

# Course-Based Undergraduate Research for Equity and Inclusion

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OFFICE OF  
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# Information Literacy

ACRL (2016) framework for higher ed *information literacy*:

“The set of integrated abilities encompassing the reflective discovery of information, the understanding of how information is produced and valued, and the use of information in creating new knowledge and participating ethically of communities of learning”

# What is undergraduate student research?

“an inquiry or investigation conducted by an undergraduate student that makes an *original intellectual or creative contribution* to the discipline”

- [Mission Statement. Council for Undergraduate Research \(CUR\)](#)



What is **original**? (*authentic inquiry, unknown answers*)

**intellectual or creative** (*disciplinary standards*)

What is meant by **contribution**? (*beyond the classroom, circulation, public*)

# Benefits of Undergraduate Research

- Learn a topic in depth
- Learn to work independently
- Build a tolerance for obstacles/failures
- Transforms the student/teacher relationship
- Develops critical thinking and problem-solving skills
- Develops self confidence
- Helps clarify career goals and gain transferable skills
- Improves oral and written communication skills
- Has particular value for students from minoritized groups
- Has positive impact on graduation rates and plans to attend graduate school

# INQUIRY AND ENGAGED LEARNING PRACTICES



## *Employer Endorsement of Select Practices*

*Seven existing and emerging educational practices were tested and employers believe that these practices have the potential to improve the education of today's college students and prepare graduates to succeed in the workplace. These include:*

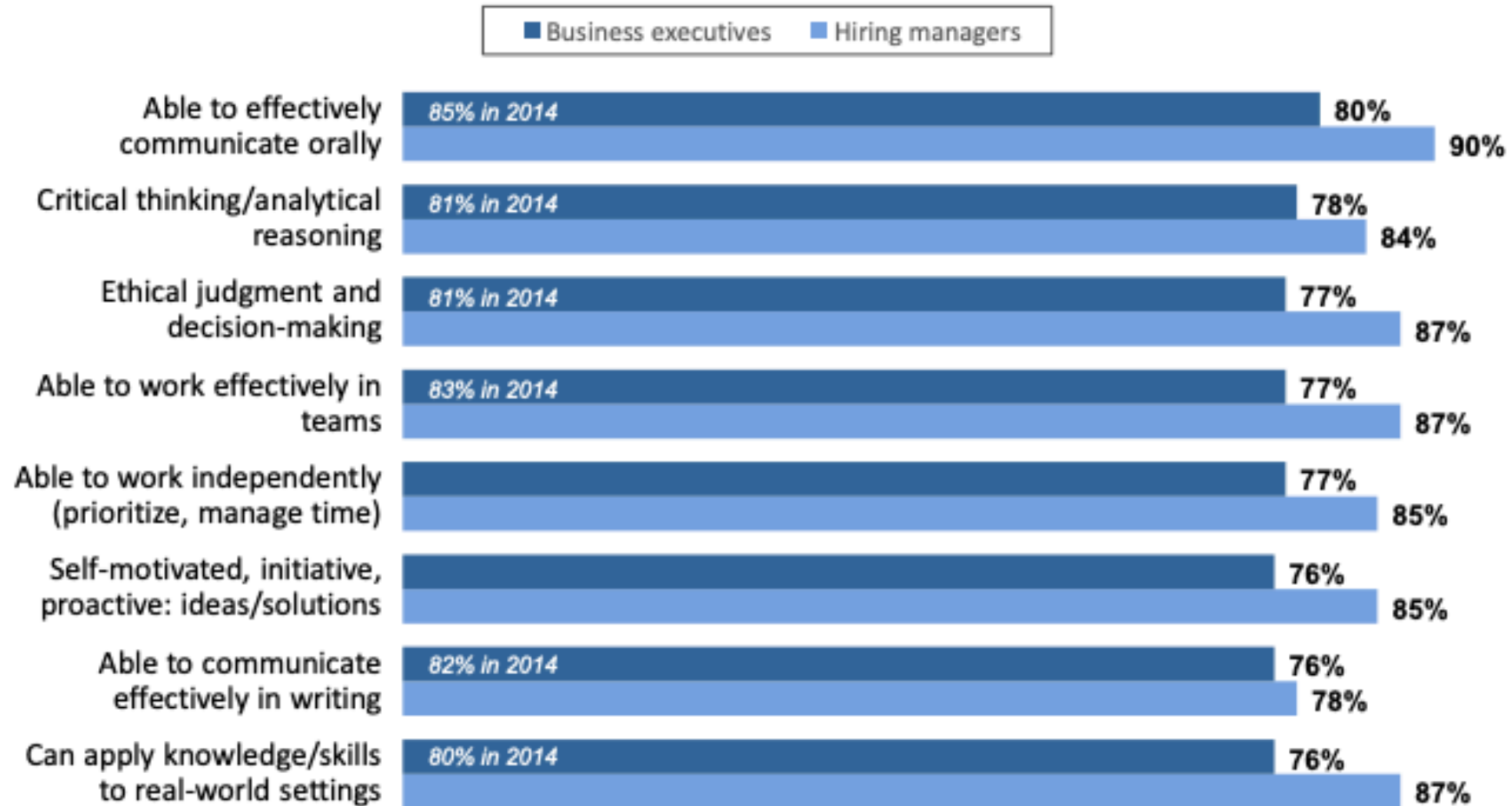
### ***More likely to hire employees with these experiences:***

