

# Center for the Practice and Scholarship of Education of science, engineering, and mathematics students

## Focal Point

---

### Contact

Ella Ingram  
Email to [ingram](mailto:ingram@rose-hulman.edu)  
X8507, D226  
Call or drop by anytime.

### In this Issue:

- Upcoming Events **1**
- ASSESS Database **1**
- Engaging Modern Learners **2**
- Bjork Lab **2**
- CPSE Services **3**
- Try the IF-AT Tool **3**
- Upcoming Conferences & Workshops **3**
- Higher Education Blogs **3**
- Writing 20 Minutes Every. Single. Day. **4**
- New CPSE Resources **4**

### Upcoming Events

The [spring book club](#) will assemble soon. This term's book is *Teaching Naked*, by José Bowen (read a few reviews [here](#)). This book argues that taking technology out of the classroom can benefit student learning. I heard Dr. Bowen speak at a conference, and he also argued for using technology in meaningful, productive ways (e.g., this book is NOT anti-technology). This choice is meant as a specific counterpoint to the online learning activities of late—let's challenge ourselves to think on both sides of the technology coin. Email Ella by [March 13](#) if you'd like to join the reading group. The first meeting will happen during Week 2.

We're trying something new—a working group of sorts—centered on Susan Robison's *The Peak Performing Professor: A Practical Guide to Productivity and Happiness* (summary in the new books section). A copy is available in the CPSE Library Collection or online [here](#). Robison's book is meant to help faculty to identify their mission, use time to advance that mission, and create a meaningful legacy. Send your interest for Ella to coordinate schedules by [March 13](#). The first meeting will happen during Week 2 in the Spring. Limited to five participants, with probably four meetings in the spring term.

Other events are in the works...stay tuned for further updates.

And of course, the [Observation Exchange](#) is ongoing. Take the opportunity to see how your colleagues in other departments do what they do. Simply find a partner, sit in on each other's class, and have lunch on the CPSE to talk about it. Email Ella for the code word in the lunch line.

---

### ASSESS Engineering Education—a database

The NSF-sponsored ASSESS database holds assessment instruments that can be used for evaluating innovations in the classroom, documenting learning, attitudes and perception, and supporting outcomes assessment.

Tools in every discipline and generalized tools are available. A few of the more interesting...

- Colorado Learning Attitudes About Science
- Comprehensive Assessment of Team Member Effectiveness
- Critical Engineering Literacy Test
- Engineering Identity Development Scale

See the entire database at <http://assess.tidee.org>. The site includes a glossary, links to other resources, and more.

---

## ● Engaging Modern Learners

It is no surprise to any faculty member that students are different today (than at just about any time). The Beloit MindSet List summarizes every year those things that students know/have/expect, and those things that are just too old. For example, for the Class of 2017, Beloit notes that “Eminem and LLCoolJ could show up at Parents’ Weekend” and “Their parents’ car CD player is soooooo ancient and embarrassing” [1]. I guess my examples comparing Nancy Reagan to Andre the Giant won’t fly anymore. So, what is it that millennial students want from their profs?

Christy Price has some answers. Dr. Price, Dalton State College and U.S. Professor of the Year, struggled in her own classes to understand “astonishingly high expectations of success...combined with an astonishingly low level of effort” [2]. So, she set about trying to formulate a picture of millennial students that she and GenX colleagues (or beyond) could use to improve the overall educational experience.

### *On being familiar with millennial culture...*

Students want technology-savvy instructors—it is one way to express engagement in what’s happening right now.

Students want profs who can use relevance and reality to support classroom ideas, but the examples must also be current.

Students want profs to be relax and relatable, but mostly in relation to themselves. (I can confirm—in one class I asked every Friday for weekend plans and every Monday for a weekend report, and not once did students ask about my plan or activities).

### *On their ideal learning environment...*

Millennials have a high desire for team orientation and interdependence, but group work is trivial; make it meaningful.

Students want multiple input modalities: video, podcasts, lecture, problem-solving, etc.

Students want to be interactive and participatory.

Dr. Price summarized the findings into five R’s: **Relevance**, **Rationale**, **Relaxed**, **Rapport**, and **Research-based**. When I first learned of this scheme, I struggled to understand *Rationale* and *Research-based*. Rationale connects to the non-authoritarian preferences of millennial learners; Price contends they will gladly participate in something if they know *why you are doing what you are doing*. To me, this item means taking just a minute or so to explain my motives. Research-based refers to the engagement level of millennial students. Having “come of age” in an environment of near-constant stimulation, as learners, these students want active engagement and learning (premises based in research on millennial students).

