



Benefits of artist collaborations for effective science communication and graduate student growth



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The graduate student perspective



Three chemistry graduate students co-authored a flashcard "course" on nanoscience in collaboration with Lifeology & artist Elfy Chiang

Motivations for the project:

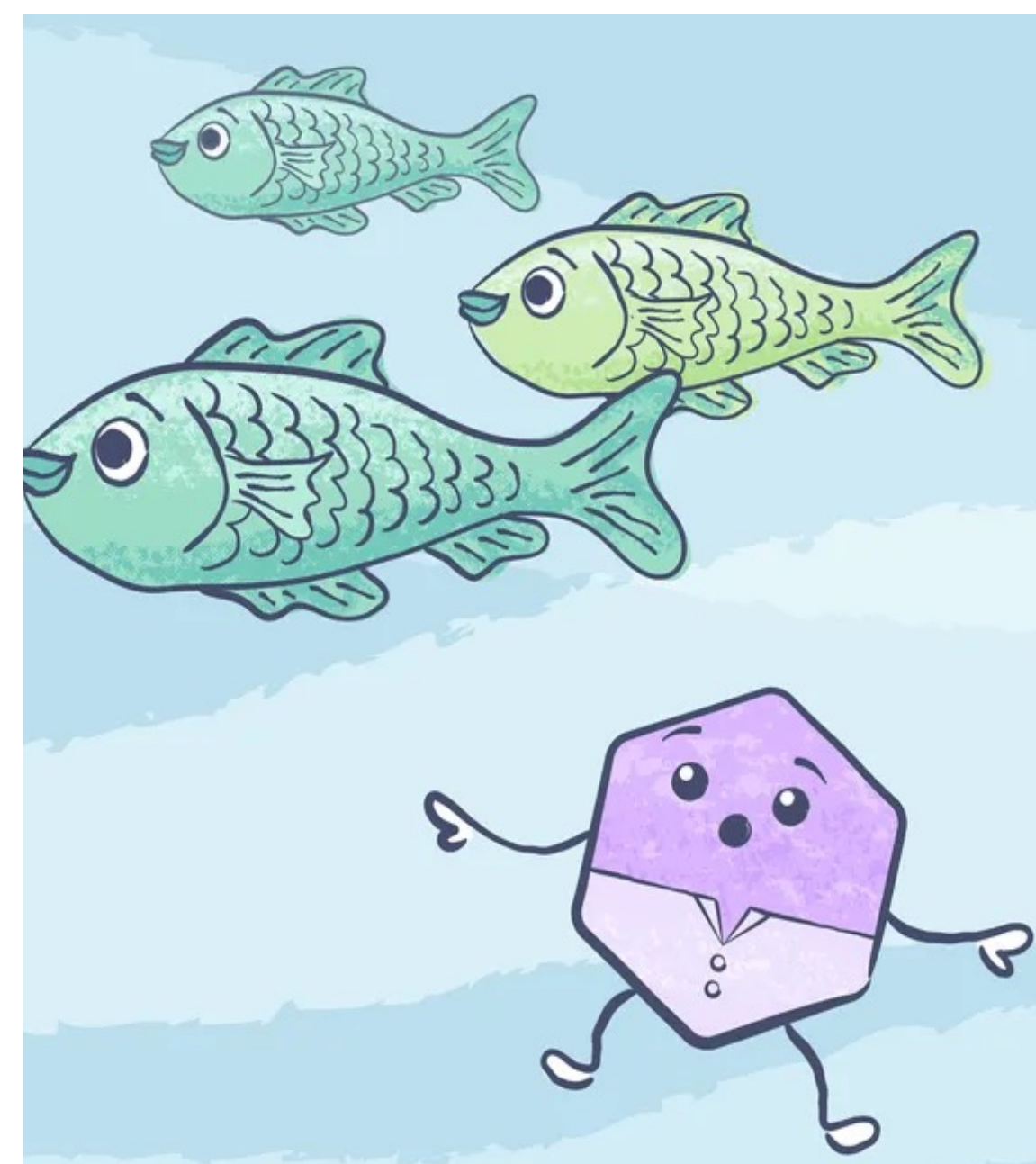
- Trainees in STEM fields often are not encouraged to pursue "outside the lab" activities
- Graduate school should prepare students for more than lab work
- No matter the career, scientists communicate with scientific and non-scientific audiences

Outreach and science communication efforts enable trainees to develop fundamental skills

The challenge of communicating "nano"

