

Dear BED members,

I hope this edition of the newsletter finds you well and rejuvenated (hopefully) after a short fall break. The good news is that this newsletter is a particularly meaty one and I'm so excited to share so much great information with the community. In particular, for this this edition -- I want to specifically highlight four things for you all:

1. **ASEE 2021:** For those of you thinking of submitting for this year's ASEE conference, Drs. Nocera and Rooney offered a great webinar on "Submitting to ASEE" today and have shared a link to the meeting for those of you who missed it.
2. **Words of Wisdom:** As promised, I am thrilled to share a short essay written (How to Innovate in Education) by Dr. William Guilford (UVA), our ASEE BED 2021 Theo C. Pilkington Outstanding Educator Award Recipient - incredible advice and reflection for all faculty at all levels.
3. **Positions Galore:** I am happy to say that this edition is packed full of position announcements -- great opportunities to share
4. **Engineering Education Research (Mental Health):** As we all have seen up close and recent current events in higher education, challenges with mental health are very real - and Universities are trying to determine the best path to navigate this crisis. Last year, Drs. Karin Jensen and Kelly Cross published their work on "engineering stress culture." Not only is their work a great representation of engineering education research, but I think it highlights the importance of how we as educators can and should play a role in crafting spaces of inclusion for our engineering learners.

Be well and in good health!

Aileen Huang-Saad, BED Division Chair
The Roux Institute, Northeastern University



BED Announcements for 10/15/21

General Announcements (e.g. upcoming Webinars, upcoming seminars, upcoming grants, publication opportunities, etc.)

1. **CALL FOR ABSTRACTS:** ASEE Annual Conference Abstract Submissions are Now Open
2. **CALL FOR SPECIAL SESSION PROPOSALS:** ASEE 2022: Seeking Special BED Session Proposals
3. **CALL FOR NEWSLETTER CONTENT:** ASEE BED Bi-monthly Newsletter
4. **CALL FOR PARTICIPATION:** BEEC Share and Learn
5. **CALL FOR PROPOSALS:** NSF Professional Formation

BME Education Resources for You

1. **POTENTIAL COURSE FUNDING:** [VentureWell Program Grants](#)
2. **WEBINAR RECORDING:** How to Submit to the Biomedical Engineering Division (BED) of the American Society for Engineering Education (ASEE)
3. **WORDS OF WISDOM:** How to Innovate in Education By Dr. William Giulford, University of Virginia, ASEE BED 2021 Theo C. Pilkington Outstanding Educator Award Recipient

Position Announcements

1. **POSITION ANNOUNCEMENT:** Tenure Track Faculty position at University of Portland
2. **POSITION ANNOUNCEMENT:** Tenure Track Faculty position at Bucknell University
3. **POSITION ANNOUNCEMENT:** Assistant Professor of Teaching in Biomedical Engineering at UC Davis
4. **POSITION ANNOUNCEMENT:** Non-Tenure Track Faculty position at University of Georgia
5. **POSITION ANNOUNCEMENT:** Tenure-Track Assistant Professor of Biomedical Engineering Position at Union College
6. **POSITION ANNOUNCEMENT:** Assistant Professor of Teaching in Biomedical Engineering at UC Davis
7. **POSITION ANNOUNCEMENT:** Lecturer in Undergraduate Engineering Design
8. **POSITION ANNOUNCEMENT:** Tenure-track Biomedical Engineering Assistant Professor, Virginia Tech
9. **POSITION ANNOUNCEMENT:** Biomedical Engineering Instructor, Virginia Tech
10. **POSITION ANNOUNCEMENT:** Instructor of Communication, Virginia Tech

Engineering Education Research Resources

1. **DIVING INTO ENGINEERING ED RESEARCH:** Jensen KJ, Cross KJ. Engineering stress culture: Relationships among mental health, engineering identity, and sense of inclusion. J Eng Educ. 2021;110(2):371–92.

