



Summer I 2021

ASEE Engineering Design Graphics Division Newsletter

The EDGD Newsletter is issued 6 times per year and aims to share information on latest engineering design graphics research and practices. All newsletters and more content are available on our EDGD website <https://edgd.asee.org/>

If you have something you want to share in the newsletter (great ideas, upcoming workshops, nice experiences), let me know: Diana (dibairak@vt.edu) or connect with us on Twitter using **#ASEEGraphics** to signal publications, initiatives or events for inclusion in the newsletter.

Dear reader, I hope you are celebrating *Memorial Day* and the end of another semester! It is hard to believe we all made it to the end of one whole academic and pandemic year. Someone asked me earlier this month how I am celebrating my birthday. I answered, by watching my students final project presentations, this is what brought me an immersed joy - to see in video recordings all of my students, whom I have never met but feel so close to and to see what they have accomplished in less than a year in time full of uncertainty, ambiguity, pain, loss, and so much trouble all around the globe.

As we already entered the second year of the pandemic, more people getting vaccinated and reuniting with loved ones. These were the moments we all spent the last year longing for. And while currently we focus on coping with the pandemic immediate effects, the lessons we will collectively learn from this crisis are equally if not more important. I encourage you to attend our division's panel at the annual ASEE conference in July and hear about best practices and lessons learned during the pandemic and how these can be used to advance engineering graphics education. The panel is organized by *Lulu Sun* and *Magesh Chandramouli*, and I am convinced you all will join me in thanking both *Lulu* and *Magesh* for attracting such a wonderful group of academics to serve on the panel (bios of the panelist on pg.3 and 4). Lulu will soon send out a call for questions to capture our division members concerns. You can use the link in the box below to post your questions. Our technical sessions again this year will present speakers and their innovative studies, research and teaching approaches. Times of the sessions and call for session moderators will be soon available, if possible, please do consider helping.



Sending you beautiful peonies from my garden and my wishes for a sunny, joyful, and peaceful summer and a very happy reunion with the people you love but have not been able to see in person.

Diana Bairaktarova
EDGD Director of Communications

Coming up in this month's newsletter:

News and initiatives

Open calls – Upcoming events

Recent articles and publications

Full list of recent publications related to engineering design graphics education and authored by members of our community is on page 2.

EDGD is hosting a panel discussing best practices and lessons learned during the COVID-19 and how these can be used to advance engineering graphics education in the post-COVID scenario – details on pages 3 and 4. Please, use this link to post your questions:

<https://forms.gle/RZnGpwyQEr5AE2Hy5> The deadline for the question's submission is June 30th.





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News and initiatives

Be part of an ongoing conversation on engineering design graphics education using #ASEEGraphics on Twitter, and let us know about your recent publications, events and initiatives that we can share with our community in our newsletters, or even to share your opinions and respond to the ideas expressed in the EDGD editorials.

Call for Papers for our Journal of Engineering Design Graphics. We invite you to submit unpublished manuscripts that share your classroom experiences related to engineering graphics courses that you have taught, developed, and modified as a result of COVID-19 pandemic. This is an opportunity to share with the engineering design graphics community how you have adapted what are often hands-on courses, especially those courses that include hand sketching and visualization activities with manipulatives, to a new and changing learning environment. More information is available at <http://edgj.org> under "Information for Authors."

Open calls - Upcoming events

ASEE 2021 Annual Conference July 26 - 29 Long Beach, California – online
<https://www.asee.org/annual-conference/2021>

SEFI 2021 Annual Conference Blended Learning in Engineering Education: challenging, enlightening – and lasting? 13-16 September 2021, TU Berlin – online
<https://sefi2021.eu/>

IEEE ISTAS21 - 2021 IEEE International Symposium on Technology and Society (ISTAS21)
28-31 October 2021, University of Waterloo and University of Guelph, Canada (online) - [Call for abstracts](#)

REES AAEE 2021, The Research in Engineering Education Symposium and Australasian Association for Engineering Education Annual Conference
5- 8 December 2021, The University of Western Australia (hybrid) - [Call for abstracts](#)

Recent articles and publications

Jensen, K. and Cross, K. (2021). Engineering stress culture: Relationships among mental health, engineering identity, and sense of inclusion. *Journal of Engineering Education*, May 2021,
<https://onlinelibrary.wiley.com/doi/full/10.1002/jee.20391>




Hoffenson, S. and Fay, B. (2021) Teaching Market-Driven Engineering Design with an Agent-Based Simulation Tool. *Advances in Engineering Education*, Spring 2021, Vol. 9 (2)
https://drive.google.com/file/d/1uF71lBe5Mkx_vXW8TADH05RCTWK6jidW/view



What: The COVID-19 pandemic has challenged the engineering educators to teach in a non-traditional teaching environment. This panel session will share the best practices and lessons learned during the COVID-19 and how these can be used to advance engineering graphics education in the post-COVID scenario.

