As a sociologist and participant observer of iGEM project, my own objective had been to make sense of knowledge building processes and inherent risk and uncertainty that goes along with it. It was a great gesture that the iGEM IIT Delhi team invited and allowed me to literally follow each and every step in the process – often tolerating my intrusion to their personal lives. Starting from the first orientation cum recruitment session conducted in February for the student community of IIT Delhi, I have closely followed the team till the time they shipped their BioBricks in September 2015.

While orientation presentation was attended by more than 125 enthusiasts, around 80 students appeared for the subsequent recruitment interviews. Team mentors shortlisted 42 students for subsequent training and project work. It is to the credit of teams' past experience that they could create clear division of work though with flexible boundaries. The team initially functioned under different heads viz. lab, marketing, marketing, creative, public relations. Over the period, as it goes with any voluntary activity, final team now comprises of 22 members, including 4 MS/PhD mentors. All along these seven months apart from observing team activities and documenting for my own PhD research, I contributed to team effort by taking pictures, editing emails, reminding about planned activity, reviewing wiki pages, and assisting in lab work like cleaning desk or moving around samples. One important aspect of my participation, from the teams' perspective was to help team brainstorm ideas on 'human practices' component of iGEM competition.

It can be said that iGEM IIT Delhi team has clearly internalized broader objective of the competition e.g. the email circulated to campus community for orientation session in February stated - "The theme of the competition is to develop systems that harness the power of synthetic biology to solve pressing modern day challenges". The challenge which they chose is the issue of pollution – rather an obvious issue, given the fact that Delhi is the world's most polluted city. A great number of ideas were thrown and discussed during the brainstorming sessions – often involving more than 30 participants. However issues of safety, feasibility, cost, complexity, and relevance played a crucial role in identifying project. During consultations with faculty members, ideas like swallowing modified EColi bacteria for detection of peptic ulcer were put off due to concerns related to human health. Other ideas like a bacteria based camera or piano too were judged as less relevant. Issue of pollution thus became a working theme, with its potential to bring in positive change to everyday life.

As a matter of responsible innovation, iGEM teams are expected to 'go beyond the bench' and pay close attention to what is termed as 'human practices'. According to iGEM website, "Human Practices is the study of how your work affects the world, and how the world affects your work". As mentioned above, this teams' project originated in a deep concern for pollution and environment. Team started its first dialogue with public as early as March 2015, by participating and showcasing their ideas at 'Tryst' (a science and technology festival which draws huge participation of college students). This was followed by exhibition of teams' work in 'Open House', which is a public engagement event of IIT Delhi showcasing achievements in research. During extensive brainstorming sessions several ideas were generated and team needed to scrutinise these ideas in terms of risk, health, cost, and ethics along others. A consultation with faculty members, allowed the team to understand nuances and potential effect of their work. Team members also took time to mentor other teams in India, by sharing solutions to issues they had faced in the past. Further, the team also interacted with other iGEM teams at a national meet organised at Pune, sharing challenges faced by the team. Though one major reason to engage department of biotechnology (DBT) was to bring in funds, it also in a way affected policy makers by making them aware of the urgent needs of the student community who are working on novel technologies. Further, engagement with public was pursued through series of interactions at a popular park in Delhi as well as through education cum awareness camp for children in association with Aaina (a NGO). Making a crowd funding video and putting an appeal to people on the world wide web also allowed the team an opportunity to reflect why their work is relevant and what more they can do to responsibly innovate. One important aspect team realised during this venture was, they aren't addressing the carbon emission problem. Briefly for two weeks this aspect too was discussed, but given the time constraint team

couldn't pursue it further. Nevertheless that showed teams' responsiveness to issues at hand. On two separate occasions, team presented their work to newly joined undergraduate students, in part motivating them to join teams' efforts. A major collaboration is also underway with team 'Enactus' of IIT Delhi, which is working on designing pollution free (indoor) stoves for rural population by using inexpensive chimneys that release fumes to the outside air. The idea is to reduce the outdoor pollution caused by stove fumes using iGEM teams' bacteria culture. A site visit to a village and survey of practical issues was carried out by the team in this regard. Further, team also managed to draw attention of policy makers, by visiting Chief Minister of Delhi state. During the meet Chief Minister was informed about the urgent need to tackle the issue of pollution, and how team is working on a potential solution. Team also attempted interaction through other platforms apart from its Facebook page e.g. a short byte for NDTV (a leading news channel) about the project. Some outreach efforts did not fructify e.g. radio time, newspaper article. Overall though, iGEM IIT Delhi team has made tremendous amount of efforts on the front of human practices, while as a matter of fact team had been struggling with resources including human, monetary, infrastructure, and time. Social context has thus constantly informed iGEM IIT Delhi teams' work.