General Announcements

1. **CALL FOR ABSTRACTS:** ASEE Annual Conference Abstract Submissions are Now Open
 - Abstract submission for the 2022 ASEE Annual Conference is **[OPEN!](#)**
 - See Conference Overview page **[HERE.](#)**

REMINDER! If you have not logged into the new ASEE website yet, you will need to [reset your password.](#)

2. **CALL FOR SPECIAL SESSION PROPOSALS:** ASEE 2022: Seeking Special BED Session Proposals

Do you have great ideas for a BED-relevant special session topic for the 2022 ASEE conference? We want to hear them!

Special sessions are usually 75-minutes in length, interactive, and often led by one or more facilitators. Recent special sessions have included “Speed Networking,” “Publishing in BME Education,” “The Public Image of BME – Universities’ Role in Defining Perceptions and the

Resulting Educational Impact,” and “Diversity, Equity & Inclusion in BME: Best Practices and Future Directions,”

Please send ideas to: Tanya Nocera (Nocera.15@osu.edu) and Sarah Rooney (srooney@udel.edu)

3. **CALL FOR NEWSLETTER CONTENT:** ASEE BED Bi-monthly Newsletter

As of 2021, the ASEE BED has started to share a bi-monthly newsletter with the community. We share general resources, BME Education Resources for Students and Faculty, Upcoming Positions, Engineering Education Research Resources. Information will be shared in consecutive emails. If you have information to share with the community, please send your announcement to the BED listserv, as a 2-3 paragraph description including any relevant URLs and contact info as well as a subject line. Do not include any attachments. Be sure that the announcement includes the person to contact with questions. Email all of this information to Aileen Huang-Saad at a.huang-saad@northeastern.edu with [BED Announcement] in the subject line to facilitate email sorting. Announcements will be sent out on the 1st and 15th of each month. Each set of announcements will be included in the announcements email twice. Announcements will also be recorded on the BED website (<https://sites.asee.org/bed/>) and HUB (<https://aseehub.asee.org/groups/home/34#active-group-members>).

4. **CALL FOR PARTICIPATION:** BEEC Share and Learn

We are super excited to share with all of you this month's Share and Learn! The BEEC monthly Share and Learns are meant to serve as networking and collaboration between community members. This month's event will be led by Alexis Ortiz-Rosario, Ph.D., Tanya Nocera, Ph.D., and Rachel Childers, Ph.D. from The Ohio State University! **The topic will be “Building the Best Biomedical Engineering Introductory Course”.**

If you are interested to be part of this discussion, collaborate, contribute, or just learn something new don't miss it! It will be October 20th, 2021 1:00 PM (EST). Register [here](#).

5. **CALL FOR PROPOSALS:** NSF Professional Formation

The NSF Engineering (ENG) Directorate is continuing a multi-year initiative, the Professional Formation of Engineers, to create and support an innovative and inclusive engineering profession for the 21st Century. The PFE: Research Initiation in Engineering Formation (PFE: RIEF) program has two goals: 1) Support research in the Professional Formation of Engineers (PFE), and 2) Increase the community of researchers conducting PFE research. PIs are expected to have little or no experience conducting social science or education research and will develop the proposal with an engineering education research mentor. The full proposal deadline date is November 9, 2021 (Second Tuesday in November, Annually Thereafter).

Related information:

Solicitation: https://www.nsf.gov/publications/pub_summ.jsp?WT.z_pims_id=503603&ods_key=nsf20558

Program Page: <https://beta.nsf.gov/funding/opportunities/pfe-research-initiation-engineering-formation-pfe-rief>

Program Contact: J. Kemi Ladeji-Osias jladejio@nsf.gov

BME Education Resources for You

1. POTENTIAL COURSE FUNDING: [VentureWell Program Grants](#)

VentureWell Course & Program Grants (formerly called “Faculty Grants”) of up to \$30,000 are awarded to faculty or staff at US higher education institutions to support curriculum that engages students in science and technology innovation and entrepreneurship.

