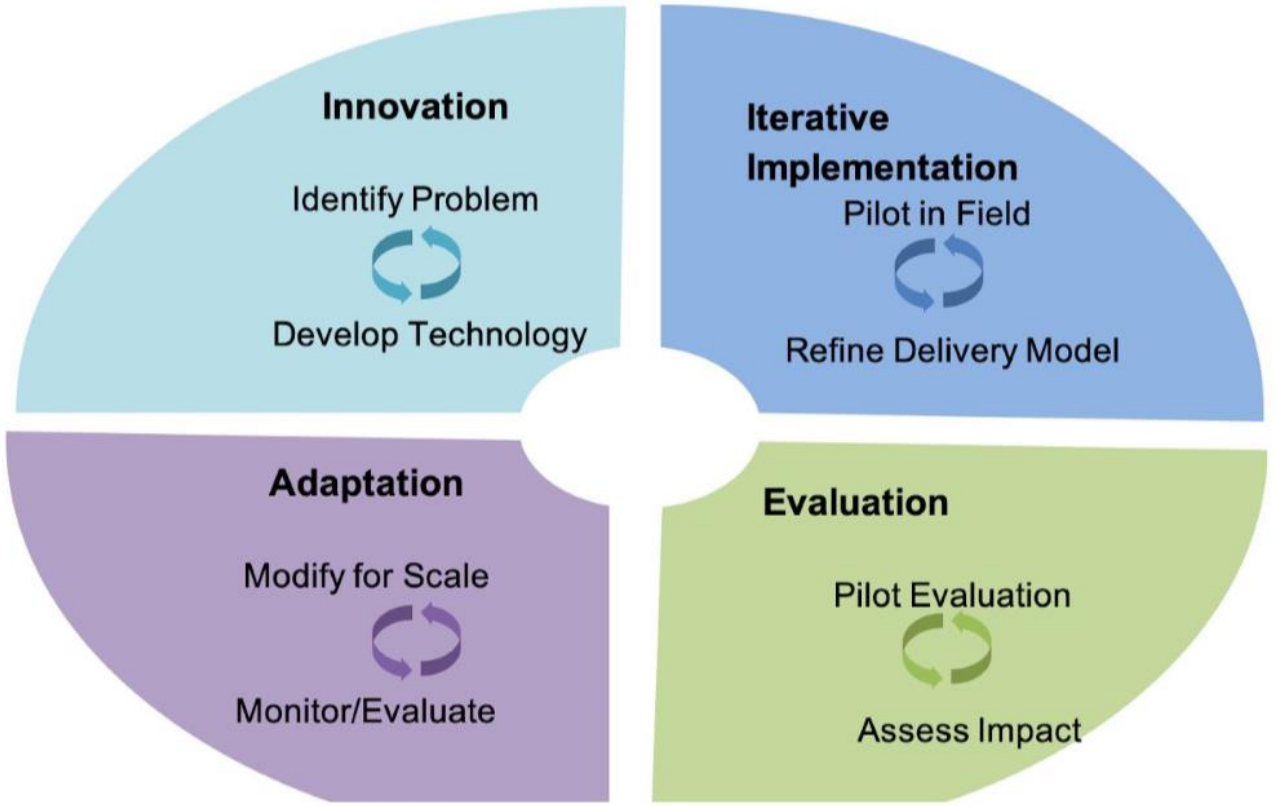
The field of Development Engineering (or DevEng) is focused on accelerating progress toward the SDGs, through the discovery of technological solutions that can achieve impact, at scale, in resource-constrained settings.

Antecedents: Appropriate Technology and Frugal Innovation, Market oriented approaches, Humanitarian Engineering, ICTD, Human-centered and participatory design

Market Constraints

- Income uncertainty
- High transport costs
- Shallow markets
- Lack of risk markets
- Labor market failures
- Missing human capital
- Input/output market inefficiencies
- Market distorting policies
- Capital constraints (weak credit markets)
- Missing information
- High transaction costs

Research Workflow

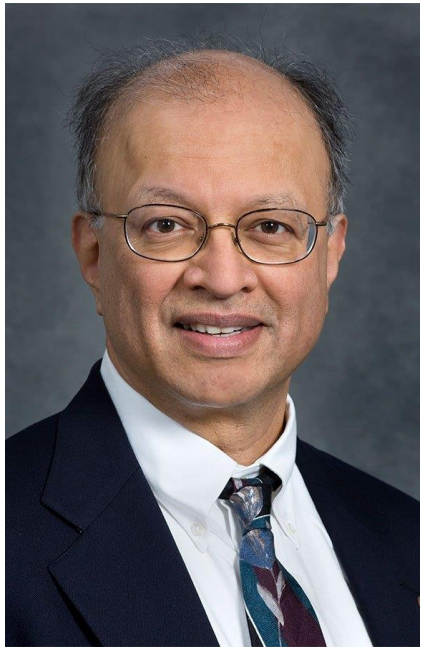


How do the case studies presented in this course compare as engineering projects?

- Innovation
- Iteration
- Adaptation
- Evaluation

- For each project, what is the theory of change?

Today – Ashok Gadgil, UC Berkeley



- Faculty Senior Scientist, Lawrence Berkeley National Laboratory
- Professor of Civil and Environmental Engineering, UC Berkeley
- Education
  - BSc Physics, University of Bombay
  - MSc Physics, IIT Kanpur
  - PhD Physics, UC Berkeley
- Awards
  - Indian National Academy of Engineering, National Inventors Hall of Fame, National Academy of Engineering, Lemelson-MIT Global Innovator Award

Over to you Ashok . . .