Syllabus

Community-Based Design

CEE 398-1,2
Winter 2017

Kimberly Gray – Instructor

Course Description: The purpose of this course is to provide technical assistance to community groups throughout the Chicago region who face environmental problems (or opportunities) and issues that endanger their health or quality of life. Students will work on real environmental challenges with real clients and find real solutions that often lead the path to resolving the problems. Students must enroll in the course for 2 quarters to receive credit. Students are given a choice of projects and are organized into team. They review all the materials about their project, write a project proposal detailing what is to be done, determine what additional information is needed, visit the site (when appropriate), develop a time-line and then provide periodic progress reports (typically every other week). As needed, the students may attend community meetings, public hearings, expert testimony, or meetings with regulators. Course work is highly individualized and individual group meetings are scheduled as needed. The deliverables for the class are a final written report and presentation due at the end of Spring quarter.

Permission needed for registration

In 2017, 3 students will have 9 projects to choose from:

1. NU Environmental Advocacy Center, NU Law – Deborah Gail Musiker Chizewer
   (Debbie.M.Chizewer@law.northwestern.edu; http://www.law.northwestern.edu/legalclinic/environmental/)

Lead Exposure – water & indoor air - Lead Pipes: First, I want students to assess the best way to test the water. It is complicated because EPA used sequential testing (up to 15 draws of water to capture water standing at different points in the pipe), which will likely become the norm/rule at some point, but is not currently required under the Lead and Copper Rule. Instead, the city merely would have taken two draws from the tap. My understanding is that trying to test all of the properties could be misleading because the same property could have different results one week later. Some have suggested that it may be more appropriate to come up with a sample selection and test those properties over time to get a better feel. This does relate to your monitoring idea, which makes sense to me. There is a sub-question about whether sequential testing is possible for this sample selection or whether it is cost-prohibitive. Second, I want the students to consider the best filter options considering multiple taps within a home. Some suggest a whole house filter but others say that the science is not there yet to determine whether the whole house filter is effective.
Indoor lead dust: Actually, the source of the indoor lead varies and can be caused by lead paint or tracking in contaminated dirt from outside. The project would involve evaluating indoor lead dust testing techniques as well as abatement options.

2. Chicago Legal Clinic – Keith Harley (kharley@kentlaw.iit.edu; http://www.clclaw.org; https://www.kentlaw.iit.edu/academics/jd-program/certificate-programs/environmental-and-energy-law/chicago-environmental-law-clinic)

(a) Coal-fired electric power plant closures – Investigate consequences of closure on electric power supply and on health

(b) Cicero-based environmental organization in the the air permit hearing/written comment period for the MWRDGC Stickney WWTP.

3. Delta Institute – Ben Shorofsky (bshorofsky@delta-institute.org; http://delta-institute.org)

(a) Mobile Reuse Center: This past year, we were recipients of the Knight Cities Challenge for our work in Gary called Steel City Salvage. You can read more about it here: http://delta-institute.org/delta/wp-content/uploads/Steel-City-Salvage-Sheet.pdf, and http://www.chicagotribune.com/suburbs/post-tribune/news/ct-ptb-gary-knight-winner-st-0412-20160412-story.html. For this project we are pilot testing three different business models for building material reuse in Gary and Northwest Indiana. One of those is a mobile reuse center that can travel to different areas in the city and surrounding community. The thought would be that this truck, vehicle, bus, storage pod that gets moved, would be able to sell some amount of material but could also provide ancillary services such as easy installation of doors, quick home repair training, advice on city building support services etc. This would be an interesting design challenge trying to figure out what type of set up could work best. Also thinking through what type of services are needed and how best to provide them. We would love to work with a team of students to help us design this mobile operation including services offered, timing, organization management, truck or pod design to maximize use, etc.

(b) Interim brownfield management strategies utilizing conservation strategies: To some extent phytoremediation is one such strategy, but there are so few hybrid poplar clones available. Others include clover, temporary parklets, moveable urban farming, etc. We are looking for students to identify the options available for interim land use, design a guide and decision making processes, and create a presentation for communities managing blight on how these strategies might be useful.

(c) Light Prototyping of Impact Assessments for Better Informed Community Decision Making: Impact Assessments are confusing and complicated for legal reasons. We understand they need to be but we want to make that type of information useful for community groups and stakeholders. We want to develop a tool and framework that allows a community group to do a “light” environmental site assessment and then outputs the information in a useful
way. Students would need to look at the information collected in site assessments, distill the important bits, and design a way to collect and present that information in a useful way.