For more ideas and actions for your classroom, read one of these summaries:

[Understand. Engage. Connect.](#) Bill Rozaitis, University of Minnesota

[1] Beloit MindSet List Class of 2017 [here](#).

[Teaching Millennial Students.](#) Teaching Commons, DePaul University

[2] [“Why Don’t My Students Think I’m Groovy?”](#),  
Christy Price

[Meeting the Needs of Millennial Students.](#) In Touch with Student Services, CSU Long Beach

## ● Bjork Learning and Forgetting Lab

Treat yourself to a tour around the [webpage](#) of the Robert Bjork lab group at UCLA. The cognitive psychology research described explores everything from memory retrieval to directed forgetting—basically a learner being told which items to remember or not. Applications to the educational setting abound.

A summary of Bjork’s research can be found at Scientific American [here](#). Or better yet, read a couple of papers from the primary literature, also available on the Bjork Lab website (see complete listing [here](#)): “When and why a failed test potentiates the effectiveness of subsequent study”, “Multiple-choice tests exonerated, at least of some charges”, or “Self regulated learning”.

## ● CPSE Services

- find resources about a variety of teaching and educational research topics
- get help carrying out an educational research project
- discuss course evaluation results and plan course improvements
- arrange to have classes videotaped and/or peer-reviewed
- brainstorm ideas for projects or proposals
- obtain peer feedback on grant proposal or manuscript drafts

Additional requests—simply email Ella at [ingram@rose-hulman.edu](mailto:ingram@rose-hulman.edu).

Check out the [IRPA/CPSE Collaborative site](#) on Sharepoint [here](#). Sarah Forbes, Shannon Sipes, and Ella collected various resources on [Contemporary Education](#) topics—a new theme each month.

## ● Try the Immediate Feedback Assessment Technique

During the spring workshop, faculty were introduced to a neat tool—the IF-AT: Immediate Feedback Assessment Technique. The basic idea is that students answer multiple-choice questions on their own, then collaborate with peers to confirm final answers. They check their answers, scratching off one letter at a time to confirm.

In practice, this tool worked quite well. Correct answers allowed the peer group to move on quickly, while incorrect answers prompted significant discussion. The major drawback of the IF-AT is the need for challenging multiple-choice questions—simple recall isn't enough to trigger the discussion component.

Arriving Tuesday—stop by D226 to pick up a few and try it out in class.

**IMMEDIATE FEEDBACK ASSESSMENT TECHNIQUE (IF AT®)**

Name \_\_\_\_\_ Test # \_\_\_\_\_  
 Subject \_\_\_\_\_ Total \_\_\_\_\_

**SCRATCH OFF COVERING TO EXPOSE ANSWER**

	A	B	C	D	Score
1.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
8.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

## ● Upcoming Conferences & Workshops

[Transforming STEM Higher Education](#), AAC&U, November 6-8, Atlanta. Proposals due April 7 (covering research and assessment of student learning, inclusive excellence, recruiting and rewarding faculty, and advancing institutional change). See the conference schedule and RFP [here](#).

[Best Teachers Institute](#), June 18-20, New York City. Applications due March 15. This workshop is based on the Ken Bain books *What the Best College Teachers Do* and *What the Best College Students Do*, and features instructors highlighted in the books. More information is available [here](#).

[Association for Authentic, Experiential, and Evidence-Based Learning](#) annual conference, July 28-31, Boston. This year's conference centers on "advancing learning-centered cultures in a multimodal age". You can read the conference summary [here](#).

[Midwest Conference on the Scholarship of Teaching and Learning](#), April 11, South Bend. The theme of this short conference is high impact practices. It is organized by the Midwest Regional SoTL Consortium—a group many may be interested in joining. Read the conference summary [here](#).

[Teaching Renewal Retreat for Advanced Career Faculty](#), Wake Forest University, June 2-5, Winston-Salem. Application due April 1. Meant specifically for faculty with 12+ years of teaching experience, this workshop includes peer mentoring and personal coaching with the goal of reconnecting to the excitement that led to the original career choice. See the program brochure [here](#).