	Executives	Hiring Managers
Internship/apprenticeship with a company/organization	93%	94%
Project in community with people from diverse backgrounds	72%	83%
Multiple courses requiring significant writing assignments	82%	72%
Research project done collaboratively with peers	81%	81%
Advanced, comprehensive senior project/thesis	80%	76%
Service learning project with community organization	71%	78%
Study abroad program	54%	47%

<https://www.aacu.org/sites/default/files/files/LEAP/5EngagedLearnPractices.pdf>

# The learning priorities that executives and hiring managers value most highly cut across majors.

*Very Important\* Skills for Recent College Graduates We Are Hiring*



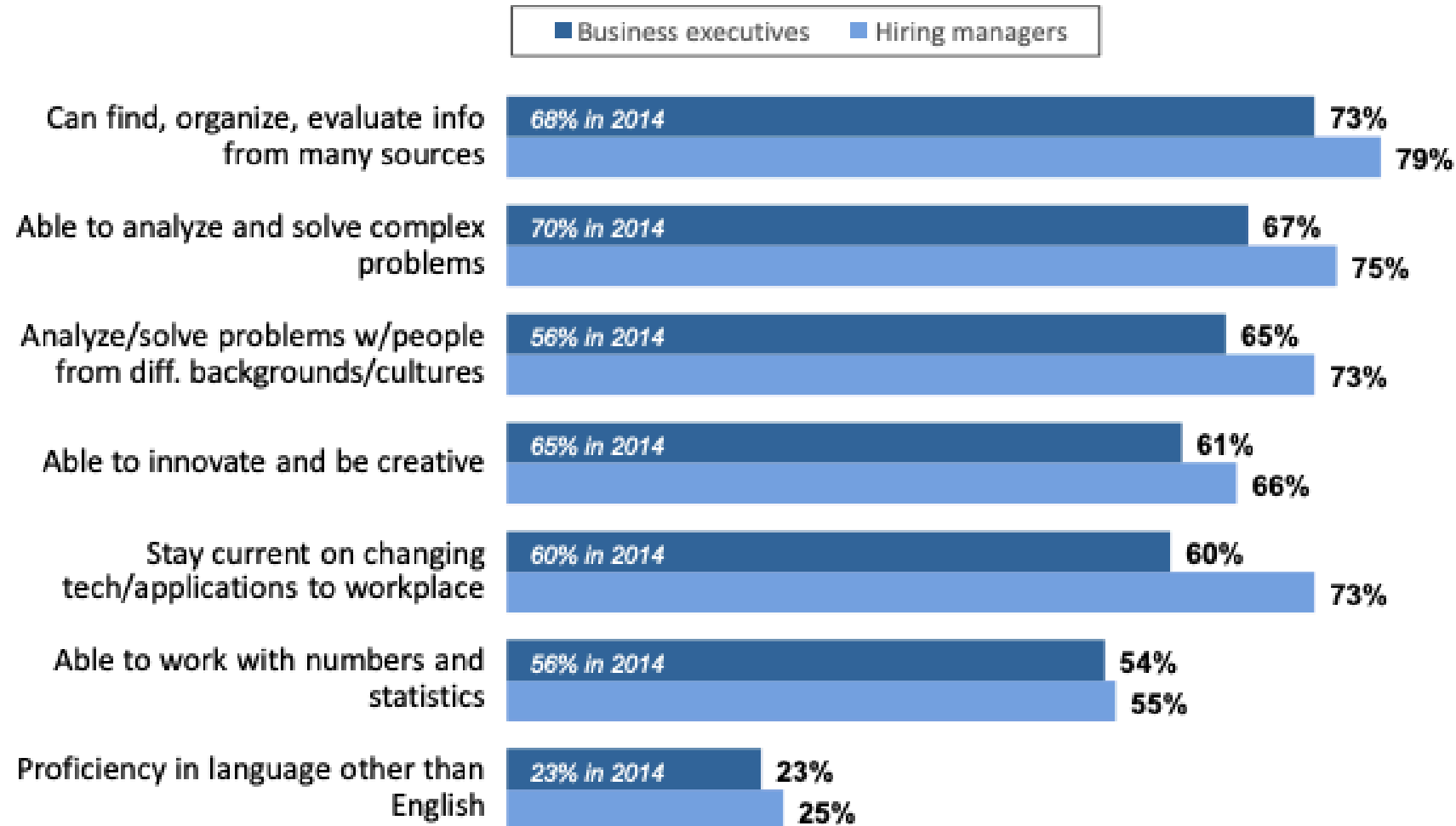
\* 8-10 ratings on a 0-to-10 scale; 15 outcomes tested

