

# University of Michigan Foundational Course Initiative (FCI)



## Transforming Education at Scale

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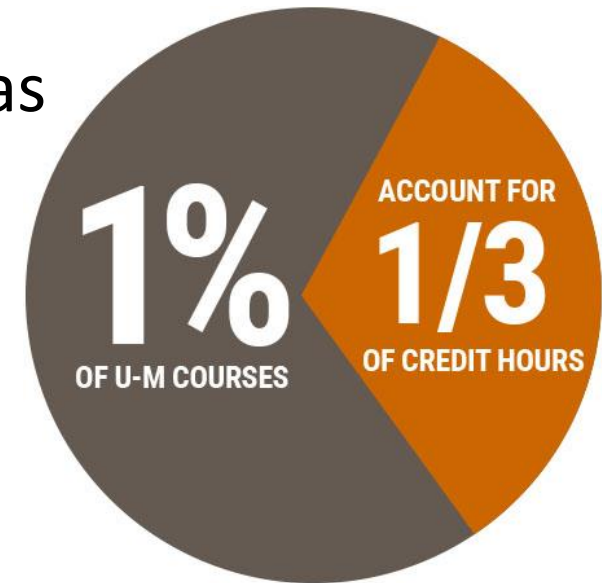
*Physics, Astronomy, Education*

# What Makes a Course Foundational

- Gateway to the major or intro to the discipline
- Large enrollment
- Highly diverse student body
- Highly varied student success
- Relatively stable content, varied instructional team
- FCs are time consuming to teach and manage.

# Why Are Foundational Courses So Important?

- Central to the mission and public image of U-M
- Central to students' lives
  - Can offer chance for discovery or act as gatekeepers
  - Many exhibit performance disparities
- Central to departments
  - Entry point to major/discipline
  - Major source of credits, income (\$150 million)



# What Is the Current Situation?

- Foundational excellence exists in pockets: *courses designed & delivered by dedicated, diverse, sustainable teams.*
- However, we're not institutionally arranged to encourage and support reform.
  - Faculty time and rewards work against broader innovation.
  - **Excellence in foundational courses requires an expanded commitment**

# Why now?

## Opportunities

- Affordances of information age
  - Research suggests how courses can be improved
  - Technology enables personalization at scale
  - Data are ubiquitously available, enabling us to test, iterate, develop contextualized best practices
- President's Academic Innovation Initiative
  - \$5 million in funding over 5 years
  - New staffing and course support

# *Why Now? Faculty Vision*

...expand my class of 350 to 1400, change from lecture format to a hybrid online model with discussion sections, and **make it gameful.**”

*“In my foundational course, if I had the resources, I would....”*

...study the impacts of different course policies on students (e.g. anxiety levels, when they first seek help.)”

...get a more concrete sense of **how students understand the concepts.** We talk about a lot of difficult issues, but grading reflective answers on a weekly basis is onerous for GSIs.”

# Why CRLT?

## Mission Aligned with FCI Goals

*Promote evidence-based innovations in teaching and learning*

*Advance a university culture that*

- *values and rewards teaching*
- *respects and supports individual differences among learners*
- *creates learning environments in which diverse students and instructors can excel*

# Why CRLT?

## Institutional Positioning

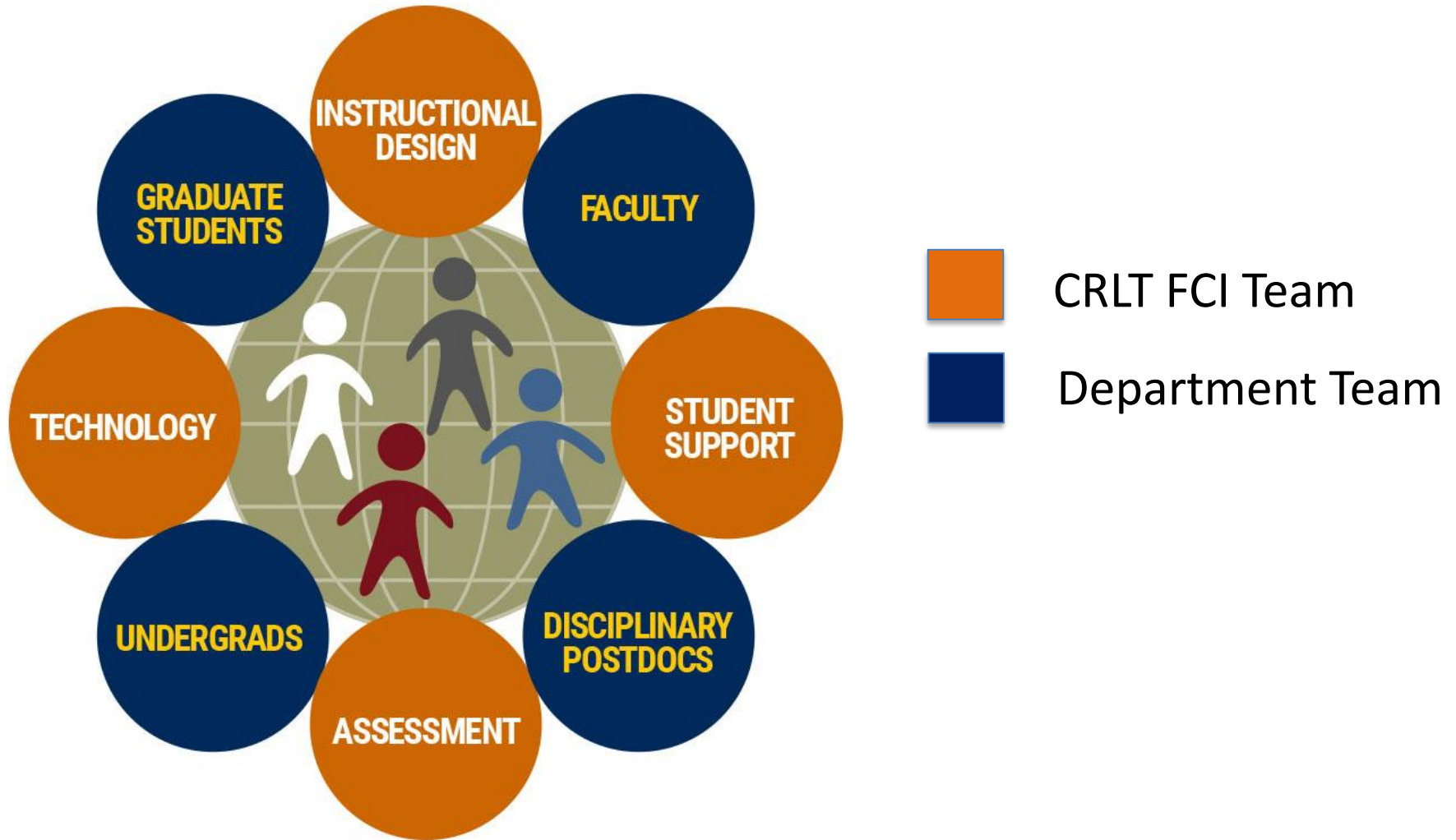
- **Report:** Vice Provost for Academic Innovation
- **Staff:** 22 consultants w/PhDs (10 in STEM)
- **Audience:** All 19 U-M schools and colleges
- **Campus-Wide Services:** consultations, workshops, orientations, web resources
- **Partnerships** with departments, schools, colleges
  - Satellite office in Engineering
  - Teaching academies for new faculty in 10 schools/colleges
  - Evaluation and assessment services
  - Customized workshops, retreats, theatre performances



