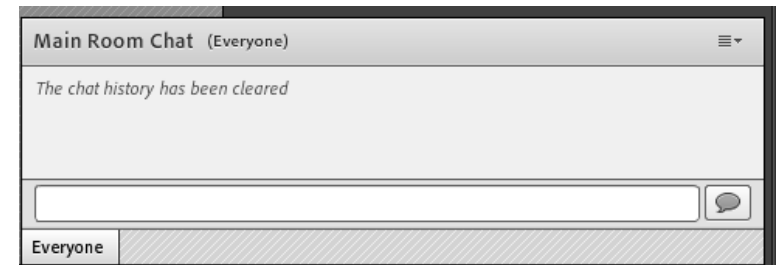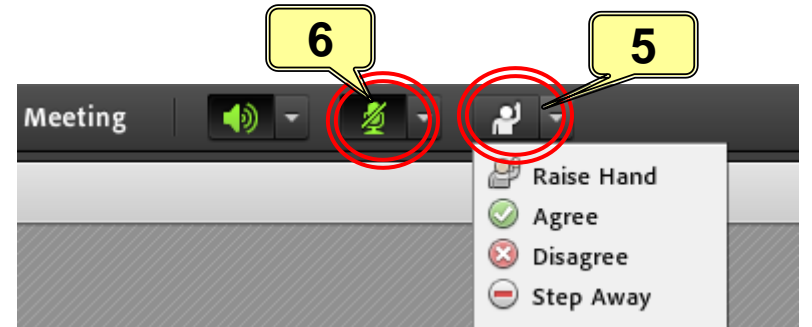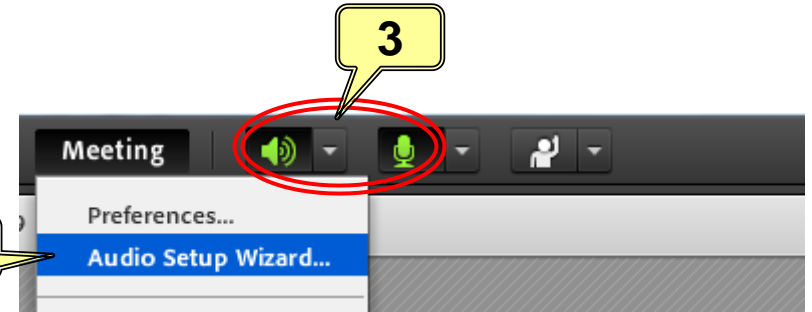# Welcome! As you enter…

1. Plug in your headset (if available).

2. Enable your speakers and mic

3. The top bar icons should be green).

4. Run the audio setup wizard (use "Meeting" menu on top left).

5. "Raise your hand" by clicking the icon to let the hosts know you are ready to test your mic.

6. After testing your mic, mute yourself by clicking the mic icon

7. Feel free to use the chat at any time!

Start Recording

Faculty Virtual Community of Practice
Computer Science & Computer Engineering

Session 1: Welcome

Scott Grissom

Grand Valley State

grissom@gvsu.edu

Joe Tront

Virginia Tech

jgtront@vt.edu

Today's Agenda

- Introduction to VCP (15 min)

- Member Survey (10 min)

- Seven Principles (10 mins)

- Group Breakouts (20 mins)

- Report out (15 mins)

Scott Grissom

Computer Science

20 years of teaching experience

Involved with SIGCSE

NSF Program Officer (2009-2011)

Use clickers and collaborative learning in the classroom

Michigan Professor of the Year (2008)

Joe Tront

- Electrical & Computer Engineering

- 36 years teaching experience

- Assistant Dean for Computing ~10 yrs.

- Numerous teaching with technology projects

- Former W.S. Pete White chaired professor for innovation in engineering education

Get Comfortable with Adobe Connect

- Raise your hand, laugh, applaud, or tell us to speak louder

- Share a comment in the Chat window (lower right)

Rules of Engagement

Create your own bubble of solitude:

- Close your office door

- Use a "do not disturb" sign

- Turn off e-mail

- Silence or forward phone

- Avoid any other potential distractions

- Occasionally check to see whether or not you are muted; review the Chat box to see if there is anything relevant

ASEE - VCP Project Goals

- Sustainable VCP model that enables faculty members to work as a community to
  - Share knowledge
  - Develop Instructional strategies
  - Implement and evaluate approaches