AAC&U's 2018

[Fulfilling the American Dream: Liberal Education and the Future of Work](#)

# Executives and hiring managers rank several other learning outcomes as only slightly less important.

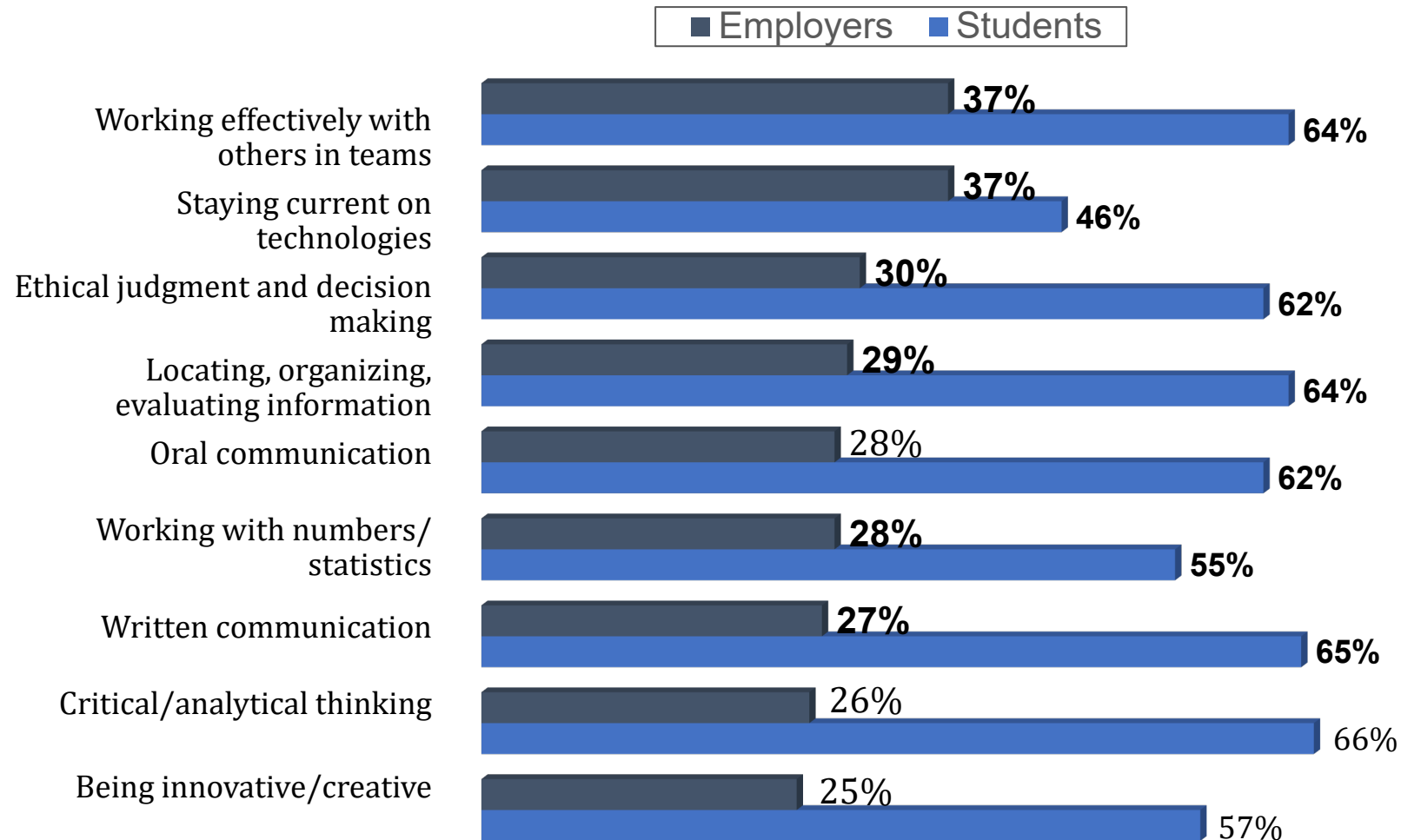
## *Very Important\* Skills for Recent College Graduates We Are Hiring*