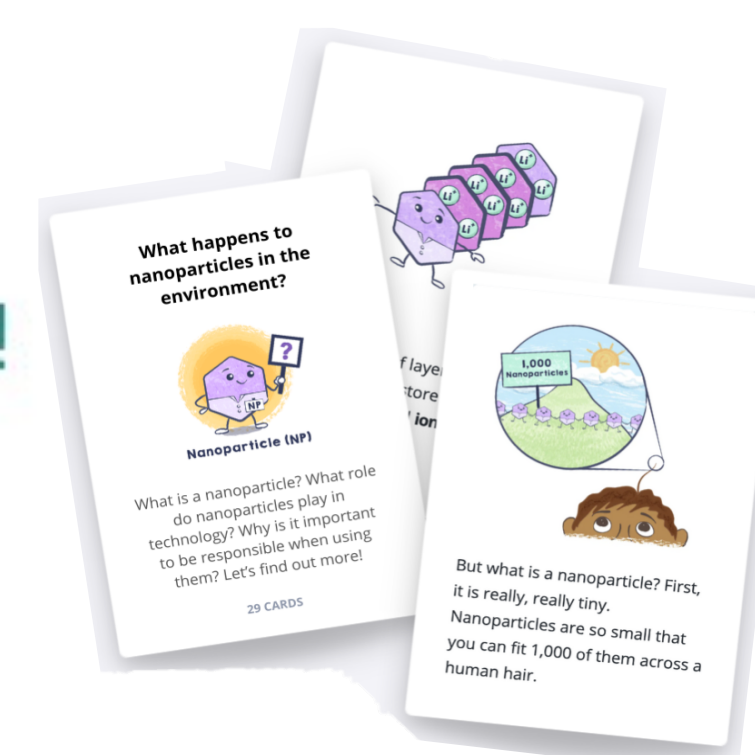
Nano-scale science is especially tough to communicate because of the imperceptible size scale and unique properties

Little perceived risk or public understanding of the role of nanotechnology in everyday lives