DUE NOV 3

2. WEBINAR RECORDING: How to Submit to the Biomedical Engineering Division (BED) of the American Society for Engineering Education (ASEE)

Have you been introducing innovative approaches to biomedical engineering (BME) education in your classroom? Or, maybe you have completed, begun, or want to begin a BME educational research study. If so, the warm and welcoming BME education community wants to learn from, collaborate with, and support you!

Join American Society for Engineering Education (ASEE)’s Biomedical Engineering Division program chairs, Tanya Nocera and Sarah Rooney, as they break down ASEE’s abstract and paper submission processes, discuss the [biomedical engineering division’s call for papers](#), and share how to submit your BME education-related studies to [the next ASEE Annual Conference & Exposition](#), occurring in Minneapolis, MN, June 26-29, 2022.

This webinar occurred on October 15. You can access the recording through the following link.

Recording Link: [link](#)

Questions? Contact Tanya Nocera (Nocera.15@osu.edu) and Sarah Rooney (sirooney@udel.edu)

3. WORDS OF WISDOM: How to Innovate in Education By Dr. William Giulford, University of Virginia, ASEE BED 2021 Theo C. Pilkington Outstanding Educator Award Recipient

How do innovate in education

“It was a dark and stormy night. The instructor reads from a pre-prepared text as their students, who expect value for their tuition, take notes. Those notes prove so popular among other students that they outlive the class in which they were taken. A short distance away, a student works with a different instructor, learning through practice and repetition. Eventually, this student goes on to train students of their own. The end.”

The first thing highlighted by this extremely short novella is the stark contrast between lecture and active learning. One is remarkably passive, with the work product being notes to aid in memory. The role of the instructor is to translate the information, organize it, and present it to the students in a way that they believe will provide value. The other approach is better, according to most evidence. Active learning, which could include both practice by doing and the teaching of others, may

result in retention and recall two to three-times greater than that of passive learning, to name just one benefit among many. We know all this.

The second thing highlighted by this novella is that education has not fundamentally changed since the Middle Ages.

Bologna in 1088 CE had largely the same mix of educational styles that we do today. Things that worked then still work now. Obviously, technology has moved forward; first textbooks and now online content have expanded the *where* and the *when* of learning, but we haven't changed the underlying biology of who we are and accordingly how we learn. Consequently, we cannot change the relative benefits of passive and active learning - lectures and apprenticeships, as examples. What variations exist on these modes of learning have largely been explored, and new offerings are mostly renamed varieties of the familiar teaching modes - lectures, labs, apprenticeships, and immersion abroad.

We can perhaps convince others to adopt evidence-based instructional approaches, but what can we do to truly innovate in education?

First, *innovate for this moment in history*. Accelerating climate change, calls for racial justice, a rise in nationalism, a pandemic and the consequent changes to expectations of students - these are present in a unique combination that has never existed before. In my view, innovation is really a form of evolution - the adaptation of our content and of our instructional approaches to the demands of the environment in which we find ourselves. Respond to evolutionary pressure; make your teaching and learning environment reflective of "these unique times," since they are always and ever will be unique, and then you will always have an element of newness.

Second, *innovate for your own amusement*. When we get bored with how we teach, students get bored with what they are learning. We need to try things that, while others may have tried them, are new to us individually. The purpose is to bring energy back to our classrooms and learning gains to our students. Whether the ensuing learning gains are due to *actual* improvements in how we teach or instead due to some ancillary effect - the novelty effect, the Pygmalion effect, or the Hawthorne effect - is perhaps immaterial if the learning gains are real. Self-innovations raise expectations of ourselves and our students, cause us to pay more attention to our learning environments, and they amuse us such that we show genuine enthusiasm for what would otherwise become stale material.