\* 8-10 ratings on a 0-to-10 scale; 15 outcomes tested

# Employers give college graduates lower scores for preparedness across learning outcomes than current students give themselves.

Proportions who believe they/recent college graduates are well prepared in each area\*



\*8-10 ratings on zero-to-ten scale

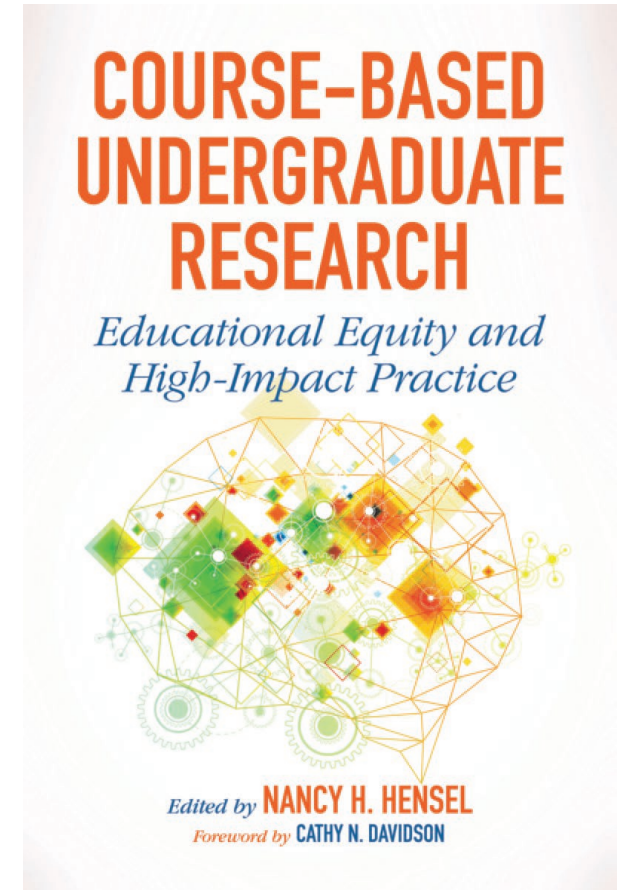


# Barriers to Undergraduate Research

- For Students
  - Who gets invited?
  - Often restricted only to certain kinds of students (e.g. Honors)
  - Students who know to pursue experiences
  - Structural inequities
    - Tuition
    - Lab/course fees
    - Responsibilities outside of class
- For Faculty
  - Reward structure
  - Time investment

# What is a Course-based Undergraduate Research Experience (CUREs)?

- Research embedded in course design
- All students engage in the research project
- Students work collaboratively
- Projects introduce students the methodology of the discipline
- Outcomes of the research are unknown
- Outcomes of the research are communicated in some way



# Also called...

- Course based Research Experiences (CREs)
- Discovery-based research courses
- Inquiry-based research courses

