

AN INTERVIEW WITH JULIE HU – A STUDENT SCIENTIFIC ILLUSTRATOR

Interviewed by Muhammad Hamza Waseem and Debbie Kao

How did you end up as a chemistry illustrator?

Chemistry is the science of studying about change. It is also a subject that sparks my imagination about art. I fell in love with chemistry when I was in Grade 9. As a visual thinker, I was instinctively drawn by chemistry's quirky smells and magnificent colors. It amazes me how nature is like an artist, and how chemistry forms the foundation of our material world, from the land we step on to the sky we gaze upon.



My love for chemistry transformed my views towards art. I started viewing art as a way of communicating and interpreting knowledge to a wider range of audience. Believing that chemistry could explain the underlying mechanisms of my visual world, I was determined to interpret abstract chemical concepts to tangible terms. That's how I approached my STEAM (STEM + Art) education program Alchemy, especially the sub-project Periodic Graphics. It aims to introduce the properties and usage of each chemical element through vivid drawings.

The most difficult part is to think about the best way to depict each element. As I worked through the graphics, I learned to determine the degree of artistic expression in a graphic to convey the chemical facts objectively without exaggeration. For example, I portrayed calcium as a graphic with a cow's milk bath, since calcium compounds are the main constituents of milk. In the same way, I chose abstract shapes and half transparent colors to portray astatine's properties that are still unknown.

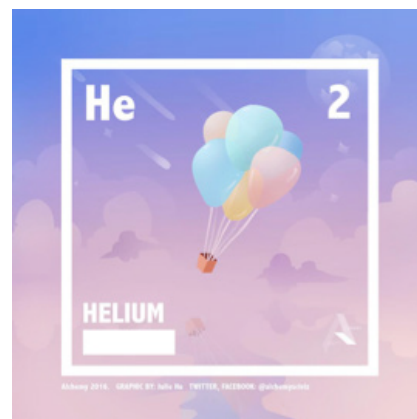
With the power of graphic design, I transformed abstract chemical concepts into tangible knowledge. Now, I am working with institutions worldwide to promote my vision. I also plan to finish the Periodic Table this year.



Why do you think it is important that we recognize art in science?

Well, I think it is important that we recognize art in science because they are so interconnected with each other's development. In the ancient times, especially in the Renaissance, science and arts were classified as natural philosophy. Science is not only a compilation of theories; it is also an appreciation of the nature and its relation to the society and human development. This is where art can help science.

On the other hand, an artist needs to realize that imagination is not free; imagination and creation should be based on observations of the real world.



People always think that art and science are diametrically opposite. What do you think?

People may presume that science mainly relies on logic and the analysis of facts while art relies on the free expression of emotions and ideas. That's not quite true for me. In brief, science explains the underlying mechanism and helps me interpret my visual world with its own language and rules. It connects beauty and logic together in its methodology. Design thinking is needed in science and technology research. An understanding of culture and the arts helps science develop in a way that could benefit humanity.

What do you think is the best way to engage science students to see art in their science work?



I think one of the best ways is to integrate art, humanities, and creative thinking into science education. For example, science students should not only focus on the scientific theories, but also learn to question about the history and the nature of science. They need to know how science impacts all aspects of their daily lives. That's the same with the visual arts and visual communication. Science education needs to integrate communication skills in it. I think asking science students to communicate what they have learnt through visual and creative manners could help them see art in their science work.



What would you recommend for students who wish to explore art in science? Which career paths are available?

As STEAM is gradually becoming a trend in education, there will be lots of STEAM-related careers. Main branches of those careers include digital and integrative media art (computer science and art), animation (physics and animation), scientific illustration (biochemistry/astronomy and art), industrial design, and art conservation (chemistry and art). I would recommend students who are interested in exploring the art in science to not only read more about science during their free time, but also try creating artworks that could be related to scientific concepts. They should also seek a comprehensive curriculum in their education, integrating the arts, the visual arts, and the sciences.

Do you consider yourself a scientist, an artist or an intermediary?

Science and art are the two languages that I speak. I believe that innovation occurs at the intersection of different disciplines. However, seeking to speak both languages has caused me to experience identity confusion — neither the ‘science student’ tag nor the ‘art student’ tag seems to fit; and without a tag, it is hard for me to foresee the kind of route I could take in the future. However, at high school, I have learnt to carve my own path, and my identity confusion has transformed into an understanding that my ultimate success depends upon my independence and hard work.

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Biography



Julie Hu is a student in Bowdoin College. She aspires to become a creative thinker and multidisciplinary designer. She is currently the founder of the STEAM education program Alchemy Science Visualization (the Facebook and Twitter accounts are both [@alchemysciviz](#)), and the creative editor of Young Scientists Journal based in the Great Britain. Her interests mainly lie in innovation, the history of science, illustration, character

design, and world-building. She hopes to help more people to be interested in learning about the chemical world.