- Identify VCP best practice

- These goals are assessed by ASEE staff

ASEE - Expected Outcomes

- 2 Leadership VCPs and 10 Faculty VCPs

- A knowledgeable, skilled community of leaders

- Approximately 300 faculty members that have
  - Shared practices and gained a deeper understanding
  - Implemented and evaluated approaches
  - Continued involvement with their VCP

- VCP knowledge base and best practices

ASEE Premises

- Need for advancement in engineering education and effective methods of dissemination

- Current short-term, one-shot, face-to-face faculty workshops are inherently flawed and not scalable

- Learning communities and communities of practice offer an effective alternative

- Virtual approaches provide an effective economical, and scalable approach without geographical constraints.

- Engineering faculty members will participate in VCPs

VCP Members will:

- Be introduced to research-based instructional practices (supported by education literature)

- Make a few immediate changes to their teaching this semester

- Make more deliberate and systemic changes to a course next term

Getting to Know Each Other

- We will ask a series of questions to help each of us better understand our community

- 56% have worked on funded education projects

- 56% have presented education papers

- 70% have used nontraditional teaching techniques

Poll Question

- What is your discipline?

- Computer Engineering

- Computer Science

- Other (type in chat box)

Poll Question

- How many years have you been teaching?

- 1 - 4

- 5 - 9

- 10 – 14

- 15+

Poll Question

- Describe your tenure status

1. Not tenure track

2. Tenure track but not yet tenured

3. Tenured

Poll Question

- Did you read your two short assignments?

1. No, but I meant to

2. Quickly scanned just before this meeting

3. Yes!

Poll Question

- Do you have a copy of "How Learning Works"?

1. Yes

2. Not yet but I plan to

3. Sorry, I am not likely to get it

Poll Question

- Rate your familiarity with Bloom's Taxonomy

- Unfamiliar

- A little familiar

- Somewhat familiar

- Very familiar

Poll Question

- Rate your use of student learning outcomes:

- I'm not sure

- I guess they are in my syllabus but I did not give them much thought

- I design outcomes for each course

- I include outcomes on almost every student assignment

Poll Question

- Rate your awareness of active learning strategies:

1. I have never heard of it

2. I have heard the name but know little about it

3. I am familiar with it but have never used it

4. I have used it in the past but no longer use it

5. I currently use it

*"It could well be that faculty members of the twenty-first century college or university will find it necessary to set aside their roles as teachers and instead become **designers** of learning experiences, processes, and environments."*
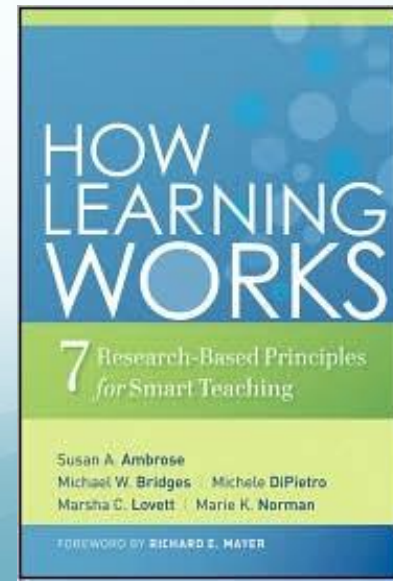
James Duderstadt, 1999
Nuclear Engineering Professor, Dean, Provost & President of the University of Michigan
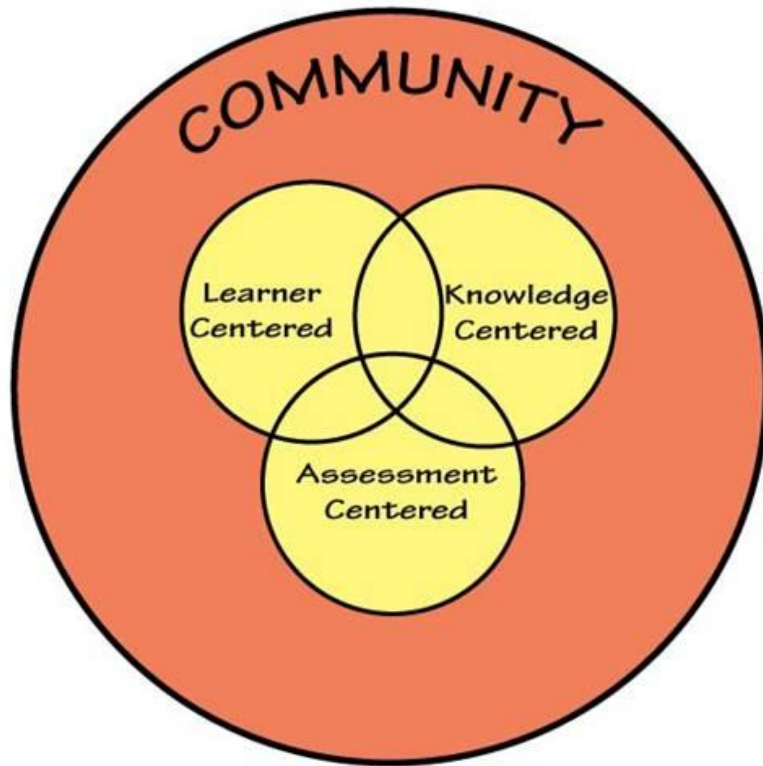
Seven Research-Based Principles