# COURSE-BASED UNDERGRADUATE RESEARCH

*Educational Equity and  
High-Impact Practice*



Edited by **NANCY H. HENSEL**  
Foreword by **CATHY N. DAVIDSON**

## CURAH

The Arts and Humanities Division  
of the Council on Undergraduate Research



### THE NAYLOR REPORT

on  
Undergraduate  
Research in  
Writing Studies

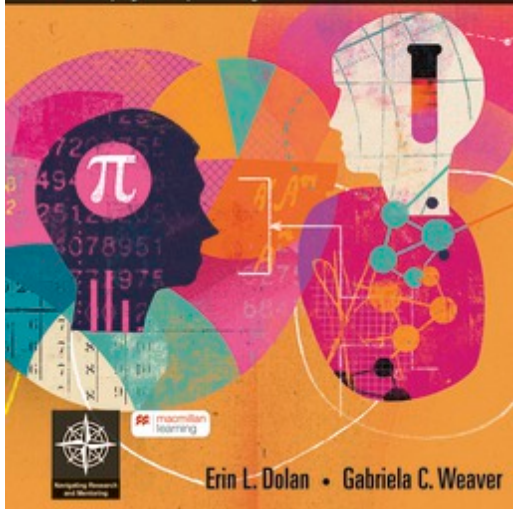
Edited by  
**Dominic DelliCarpini**  
**Jenn Fishman**  
**Jane Greer**

## CUREs

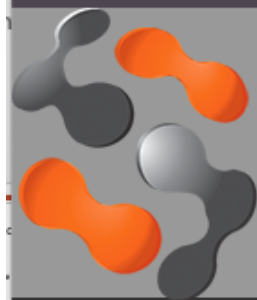
- Origins in STEM fields (esp Chemistry and Life Sciences)
- Examples from many disciplines from Social Sciences, Arts and Humanities

