



iTReDS: Interdisciplinary Traineeship for Socially Responsible and Engaged Data Scientists

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1 Vision

Saint Mary's College

We believe that a university education should not only develop students that can create and impact the future through their work, but also help them to see the implications for the society of the future that they will contribute to.

2 Program Construct

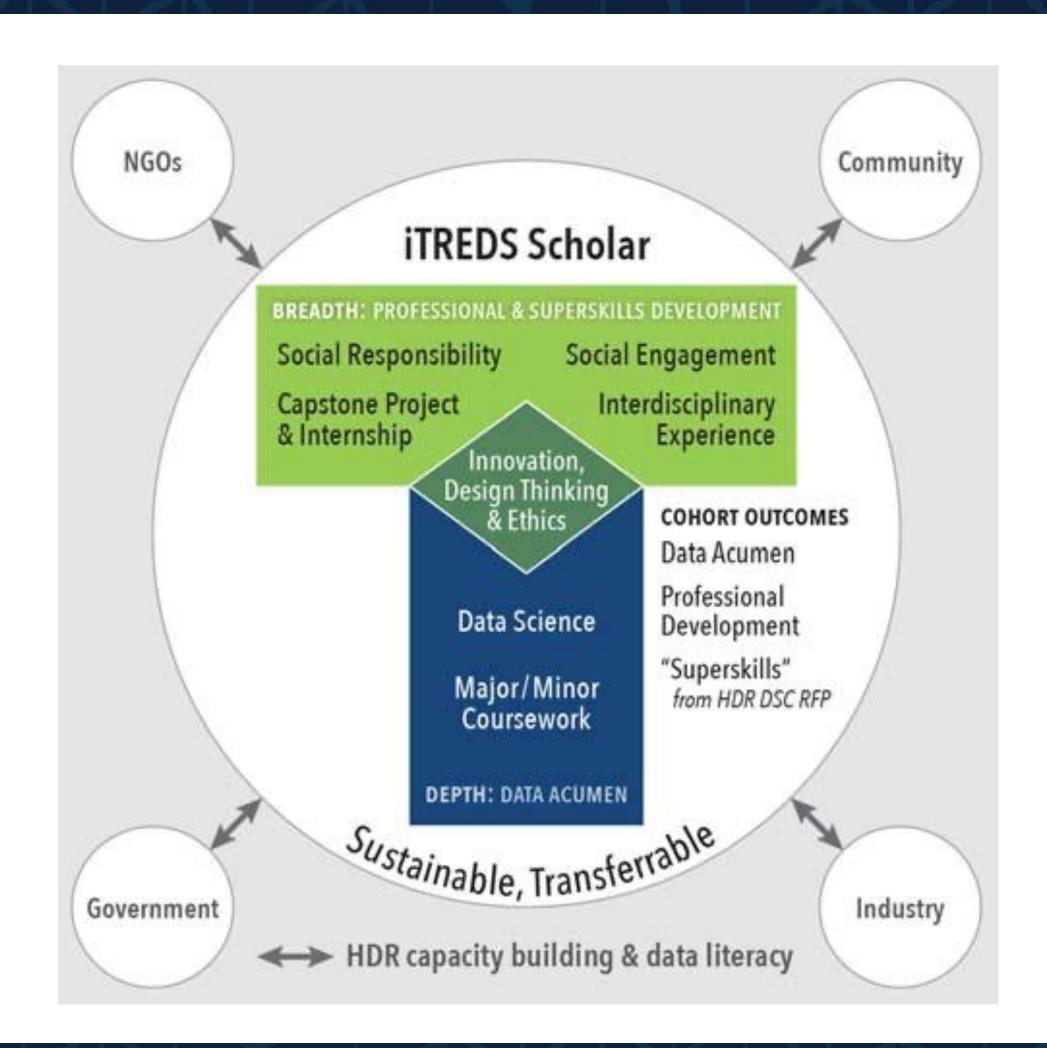
Develop an interdisciplinary and experiential learning program for undergraduate students that enables them to "think and work together" with stakeholders on data-driven problems, while learning relevant skills and concepts.

3 Key Contribution

iTREDS lies at the intersection of data-centered and human-centered approaches. We hope to instill in the "21st century data-capable workforce" a mindset that helps paint a more comprehensive understanding of the problem at hand, and then begin the journey of the data-driven approach towards actionable outcomes.

4 OVERALL FRAMEWORK

The University of Notre Dame (coordinating and implementation organization) and Saint Mary's College (implementation organization, focused on the education of women) will together achieve this vision with an eye towards the outcomes of data acumen, social responsibility, social engagement, and gaining of "superskills" that include teamwork, entrepreneurship, creativity, critical thinking, collaboration, and ethics.



The **T-shaped** construct represents a student's **depth** in data science and major / minor (data acumen), and the **breadth** in activities involving social engagement, social responsibility, and interdisciplinary and experiential learning through the capstone project and internship (professional development and superskills). Design thinking and ethics form the linchpin of this "T".

SOPHOMORE YE	R JUNIOR YEAR			SENIOR YEAR	
Cohort Selection St. Mary's: 10 Notre Dame: 15 A&L: 8, CSE: 7	FALL	SPRING	SUMMER	FALL	SPRING
	Data Science	Data Science Elective	Internship	2-credit Capstone	1-credit Capstone
	Design Thinking	Innovation & Ethics			
	DA Data Science Fundamentals (PD SS Capstone Topic, Stakeholder Engagement Team, Stakeholder	OBJECTIVES (DA) Data Science Depth Incorporating Ethics & Social Responsibility in Capstone (PD) (SS) Capstone Project Proposal	DA PD SS Experiential Learning PD SS Hands-on Training	Social Responsibility & Stakeholder Engagment DA PD SS	Social Responsibility & Stakeholder Engagment DA PD SS

5 Curricular Model

6 Evaluation Plan



Phase 1.1 Program Development Coordination body; decision-making process; course identification and amendments; sustainability plan.

Phase 1.2 Coursework Implementation
Select cohort 1; delivery of iTREDS sequence;
curation of projects and industry challenges for
capstone; create interdisciplinary teams; and
use evaluation feedback for iterative refinement.

iTREDS Program Capstone implementation Phase 2.1 Capstone Implementation
Communication guidelines established;
partnerships and mentors engaged; projects
delivered; partner and mentor feedback;
project guides and rubrics refined.

Phase 2.2 iTREDS Model

Deepen faculty engagement; refine course and capstone elements based on evaluation information; tracking long-term student outcomes; refine overall

Socially Responsible Data Scientists student transformation for 21st Century data-capable workforce

program based on findings.

Key Highlights

- Recruited three cohorts: 71 in total
- 66% women and 19% underrepresented groups
- Capstone projects co-mentored by faculty and community partners
- Students won awards for their research presentation
- Developing sustainable and replicable model

https://lucyinstitute.nd.edu/education/itreds-program/