



Spring 2021

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## ASEE Engineering Design Graphics Division Newsletter

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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](mailto:dibairak@vt.edu)) or connect with us on Twitter using **#ASEEGraphics** to signal publications, initiatives or events for inclusion in the newsletter.

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**Happy Spring!** As a parent and an educator, I find myself thinking a lot about my family's and my students' brains lately – especially now, when it feels more and more challenging to find stimulating activities for my teenage son and all my engineering students with whom I engage only online. Honestly, it's becoming increasingly difficult to engage my own mind these days. I started to look for ways to mix it up and first get my neurons firing in a different way before I use a screen. Some options that I shared with my family and my students: an activity that is mathematical (cooking, building in the garage), strategic (playing a game, creating a project from scratch), meditative (a puzzle, an outdoor walk), or that requires hand-eye coordination (knitting, ball throwing, free-hand sketching) and there is reading or socializing, and the list goes on. Yet no matter how many ideas I throw around, I often find myself staring at the phone, engrossed in the latest news and social media.



I learned that there is a word for what I am trying to do at home and in my classes – neuroplasticity – the brain's ability to form new connections, basically our capacity to adapt, learn and grow throughout our lives. And cognitive psychologies tell us that variety is the key. This may mean slowing things down (or speeding them up); trying a new flavor, a new challenge or even just a different route home; finding ways to feel creative; and remembering to be in the moment. So is sitting down to read a newsletter. You are doing something for your brain right now! Hopefully you will find an inspiration on these few pages for something new to try: a drawing, or book, perhaps? Or offering a creative assignment "kvetch" (check pg.3 one of the recent publications) to underline the importance of care, compassion, and empathy in these trying times.

My goal is to help us all stay up to date on the wide-range of practices on teaching, research, discussion, and communication of engineering design graphics and engagement activities between EDGD and the larger engineering community.

I hope this newsletter with its creative and courageous contributions will feed into this fundamental debate in engineering design graphics education, at the national levels, the university levels and the course levels and will keep our thriving EDGD community stay connected and work together.

*Diana Bairaktarova*  
EDGD Director of Communications

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### **Coming up in this month's newsletter:**

We have a new EDGD logo **Congratulations again to Judy Birchman on her winning logo design!**



EDGD EC committee has decided to post all logo entries on EDGD website to acknowledge all designers' talented designs and contributions. You can find all these designs and the new logo in different formats saved in files in our EDGD website <https://edgd.asee.org/>. We hope you will start promoting the new logo at different events.



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#### 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 3.

2021 Annual Conference Distinguished lecture EDGD co-sponsored event  
“Innovation is driving transformation of business - and of education” by Dr. Stefan Jochusch, Vice President of Strategy, Siemens PLM – flyer for the event is on page 4.

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### **News and initiatives**

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**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.”

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### **Open calls - Upcoming events**

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**Designing Student-Centered Learning Experience Workshop at Olin College** - The 2021 Olin College Summer Institute will take place in a virtual format June 7 - 11, 2021.

Apply here: <https://www.olin.edu/collaborate/collaboratory/summer-institute/>

**The Polytechnic Summit: Designing and Building a New Technological University**

2-4 June 2021, *TU Dublin, Ireland* (online) [Call for abstracts open](#) (deadline 12 March 2021)

**9th LACCEI International Multi-Conference for Engineering, Education, and Technology:** Prospective and trends in technology and skills for sustainable social development: Leveraging emerging technologies to construct the future, 21-23 July 2021, Buenos Aires, Argentina  
[Call for papers open](#) (deadline 1 February 2021)

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**4<sup>th</sup> International Conference of the Portuguese Society for Engineering Education (CISPEE 2021),  
“Shaping Engineering Education for the 21st Century”**

21-23 June 2021, Instituto Superior Técnico, University of Lisbon, Portugal

[Call for abstracts open](#) (deadline 29 March 2021)

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**ASEE 2021 Annual Conference** July 26 - 29 Long Beach, California

<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

[Call for papers open](#) (deadline 16 March 2021)

**Special Issue: Emerging Learning Technologies for Future of Work and Education in Engineering**

**Journal:** Advanced Engineering Informatics

[Call for paper proposals open](#) (deadline 30 April 2021)

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### ***Recent articles and publications***

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[Hope, stress, sketch & kvetch: Emphasizing caring through reflection in online teaching in the pandemic](#)

Author: Atman C.

*Advances of Engineering Education*

Impacts of Scent on Mental Cutting Ability for Industrial and Engineering Technology Students as Measured Through a Sectional View Drawing. [https://doi.org/10.1007/978-3-030-57983-8\\_25](https://doi.org/10.1007/978-3-030-57983-8_25)

Authors: Katsioloudis, P. J., Bairaktarova, D.

In: Škilters J., Newcombe N., Uttal D. (Eds.) Spatial Cognition XII. Spatial Cognition 2020. Lecture Notes in *Computer Science*, vol 12162. Springer, Cham.

Virtual Reality learning environments and technological mediation in construction practice

<https://www.tandfonline.com/doi/full/10.1080/03043797.2020.1795085>

Authors:Voordijk H., Vahdatikhaki, F.

*European Journal of Engineering Education*

[Descriptive Geometry in the Time of COVID-19: Preliminary Assessment of Distance Education During Pandemic Social Isolation](#)

Authors: Wojtowicz A., Wojtowicz, B., Kopec K.

*Advances of Engineering Education*



# 2021 Annual Conference Distinguished Lecture

By Dr. Stefan Jockusch  
Vice President of Strategy, Siemens PLM



## Innovation is driving transformation of business – and of education

Never before has the process of creating and making products undergone such a rapid transformation in such a short time span as we are witnessing now. One great revolution is the ability to create a complete “digital twin” of the products, manufacturing processes and factories, and the products in operation, which allows to model and test the entire lifecycle of products virtually.

However, there is a widening skills gap that threatens to slow down digitalization. Employers struggle to find candidates with the right understanding across the many disciplines that need to be brought together, and are increasingly taking training into their own hands. Students find out their university degrees not only come at a paralyzing cost, but also are not sufficient to prepare them for the needs of prospective employers. Education, or more generally, the acquisition and development of critical know-how and skills - is likely ready for a deep disruption. A new generation of software technologies might be the enabler of this disruption.

Dr. Jockusch Dr. Stefan Jockusch is vice president of Strategy for Siemens PLM Software, a business unit of the Siemens Digital Factory Division. In this role, he is responsible for driving strategic business planning and market intelligence as well as coordinating business activities across all Siemens PM Software business segments and with Digital Factory Division leadership. Jockusch has served in a number of business leadership and R&D management roles, driving the development and market introduction of radically innovative mechatronic systems, demonstrating ability to build and grow winning cross-functional and multinational teams, foster partnerships with suppliers, build a strong patent portfolio and improve overall business performance.



Time:TBD  
Location:TBD