HDR DSC: The Metropolitan Chicago Data-science Corps (MCDC): Accomplishments and Goals.

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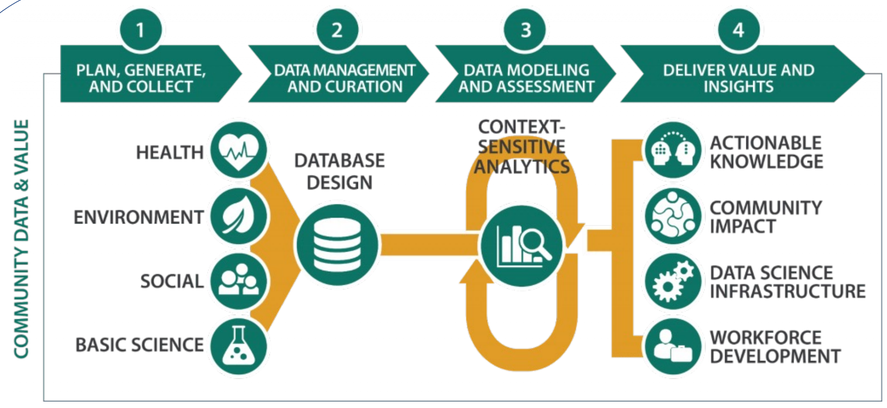
AIMS:

Facilitate the transformation of data into knowledge that is inspiring for and actionable by a community organization.

Contribute to an agile, representative, and inclusive data science workforce via designing and implementing cross-disciplinary training, mentoring, and opportunities for diverse student groups to acquire broad and transferable analytical skills.

Build a community of educators, researchers, and students that can work with communities to discover and disseminate best practices in data science.

Facilitate access to data, real-world data science projects, and data science training materials for the common good.



The MCDC curriculum focuses on nine areas of data acumen that are interwoven in a Data Refinery model, depicted here. Data refining begins with the process of planning, generating and collecting data, and ends with the delivery of insights and knowledge extracted from the data and of value to a community partner.

Educational Structure

1. Students can take **multiple pathways** through a wide range of foundational data science courses.
2. Students participate in a **practicum**, learning communication, domain science, ethical and creative problem solving, and critical thinking. Students work on a real-world data science problem presented by a community partner, while the focus remain on academic and professional development of the students.
3. Students may participate in a 10-week summer internship (**DAU**) in partnership with a community organization and a faculty mentor. Students engage in a more deliverable-oriented relationship with the community partner.

Accomplishments

1. Diversity
- -- Student teams with different backgrounds, experiences, and learning goals.
- -- Non-profit community partners with a wide range of missions and knowledge.
- -- Faculty from different fields with expansive expertise and proficiency.
- -- Wide variety of real-world data science projects.

2. Community Partners' use of Data Science
- -- Successful completion of about 20 projects with 16 community partner organization (see their logos below).
- -- Effective use of data science by community partners to support their mission.

3. Communication
- -- Engaging, supportive cross-university faculty communication for best practices in practicum courses and curriculum development.
- -- Communication with community partners are crucial. Building on pre-existing faculty relationships and trust are extremely helpful for a successful project.
- -- Communication and engagement of student teams with mentors and community partners during projects to provide data, learning opportunities, timelines, feedback, and solutions.

Diverse alliance of universities & cross pollination brings great promise & an opportunity to articulate challenges.

Challenges

1. Diversity.
- -- The level at which students engage with the MCDC course is extremely diverse.
- -- The kinds of projects are also very diverse in nature and therefore in scope and techniques

2. Communication
Each partner follows a different path to MCDC and has different expectations. Consistent messaging and managing expectations is hard.

3. Coordination
Universities have different academic calendars and community partners operate on yet different timelines. Matching projects with practica and DAU teams/faculty mentor requires broad knowledge.

Next Steps

1. Assemble Curriculum Map for Practicum
Pool expertise and experience of practicum instructors and learning professionals towards sharable curriculum.

2. Empower students
Students in DAU teams bring vastly different experience, expertise, and perspectives. We aim to harness each individual's strengths.

3. Community Partner Workshop
MCDC's Community Partner Team conceived a future workshop for learning about potential new partners' missions and to brainstorm and develop project ideas.