# FCI Overall Goal: Focus on Student Success

- Enable department teams to “dream big”
- Leverage technology and data analytics
- Employ evidence-based course design
- Focus on inclusive teaching practices
- Research factors that influence student success
- Transform 30+ courses, affecting 80% of students
- Create a new standard for excellence

# FCI Structure: Collaborative Course Design (CCD)



# Departmental Commitments: MOU

- Commit to Collaborative Course Design process
  - Team attends Course Design Institute (5 days)
  - Staffing remains stable
- Develop explicit learning goals for the course
- Measure and report student growth toward these goals
- Support participating faculty, including risk mitigation:  
*“Because course redesign will challenge student expectations of the learning process, students’ initial feedback and evaluations may reflect their discomfort or unfamiliarity with a new and challenging learning environment. We will take this into account for personnel decisions, such as annual reviews and reappointment.”*

# CRLT-FCI Resources: Support & Funds

- Expert, long-term, hands-on support
  - Instructional Technology (IT)
  - Instructional Design & Pedagogy (ID)
  - Student support & Classroom Climate (SS)
  - Assessment & Analytics (AA)
- Funding: \$10,000/course/year to departmental team
- Coordination & communication across projects

# A multiyear growth process

## Design & Exploration

- Development of learning goals and assessment tools
- Building the team & putting them to work on design and development
- Strength testing: quantitative and qualitative exploration of current & recent course offerings

## Development & Testing

- Design based implementation research year
- Team mixes research & practice to adapt/improve design in real time
- Most intense period, with strong additions to the instructional team, observing, learning

## Delivery & Certification

- Course now operating in foundational mode
- Team continues research & practice mix, gradually adapting to new needs & opportunities
- Support scaled back, available for innovation sprints

# FCI Cohort 1

- Business
- Economics
- Engineering
- Film, TV & Media
- Physics
- Public Health

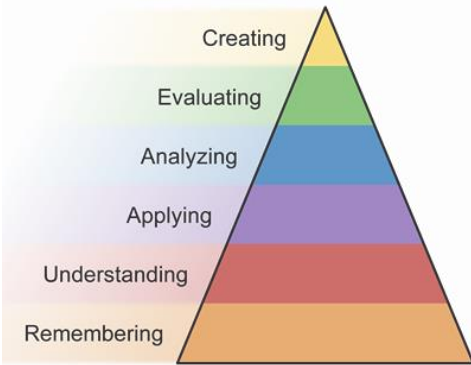
7.8%  
of U-M  
Undergrads

In 2017 – 2018

2,298

students enrolled in FCI  
Cohort 1 courses/sections

# Examples of FCI Work



## Instructional Design & Pedagogy

- Mapping curriculum to examine alignment of course and individual assignments
- Constructing scaffolded homework problems

## Student Support & Climate

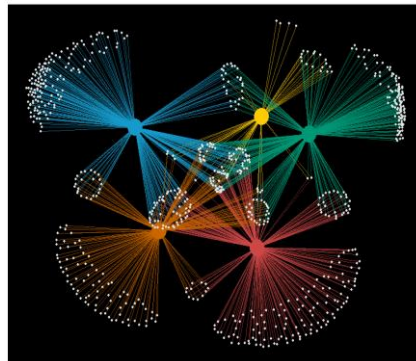
- Liaising with student advising office
- Presenting workshops on inclusive classroom participation



# Examples of FCI Work

## Assessment & Analytics

- Analyzing impact of instructional experiments
- Analyzing student engagement with LMS materials



## Instructional Technology

- Proposing IT tools that align with course goals
- Implementing third party tech tools



# Challenges

- Autonomy and course ownership
- Perceptions of one-size-fits all approach
- Funding for lecturers and other non-tenure-track team members
- Expectation management
- Division of labor within FCI
- Maintaining a sense of collaboration
- Balancing implementation with big picture research