[From STEM to STEAM](#), New England Faculty Development Consortium, June 6, Bristol, RI. The focus of this one-day event is authentic integration of the arts in STEM fields. Posters and interactive sessions comprise the conference activities. The CFP deadline has been extended; see updated information [here](#).

## ● Blogs

Interesting blogs on academic life and other: [Tenure, She Wrote](#) (part-time, adjunct, and happy); [Mind Hacks](#) (find out what's happening in your brain); [University of Venus](#) (GenX women in higher education).

---

## ● Writing 20 Minutes Every. Single. Day.

A [recent piece](#) in the Prof Hacker blog described the challenges of meaningful production of scholarship—basically how hard it can be to write, whether it is reviews, proposals, white papers, primary research, or something else. Finding time to write is a perennial challenge in the face of more immediate concerns. The blog piece lists four tricks: accountability, scheduling, limits, and momentum [1]. Briefly, they can be illuminated as...

1. Accountability: work within a group setting and have a regular meeting to report progress.
2. Scheduling: hold a window for writing every day, add it to the calendar, and be flexible in time but consistently do it.
3. Limits: think of the task as *no more than* rather than *at least* so the end comes at a high point not a frustrating point.
4. Momentum: use the time for actually getting words on paper, look up references and construct figures later.

These recommendations are echoed in numerous other pieces (like this one); essentially, one should use a sustained approach to meet scholarly production goals, rather than a binge approach [2]. The trick is to create for oneself the conditions that lead to a successful sustained approach. At lunch next time, ask a colleague “What works for you?”

- [1] Belcher, W. 2009. [Writing Your Journal Article in Twelve Weeks: A Guide to Academic Publishing Success](#). SAGE Publications. 376pp.
- [2] Boice, R. 2000. [Advice for New Faculty Members](#). Pearson. 288pp.

---

## ● New CPSE Resources Available for Check-out

[The New Science of Learning: How to Learn in Harmony with Your Brain](#). 1<sup>st</sup> edition, 2013. Terry Doyle and Todd Zakrajsek. If you're looking for a justification for napping, this book is it. In this quick read, Doyle and Zakrajsek establish that better learning can be accomplished with the same effort as bad learning, simply by realigning learning strategies with the way the brain actually works. With different take on the material presented in *Brain Rules* and targeted to students, New Science could be a way to open dialogue with learners about the learner-centered approach to teaching often used in Rose-Hulman classrooms.

[The Peak Performing Professor](#). 1<sup>st</sup> edition, 2013. Susan Robison. Robison's approach to work-life balance or life management is based in current research in neuroscience, organizational development theory, sports performance, and resilience. By specifying one's professional mission and aligning activities with that mission, education professionals can work in that zone we might call flow. Set up in workbook fashion, the text is comprehensive but digestible. Interested in working through the exercises as a group? Contact Ella to get on the group list for planning purposes.

[Social Media for Educators](#). 1<sup>st</sup> edition, 2012. Tanya Joosten. With both practical strategies and case studies, this work introduces ways in which educators can harness social media for pedagogical purposes. The author rejects frivolous use of social media in an educational setting, and demonstrates numerous non-frivolous mechanisms for supporting course activities (both in-person and online/hybrid courses are addressed).

[Developing and Assessing Personal and Social Responsibility in College \(New Directions for Higher Education #164\)](#). 2013. Robert Reason, ed. This volume includes eight articles on personal and social responsibility. Although framed in the light of liberal education and the Core Commitments Initiative, it contains informative case studies regarding curriculum design and co-curricular integration. The immediate connection to Rose-Hulman is through ABET's Student Outcomes *f*, *h*, and *j*.

...and many more. Search for the CPSE collection on Fusion using the acronym CPSE and limiting to Rose-Hulman and printed material in the right-hand panel (or click [here](#)). You can also visit the collection in person on the first floor of the library near the Large Conference Room. Please [recommend additional resources](#) we should acquire.

---

All unattributed material in this issue of *Focal Point* was written by Ella L. Ingram: [ingram@rose-hulman.edu](mailto:ingram@rose-hulman.edu), for the Center for the Practice and Scholarship of Education, Rose-Hulman Institute of Technology, 5500 Wabash Avenue, Terre Haute, IN 47803. Contributions to issues of *Focal Point* are most welcome!

---