1. Students' prior knowledge can help or hinder learning
2. How students organize knowledge influences how they learn and apply what they know
3. Students' motivation determines, directs, and sustains what they do to learn
4. To develop mastery, students must acquire component skills, practice integrating them, and know when to apply what they have learned
5. Goal-directed practice coupled with targeted feedback enhances the quality of students' learning
6. Students' current level of development interacts with the social, emotional, and intellectual climate of the course to impact learning
7. To become self-directed learners, students must learn to monitor & adjust their learning approach

HOW LEARNING WORKS

7 Research-Based Principles for Smart Teaching

Susan A. Ambrose
Michael W. Bridges   Michele DiPietro
Marsha C. Lovett   Marie K. Norman

FOREWORD BY RICHARD E. MAYER

How People Learn (HPL)

HPL Framework

- Expertise implies (Ch. 2):
  - a set of cognitive and metacognitive skills
  - an organized body of knowledge that is deep and contextualized
  - an ability to notice patterns of information in a new situation
  - flexibility in retrieving and applying that knowledge to a new problem

Bransford, Brown & Cocking. 1999. *How people learn.* National Academy Press.

Three Important Principles About Learning and Understanding

- **Students come to the classroom with preconceptions** about how the world works which include beliefs and prior knowledge acquired through various experiences.

- **To develop competence in an area of inquiry, students must**: (a) have a deep foundation of factual knowledge, (b) understand facts and ideas in the context of a conceptual framework, and (c) organize knowledge in ways that facilitate retrieval and application.

- A "**metacognitive" approach to instruction** can help students learn to take control of their own learning by defining learning goals and monitoring their progress in achieving them.

Pellegrino, 2006. *Rethinking and redesigning curriculum, instruction and assessment: What contemporary research and theory suggests.* www.skillscommission.org/commissioned.htm

Breakout Sessions

- Adobe Connect supports virtual small group breakouts

- We have created groups around disciplines

- Unmute your mics when you arrive

- A scribe, reporter and manager will be assigned

- Some groups will be asked to report out

- Post a chat message along with your group number if you have technical problems

- Scott and Joe will drop in to each group

Breakout Topic

- From your reading of the HLW Introduction, which of the 7 research-based principles have you embraced and how?

- Introductions: 10 minutes

- Discussion: 10 minutes

- Scribe (1st person)

- Manager (2nd person)

- Reporter (3rd person)

Seven Principles Summary

- Good practice in undergraduate education:
  - Students - faculty contact,
  - cooperation among students,
  - active learning,
  - prompt feedback,
  - emphasizes time on task,
  - high expectations
  - diverse ways of learning

Chickering & Gamson, 1987. *Seven Principles for Good Practice in Undergraduate Education.*

Group Report Outs

- As time permits

- Reporters will be asked to summarize the breakout conversation

Next Week

- Your homework:
  - Read *How Learning Works: 7 Research-based Principles for Smart Teaching*, pages 70-82 and Appendix D on pages 244-247
  - Post at least two learning objectives that would be developed to describe the goals of a class project given in a course taught by the group members. Each group should post their learning objectives as a Word file. Files should be put in the folder Session 1 Homework at https://aseevcp.asee.org/?q=computer