Introducing risk in a way that encourages responsibility, but not fear

Creating a Lifeology Course

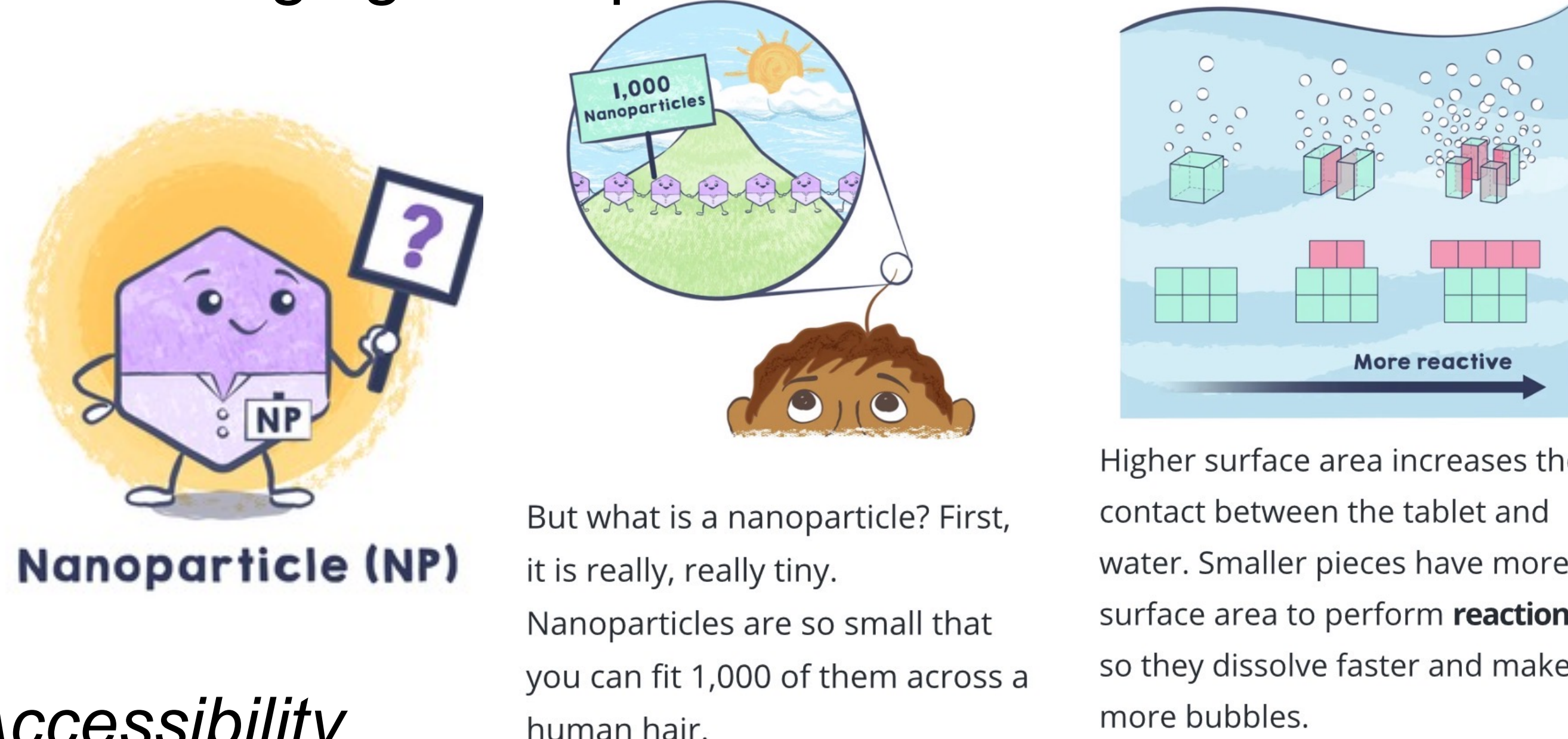


Each course = 25-30 flashcards
Each card = image + 180 characters of text

Advantages of using art for science communication

Building engagement through character and narrative

- By using a character and story, we can develop an emotional connection to scientific concepts
- Art helps bring the character to life
- Simple clear images and analogies help explain challenging concepts



Accessibility

- Lifeology courses are short, simple, and easy to navigate
- Audience can find courses through online search or via Lifeology app
- Images are adaptable and can be used for other forms of informal science communication

Impacts of the Lifeology format

Audience

- Information is relayed in a self-paced, clear and accessible way
- The visual aids guide the audience through the science
- The story and narrative create an emotional connection between the viewer and the scientific concept

Creators

- Writers and artists can hone their skills for communicating in a clear and effective way
- Collaboration helps artists and scientists learn from each other

The importance of diverse SciComm opportunities for graduate students

- Collaboration between scientists and non-experts (artists/storytellers/community members) provides unique feedback on how one talks about their science
- Shifts how you think about your science: from data to *storytelling*
- Helps you talk about your science not only with non-experts but with those in your field
- Provides work away from the lab bench, inspiring creative thinking and preventing burnout

Lessons learned while working on the course

- Not every detail is needed; make sure all facts have function for the audience
- Feedback from multiple perspectives (artist/non-experts) makes for clearer storytelling
- Images + text allowed us to communicate complex and challenging concepts
- Emotional connection to characters in a story engages audiences effectively in science

Nano in the Environment Lifeology Course

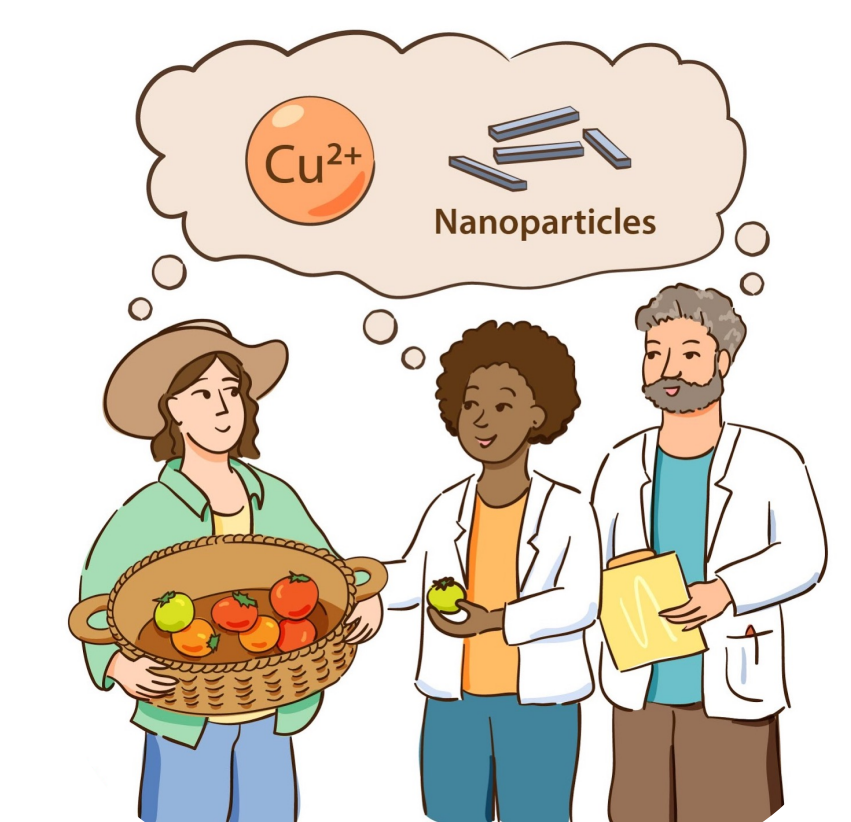


Sustainable Nano Podcast on working with Lifeology



Look for more of Elfy Chiang's beautiful art:

Twitter: @elfylandstudios
Website: elfylandstudios.com



A teaser for our next course!

Citations

- (1) Jarreau, P. B.; Porter, L. Science in the Social Media Age: Profiles of Science Blog Readers. *Journal. Mass Commun. Q.* **2018**, 95 (1), 142–168.
- (2) Boholm, A.; Larsson, S. What Is the Problem? A Literature Review on Challenges Facing the Communication of Nanotechnology to the Public. *J. Nanoparticle Res.* **2019**, 21 (4), 1–21.