4. **Center for Neighborhood Technology** – Steve Perkins ([steve@cnt.org](mailto:steve@cnt.org); [http://www.cnt.org](http://www.cnt.org))

(a) CNT has received funding for a two-year exploration of *integrated water management* in the Great Lakes Basin, particularly in “weak market” (aka shrinking) cities like Detroit. We will be looking at best practice in terms both of technology and of financing/governance. CNT’s experience is that all of the energy in these studies typically goes to evaluating the widgets, and very little in the institutional, regulatory and financial barriers to their adoption. A student team would identify best practices in integrated water management.

(b) **SPARCC (Strong, Prosperous, and Resilient Communities Challenge - [https://www.nrdc.org/experts/shelley-poticha/sparcc-collaborative-path-equitable-community-development](https://www.nrdc.org/experts/shelley-poticha/sparcc-collaborative-path-equitable-community-development)** - CNT is part of the El Platform Chicago Collaborative, a consortium of organizations, led by the Chicago Community Trust, that has responded to SPARCC (Strong, Prosperous, and Resilient Communities Challenge), an initiative of Enterprise Community Partners, the Federal Reserve bank of San Francisco, the Low Income Investment Fund, and the National Resources Defense Council. The initiative seeks to promote a “collaborative path to equitable community development.”

Chicago was selected as one of eight cities eligible to compete for one of six awards of $1 million/year for three years to improve equity, health, and climate in some of Chicago’s poorest neighborhoods. If successful, the Chicago Community Trust will commit an additional $250,000/year. The Chicago proposal focuses on making Transit Oriented Development work for low- and moderate-income families in two different settings:
- **Disinvested Communities.** Includes Garfield Green Line stop in Washington Park, and Kedzie Green line stop in Garfield Park. These are neighborhoods which have experienced the most negative health, climate and equity outcomes as a result of the city’s history of entrenched segregation. In these communities, there is the most potential for reclamation of transit assets, and to activate land toward climate and health objectives.
- **Ascendant Markets.** Includes California Pink line stop in Little Village, and Logan Square Blue Line stop. If the Collaborative Table is to fully leverage the current institutional recognition of Chicago’s entrenched residential segregation, it will not be enough to solely pursue equity, health and climate mitigation/resilience in low income communities of color. Racial equity must be a priority citywide, which includes the preservation of affordability and accompanying quality of life services for low income residents of color in currently “hot” markets.

5. **City of Highland Park** - Kim Stone (Councilwoman; [kstone@cityhpil.com](mailto:kstone@cityhpil.com); [http://www.cityhpil.com](http://www.cityhpil.com))

*Design of Green Infrastructure for Stormwater Management* - Highland Park is an affluent community on the western shore of Lake Michigan threatened by ravine and bluff erosion.
Downspouts are typically connected to storm drains that discharge directly to ravines or the lake. Although municipal codes allow for GI, there is a lack of local knowledge on the part of homeowners, architects, and city staff as to design options and performance criteria, which creates implementation hurdles. Over the years the city has constructed a handful of green infrastructure projects addressing water quality and low cost maintenance. Currently there are a number of small GI projects underway such as the use of permeable pavers and bioswales in some parking areas and a single city alley. The city is interested in enhancing its resilience for worsening future storms and in addressing decaying infrastructure. There is particular interest in exploring the effectiveness and merits of small GI installations (e.g., bump outs at street crossings) and evaluating the impacts of green roofs constructed on private property. Permitting needs to be streamlined and incentives encouraging private GI installations connected to public systems need to be developed.

**Class Schedule:**

*Winter, 2017*

1. 1/6 – Present project descriptions, Choose and rank 3 projects
2. 1/13 – Project groups organized, explain project proposals and general discussion of how to proceed with projects
3. 1/20 – Contact & visit partner, go through documents, arrange to visit sites (?), investigate project background, determine project scope & goals – NO CLASS
4. 1/27 – Continued - Review documents, investigate project background, determine project scope & goals; write short draft proposal (hand in) – NO CLASS
5. 2/3 - All groups finalize short proposal, hand in & make short (15 minute) make presentation
6. 2/10 – Group 1 - 3 make short in class progress reports
7. 2/17 - Groups 4 - 7 make progress reports – (reschedule)
8. 2/24 - Groups 1 - 3 progress reports
9. 3/3 – Group 4 - 7 progress report
10. 3/10 - All groups hand in (electronically) short progress report relative to proposal goals and timeline;

**Suggested Outline of 2-page Project Proposal:**

1. Problem Statement
2. Goals and Objectives (what steps will you take to achieve goal)
3. Tasks – how to achieve objectives
4. Expected Outcomes
5. Time-line