Third, *innovate in assessment*. By my estimation we are stuck in a pattern of measuring retention and recall, comprehension, and opinions, and doing so using methods available to us in the 1970s at latest. Are there other things that we can or ought to measure about students and that should become part of their formative and summative assessments? Are there new ways to measure the old things? What changes would it cause to our

teaching if we simply knew more and *different* about the students we are teaching? The potential for true innovation in assessment is tremendous.

Fourth and finally, *ignore everything you just read*. Notable physiologist Claude Bernard wrote “It’s what we think we know that keeps us from learning.” For example, in Spring of 2022 I will be combining two teaching methods that I’ve never seen combined before, but that someone else (including me) could easily argue are synonymous with one another. Maybe my “innovation” will have a profound impact on students. Maybe it will only appear to do so or have no impact at all. Regardless, if I read my own essay and took its underlying philosophy to heart, then I might never try this apparently non-innovative “been done before” approach. But consider this – in 11th century Bologna, groups of students at what became the *Università di Bologna* hired their instructors and could fire them at will – the *students*, not professional administrators, or their peers. What if that 10-century old approach to student governance were tried again today? Would that not be ground-breaking in this place, and in this time? Would it be transformative for learning outcomes if we were truly accountable to the students? Would we see an ensuing revolution in education if even one of our institutions tried? Would it merely be a rehash of a Middle Ages approach? Perhaps the thing you try will usher in the next stage of evolution for higher education.

Position Announcements

1. POSITION ANNOUNCEMENT: Tenure Track Faculty position at University of Portland

The Shiley School of Engineering at the University of Portland (UP) invites applications for a tenure-track faculty position at the assistant professor rank to enhance the Master of Biomedical Engineering program, which focuses on medical device development, effective August 2022. We seek candidates with education and experience in one of the following areas: materials science with biomedical applications; mechatronics with biomedical applications. Depending on expertise, the position would also support mechanical engineering (BSME), electrical engineering (BSEE) and/or common engineering courses, which could span all four years of an undergraduate curriculum. The position is ideal for educators passionate about teaching and scholarship in a student-centered institution where we strive for a balance of professional education within a liberal arts environment. Apply at <https://up.hiretouch.com/job-details?jobid=71545>

Questions: Please contact Dr. Katie Bieryla, bieryla@up.edu

2. POSITION ANNOUNCEMENT: Faculty position at Bucknell University

The Department of Biomedical Engineering at Bucknell University invites applications for a tenure-track faculty position to begin August 2022. We expect to hire at the assistant professor level but are open to considering outstanding candidates at other ranks. We seek an outstanding and enthusiastic educator with a passion for engaging undergraduates to join a top-ranked, highly selective undergraduate department with small class sizes that facilitate close student-faculty interaction in a hands-on, interactive learning community. We seek candidates who are committed to Bucknell’s efforts to create an inclusive climate that fosters the growth and development of a diverse student body, and we encourage members of groups that have been historically underrepresented in higher education to apply. Candidates are expected to have a strong technical

engineering foundation with a background in biology or health sciences, including a Ph.D. in biomedical engineering or a closely related discipline.

For full details, please visit careers.bucknell.edu. For questions, please contact Dan Cavanagh at dcavanag@bucknell.edu.

3. Position Announcement: Assistant Professor of Teaching in Biomedical Engineering at UC Davis

The Department of Biomedical Engineering (BME) in the College of Engineering of the University of California, Davis invites candidates for an Assistant Professor of Teaching in Biomedical Engineering position.

The Assistant Professor of Teaching series emphasizes excellence in teaching and student-centered efforts, and complements the research-focused Professor series at the University of California. Appointment conveys membership in the Academic Senate and, contingent upon promotion, security of employment that parallels tenure. Professors of Teaching are expected to be outstanding teachers, engage in professional and/or scholarly achievement and activities (i.e. educational scholarship and curricular innovation), and provide service to the department, University, and public.

