



ITeach 2010

Conversations on Teaching

 Washington University in St. Louis

Sponsored by Arts & Sciences, The Teaching Center,
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ITeach 2010: Conversations on Teaching

8:45-4:45	Registration and Information Coat-Rack; Coffee and Water
9:15-10:30	Plenary
10:30-11:30 11:30-12:30	Sessions in Seigle Hall (room #s on your schedule)
12:30-1:30	Lunch in 204 and 306 Seigle Hall
1:30-2:30 2:30-3:30	Sessions in Seigle Hall (room #s on your schedule)
3:30-4:30	Reception: 2 nd floor lobby, Seigle Hall



Improving Teaching by Applying Research on Learning

Gina Frey, Kathy Miller, and Mark McDaniel

**Faculty in the
Discipline**

**Faculty
Performing
Research on
Learning**

**Opening Up
the
Conversation**

**Collaboration
To Improve
Student
Learning**

Bridging The Gap

**Faculty in the
Discipline**

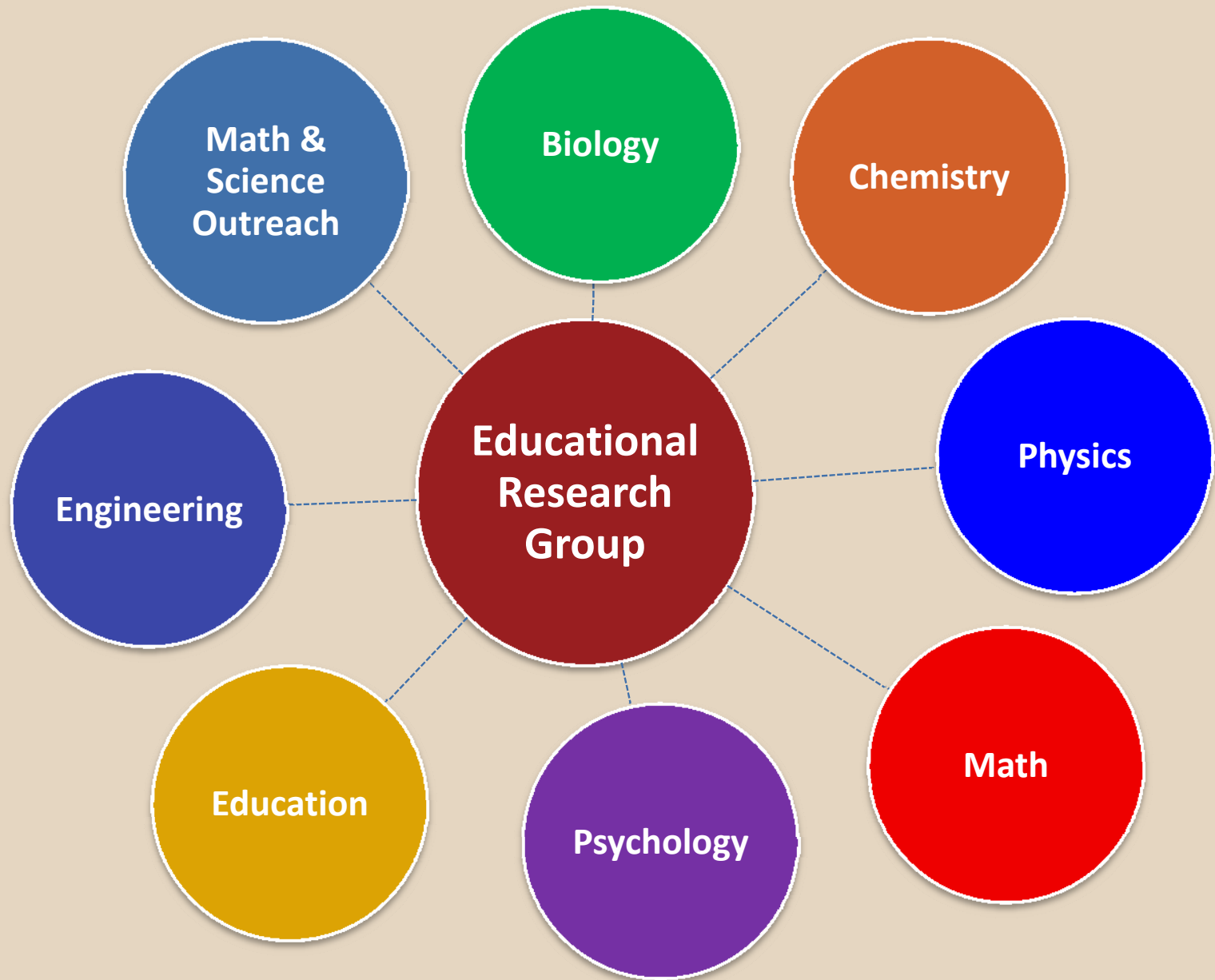
Knowledge about how
people learn



**Faculty
Performing
Research on
Learning**



Specific learning &
teaching challenges in
the classroom





The Teaching Center



Collaborative Project in General Chemistry

Mark McDaniel, Shawn Shields,
Chris Kudelka, Kit Mao, and Gina Frey

Departments of Psychology and Chemistry

General Chemistry: Selected Goals



Goals for Student Learning

- Solve problems creatively
- Integrate, apply, and connect concepts across disciplines

Study Skills

- Promote complex problem solving
- Apply concepts in different contexts

General Chemistry: Types of Student Learning Approaches



Algorithmic (Exemplar)

- Memorizes information
- Follows procedures

Conceptual-based (Rule-based)

- Connects concepts to problem solving
- Integrates ideas together

Objectives of Project



Identify learning approaches

Compare performances of students

Develop supplemental instructional methods

General Chemistry



- This fall (2009), 663 Students were invited to take the McDaniel Function Learning Test
- Test conditions: web-based exam, unsupervised testing, approximately 45 minutes
- 373 students attempted the test
 - 192 students: invalid test results (non-learners or students who sped through the exam without effort)
 - 181 students: valid test results (**27% of the class**)

General Chemistry Results of Function Learning Test



To inquire about results, please contact
Gina Frey at gfrey@wustl.edu.

General Chemistry



- This spring, compare Algorithmic learners to Conceptual-based learners in
 - Final grades in general chemistry lecture
 - Final exam in general chemistry laboratory and cumulative lab report score in general chemistry laboratory
 - Algorithmic and conceptual exam problems in general chemistry lecture

Bridging The Gap