## A Guide to Course-based Undergraduate Research

Developing and Implementing CUREs in the Natural Sciences



Erin L. Dolan • Gabriela C. Weaver



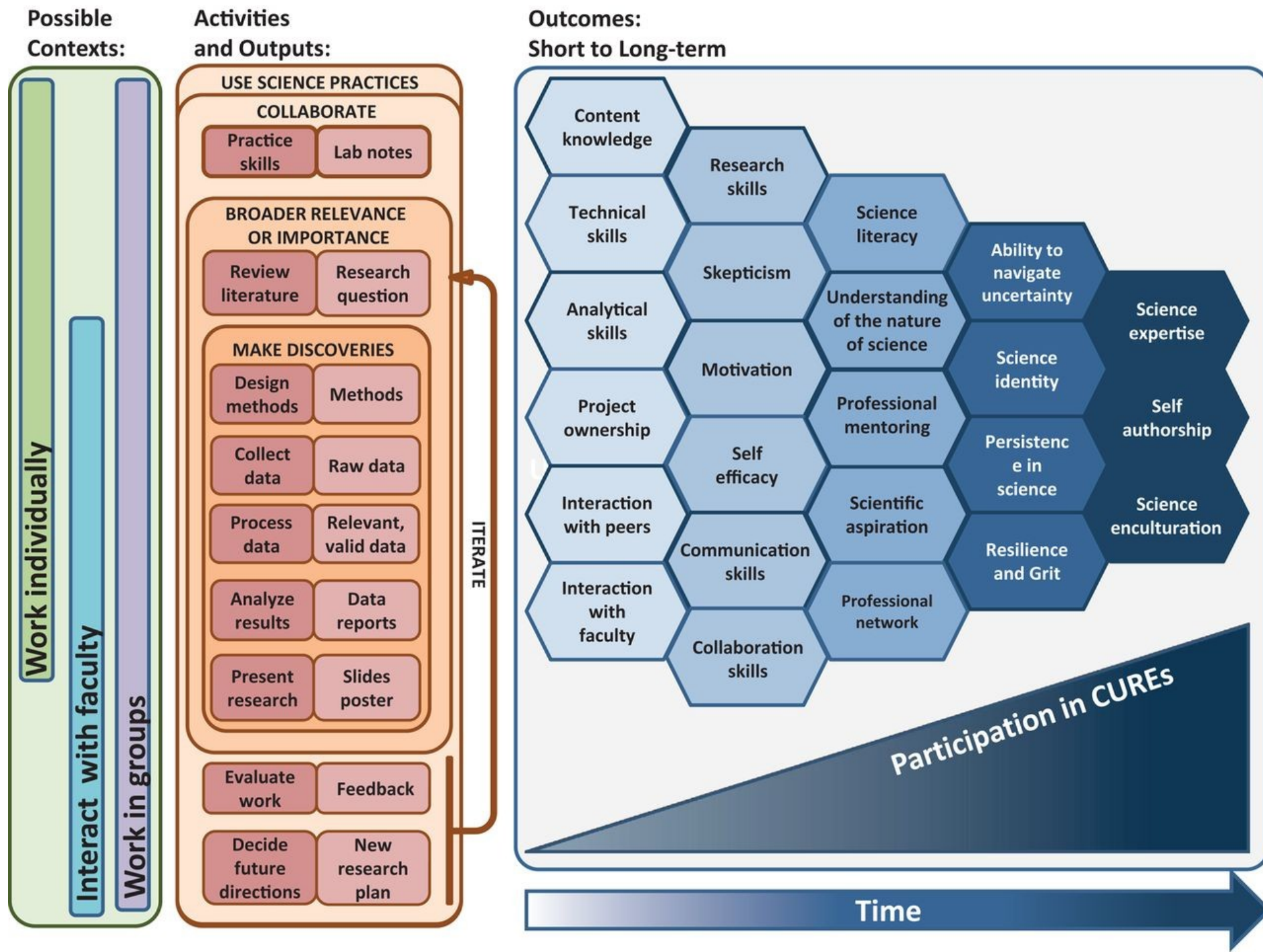
# CUREnet

Course-based Undergraduate Research Experience

**Table 1. Features of CUREs compared with research internships**

	CUREs	Research internships
Scale	Many students	Few students
Mentorship structure	One instructor to many students	One instructor to one student
Enrollment	Open to all students in a course	Open to a selected or self-selecting few
Time commitment	Students invest time primarily in class	Students invest time primarily outside class
Setting	Teaching lab	Faculty research lab





# CUREs in Writing Studies involves teaching “research moves”

- Recognize an issue or point of curiosity.
- Find out what scholars already know about the issue or question and identify unanswered questions
- Identify a narrow and feasible research question.
- Evaluate options for answering that question.
- Determine what information will be collected, how to collect it, and how to analyze it in order to answer the research question.
- *[Consider ethical issues surrounding the question and methods used to answer it past and present]*
- Put information collected into conversation with what has been said before to offer answers, offer new interpretations, or offer solutions.
- Determine appropriate avenues to share what was discovered through the research
- *[.... Design an application of knowledge in practice]*

# Designing CUREs for Inclusivity at Illinois State

- Professional development aligned with ISU's Framework for Inclusive Teaching Excellence
- Center for Teaching Learning & Technology
  - “Teaching and Learning Community: CUREs for Social Sciences and Humanities” Summer 2020



## Equity-Minded Competence

Equity-Minded Competence		Lack of Equity-Minded Competence
✓ Awareness of racial identity	✗	Claims to not see race
✓ Uses disaggregated data to identify racialized patterns of outcomes	✗	Does not see value in disaggregated data
✓ Reflects on racial consequences of taken-for-granted practices	✗	Unable to notice racialized consequences or rationalizes them as being something else
✓ Exercises agency to produce racial equity	✗	Does not view racial equity as a personal responsibility
✓ Views the classroom as a racialized space and actively self-monitors interactions with students of color	✗	Views the classroom as a utilitarian physical space

Source: USC Center for Urban Education, 2017.

“Syllabus Review Guide for Equity-Minded Practice”. Pg 4



# Challenge: Design course-based research first two years

- Identify appropriate research “first moves”: Observations; Questions; Connections; Evidence (Hensel, 2018)
- Faculty investment and discomfort: getting comfortable with unpredictable outcomes and not having the answer
- Belief that all students have capacity to learn/ conduct research
- Building opportunities for the research experiences to build over time

# High Impact Practices: Eight Key Elements

- Appropriately high levels of **expectation**
- Investment of students' time and effort over an **extended period**
- **Interactions** with faculty and peers about substantive matters
- Experiences with **diversity**
- Frequent, timely, and **constructive feedback**
- **Structured opportunities** to reflect and integrate learning
- **Real-world applications**
- **Public demonstration** of competence

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