Applicants must be able to teach core undergraduate courses, and be willing to help evolve an innovative multi-disciplinary curriculum in the field of biomedical engineering. Attractive candidates will have a clear interest in teaching, teaching experience, sound ideas for improving student learning and engagement, and ideas for enhancing the biomedical engineering curricula.

Minimum Qualifications: PhD or equivalent degree in biomedical engineering or related quantitative field is required and must have been awarded by the date of hire.

For fullest consideration, please review the full position description, which provides guidance on application requirements and recommendations to strengthen your application: <https://recruit.ucdavis.edu/JPF04478>. The deadline for full consideration is October 31, 2021, although applications will be accepted until the position is filled.

For more information, please contact Dr. Jen Choi at jhkchoi@ucdavis.edu.

4. POSITION ANNOUNCEMENT: Non-tenure track faculty position at University of Georgia
The College of Engineering invites applicants for one 9-month, non-tenure track Lecturer position, to begin January 2022. The College seeks highly qualified applicants with a strong commitment to excellence in teaching and the ability to teach at all levels.

Candidates for this position must have a Ph.D. in chemical engineering, biochemical engineering, biomolecular engineering or a related field. Ideal candidates will have 3-5 years of relevant industry experience and/or experience teaching core courses in an undergraduate degree program. A background in teaching lecture-based courses and laboratory courses in unit operations, fermentation, synthetic biology, mass transport or bioprocess engineering is preferred. Other areas of biochemical engineering relevant to the mission of the school will also be considered. Competitive applicants will show promise of excellence in classroom instruction and will demonstrate knowledge of modern pedagogical practices. Ideal

candidates

include those who demonstrate evidence of a commitment to diversity, equity, and inclusion through research, teaching, and/or service endeavors.

To apply, candidates should submit an application at: <http://www.ugajobsearch.com/postings/222154>. Questions related to the position may be directed to the search committee chair, Mr. John Brocato, at John.Brocato@uga.edu. Applications received before November 1, 2021 will be given full consideration.

5. **POSITION ANNOUNCEMENT:** Tenure-Track Assistant Professor of Biomedical Engineering Position at Union College

The Department of Electrical, Computer and Biomedical Engineering at Union College invites applications for a tenure-track position in Biomedical Engineering at the rank of Assistant Professor, beginning September 2022. A Ph.D. in Biomedical Engineering or a closely related field is required. Candidates close to completing their doctoral thesis are also welcome to apply. Excellent candidates in all areas of Biomedical Engineering will be considered, but preference will be given to candidates with expertise in rehabilitation engineering or prosthetic design. We welcome applications from members of groups traditionally underrepresented in their field. This is an endowed position that benefits from an assigned annual allowance to support research and travel and is part of a broader initiative to further strengthen and integrate engineering and computer science with the liberal arts at Union. Please find the ad for this position at <http://jobs.union.edu>, and follow the application submission instructions. Review of complete applications will begin December 1, 2021 and continue until the position is filled.

6. **POSITION ANNOUNCEMENT:** Assistant Professor of Teaching in Biomedical Engineering at UC Davis

The Department of Biomedical Engineering (BME) in the College of Engineering of the University of California, Davis invites candidates for an Assistant Professor of Teaching in Biomedical Engineering position. The Assistant Professor of Teaching series emphasizes excellence in teaching and student-centered efforts, and complements the research-focused Professor series at the University of California. Appointment conveys membership in the Academic Senate and, contingent upon promotion, security of employment that parallels tenure. Professors of Teaching are expected to be outstanding teachers, engage in professional and/or scholarly achievement and activities (i.e. educational scholarship and curricular innovation), and provide service to the department, University, and public.

For fullest consideration, please review the full position description, which provides guidance on application requirements and recommendations to strengthen your application: <https://recruit.ucdavis.edu/JPF04478>. The deadline for full consideration is October 31, 2021, although applications will be accepted until the position is filled.