Where: online

When: **July 29th, 2021, Thursday, 11:30 AM - 1:00 PM**

Panelist (Alphabetic order)	Bio
 <p data-bbox="170 978 354 1010">Dr. Ted Branoff</p>	<p data-bbox="440 653 1490 968">Dr. Ted Branoff is a professor and chair of the Department of Technology at Illinois State University. He taught engineering graphics, computer-aided design, descriptive geometry, and instructional design courses in the College of Education at North Carolina State University from 1986-2014. He also worked for Siemens-Switchgear Division and for Measurement Group, Inc. Dr. Branoff taught a hybrid version of Geometric Dimensioning & Tolerancing in Fall 2020. As department chair, he worked with his 21 full-time faculty and 14 part-time faculty to modify instructional modes for Spring 2020, Fall 2020, and Spring 2021. The software he used includes Siemens NX, CMM Manager, Sakai, Zoom, Minitab, Microsoft Office (Excel, Word, Powerpoint)</p>
 <p data-bbox="142 1341 380 1373">Dr. Molly Hathaway</p>	<p data-bbox="440 1016 1490 1325">Dr. Molly Hathaway Goldstein is a teaching assistant professor of Industrial & Enterprise Systems Engineering at University of Illinois, Urbana-Champaign. Dr. Goldstein taught Engineering Graphics & Design (two sections, one for product design and one for building information modeling) as fully online synchronous, with flipped elements classes. She used Autodesk Fusion360 in one course, and Autodesk Revit in the other. She made professional hand-sketching videos last summer, and partnered with a colleague, Jim Leake, on adapting his textbook to include these videos and additional assessments for active learning in engineering graphics and design. This edition will be released for Fall 2022.</p>
 <p data-bbox="170 1677 354 1709">Dr. Ellyn Lester</p>	<p data-bbox="440 1379 1490 1688">Dr. Ellyn Lester is the Director of Built Environment Programs and Associate Chair of Graduate Studies for the Civil, Environmental, and Ocean Engineering Department at Stevens Institute of Technology. Over the course of the pandemic, she worked with a small team to adapt all of the department's courses and provide support to faculty and students regarding the transition to fully online learning, while teaching several hybrid and fully online courses including: Construction Engineering I; Leading Construction Organizations; Advanced Project Controls; Practicum; and Strategic Responses to Cyclical Environments.</p>

The panel session is co-sponsored by the Construction Division.



Dr. Sahithya Reddivari

Dr. Sahithya Reddivari is an assistant professor of engineering of computer science and engineering department at Georgia State University Perimeter College, where she has been teaching for five years. Courses taught during the pandemic include Engineering Graphics I and II, Introduction to Engineering, and Statics. Teaching modality is Hybrid (Class meets at 50% capacity). Technology applications include 3D Printing, Webex, Teams, D2L She is also the Campus STEM Lab coordinator.



Dr. Jaskirat Sodhi

Dr. Jaskirat Sodhi is a Senior University Lecturer at the New Jersey Institute of Technology (NJIT) in Newark, NJ, where he has taught for 10 years. He is the coordinator of ENGR101, an application-oriented course for engineering students placed in pre-calculus courses. He has also developed the Fundamentals of Engineering Design course that includes a wide spectrum of activities to teach engineering students the basics of engineering design using a hands-on approach. During the pandemic, he taught lecture and lab courses in both converged and synchronous online modalities.



Dr. Heidi Steinhauer

Dr. Heidi Steinhauer is a full professor and department chair of engineering fundamentals at Embry-Riddle Aeronautical University, where she has been teaching Dr. Heidi Steinhauer since 1997. The courses taught during pandemic include Design for Manufacturing and Assembly and Graduate Research Methods. She has been the department chair since 2013.



Dr. Matthew Wettergreen

Dr. Matthew Wettergreen is an associate teaching professor and Oshman Engineering Design Kitchen Director, Global Medical Innovation Program, Department of Bioengineering at Rice University, where he has been teaching over 10 years. Courses taught during pandemic include Introduction to Engineering Design, Digital Design and Visualization, Medical Device Innovation Laboratory, Prototyping and Fabrication Applications used: Fusion360, TinkerCAD, 3D PrinterOS, Adobe Illustrator, Rhino During the pandemic courses were taught fully online, dual, and fully in person. Two lessons emerged from this experience include 1) Design can be done virtually or in person, but the part of design that produces physical artifacts must be done in person, and 2) teamwork in design and project-based courses is just as effective virtually as in person.