For more information, please contact Dr. Jennifer Choi at jhkchoi@ucdavis.edu.

7. **POSITION ANNOUNCEMENT:** Lecturer in Undergraduate Engineering Design

The School of Engineering at Rice University seeks unique and energetic applicants for a [non-tenure track faculty appointment with a full-time focus on undergraduate engineering](#)

[design](#) education at the Oshman Engineering Design Kitchen (OEDK). The OEDK provides undergraduate engineering students with ready access to design tools, prototyping equipment, computational facilities, meeting rooms and ample space for prototype design and development. Classes and programs at the OEDK challenge students to solve real-world design challenges brought to them by clients. OEDK offers courses for students from freshman through senior year that are part the Engineering Design minor. In addition, OEDK supports other courses within the School of Engineering that have embedded engineering design components. The OEDK is also a hub of activity and a social center for undergraduate engineering student creativity, clubs, and experimentation through its programs and resources. Specifically we are looking for an individual who is passionate about undergraduate teaching, has a rich experience in engineering design, and is highly motivated to contribute to a dynamic and growing academic maker-space. Position open until filled.

8. **POSITION ANNOUNCEMENT:** Tenure-track Biomedical Engineering Assistant Professor, Virginia Tech

The Biomedical Engineering and Mechanics (BEAM) Department at Virginia Tech invites applications for two tenure-track faculty positions at the assistant professor level, effective August 2022, in areas related to biomedical imaging or tissue engineering as well as broader interests in theoretical, computational, and/or experimental methods. Data driven research/teaching applications are also preferred. We are seeking candidates motivated to contribute to a collegial, interdisciplinary community with a strong tradition of both fundamental and applied research, high quality teaching and mentoring. For more information and application link, please visit <https://beam.vt.edu/employment.html>

9. **POSITION ANNOUNCEMENT:** Biomedical Engineering Instructor, Virginia Tech

The Biomedical Engineering and Mechanics (BEAM) Department at Virginia Tech invites applications for a full-time instructor position to begin in August 2022. Duties will include teaching undergraduate laboratory courses in biomedical engineering, including a cell engineering laboratory course and bioinstrumentation laboratory course. Additional opportunities may be available to teach other undergraduate courses in biomedical engineering. For more information and application link, please visit <https://beam.vt.edu/employment.html>

10. **POSITION ANNOUNCEMENT:** Instructor of Communications, Virginia Tech

The Biomedical Engineering and Mechanics (BEAM) Department at Virginia Tech invites applications for a full-time instructor position to begin in Spring 2022. Duties will include teaching technical communications in an engineering context, collaborating with department faculty to provide communications instruction in biomedical engineering (BME) courses, providing quality feedback to students on communications assignments, and contributing to assessment needs. For more information and application link, please visit <https://beam.vt.edu/employment.html>

Engineering Education Research Resources

1. **DIVING INTO ENGINEERING ED RESEARCH:** [Jensen KJ, Cross KJ. Engineering stress culture: Relationships among mental health, engineering identity, and sense of inclusion. J Eng Educ. 2021;110\(2\):371–92.](#)

To send an announcement to the BED listserv, please prepare a 2-3 paragraph description including any relevant URLs and contact info as well as a subject line. ***Do not include any attachments.*** Be sure that the announcement includes the person to contact with questions. Email all of this information to Aileen Huang-Saad at a.huang-saad@northeastern.edu with **[BED Announcement]** in the subject line to facilitate email sorting. Announcements will be sent out on the 1st and 15th of each month. ***Each set of announcements will be included in the announcements email twice.*** Announcements will also be recorded on the BED website (<https://sites.asee.org/bed/>) and HUB (<https://aseehub.asee.org/groups/home/34#active-group-members>).

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To make an appointment click [here](#)

[Linkedin](#) [Twitter](#)