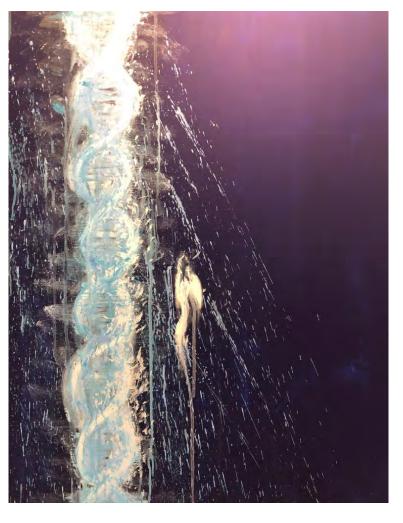


Unlocking Creativity and Student Agency to Promote Learning in a Biology Course

Josephine Pino Biology September 24, 2021





"Journey to Incarnation"

Gratitude to artist Henry Stanton https://brightportfal.com/2020/09/29/journey-to-incarnation/



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I believe in a way art is the first romanticized form of science the beginning stories or myths that we're told to explain life were really just hypothesis. As science has evolved and explained the world around us more and more the beauty and mystique of the world has lost some of it's we, so when works of art like poems or paintings can convey a feeling or emotion about the importance of something as basic as water the connection is so important.

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And Culture and Science

EMBO reports

viewpoint

Science and culture

Western science could learn a thing or two from the way science is done in other cultures

Maurizio Iaccarino

hat we understand today as being 'modern science' is in fact not that modern, but was born nearly half a millennium ago at the time of the Renaissance in Europe. But even if we think of great Renaissance thinkers, such as Galileo Galilei, Leonardo da Vinci or Sir Isaac Newton, as the first 'true scientists', we should not forget that all civilizations

philosophical problems generated by the study of complexity. Modern, or Western, science may not be best suited to fulfil this task, as its view of the world is too constrained by its characteristic empirical and analytical approach that, in the past, made it so successful. We should therefore remember the contributions of other civilizations to the understanding of nature—in particular

During the Renaissance, European scientists and philosophers started challenging long-held beliefs and developed a new natural philosophy. Science and the arts truly flourished in Europe, and this was caused and furthered by various positive developments that took place at that time. Most importantly, the new philosophy started a process that eventually led to the independent



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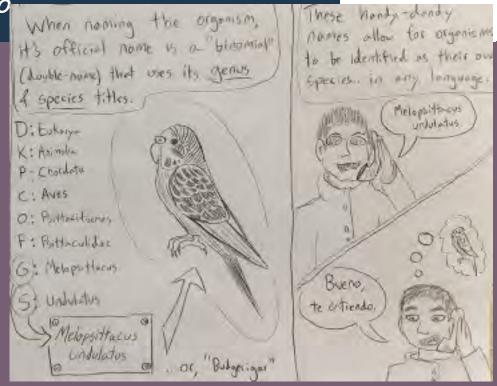
I found it surprising that when Europeans colonized other regions, they caused a loss of traditional knowledge. I thought that maybe by colonizing a new region, they would in fact gain more knowledge due to the addition of another culture. However, maybe through battle or something similar that caused indigenous people to lose their lives during the colonization, knowledge died with the indigenous people.

I do think that the authors ideas are important because they highlight how we can understand science better if we open our minds to different approaches. I think being aware of both traditional and Western approaches to science enables us to sift through studies more thoroughly, because we are able to get the basic, quantitative knowledge through Western approaches, as well as the philosophical and conceptual understanding through the traditional approaches. As a result, we are more flexible in our general practice of science and can thus attain the most knowledge and understanding



Science is personal too





BI 212 Students



Summer Fireflies Night Lights by Tara Krishna

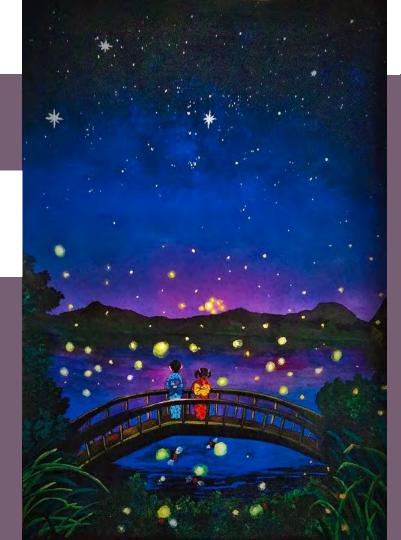


If you are curious, this is how fireflies light up at night:

Fireflies are able to produce light through bioluminescence, which occurs usually in organs located in the firefly's abdomen. In these organs, an enzyme called luciferase acts on the substrate, firefly luciferin, while in the presence of magnesium ions, ATP, and oxygen. This chemical reaction releases energy in the form of light.

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BI 211 Student's response to an "energy transformation" prompt





A Haiku

Oh Friend

You release energy and

You turn my complex worries into simple worries

Your love is a catabolic pathway



Life Challenges and Solutions in plants and Animals Environment Response, Nutritional Mode, Growth and Regulation, Transport, Absorption, Reproduct ion, Gas Exchange

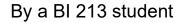


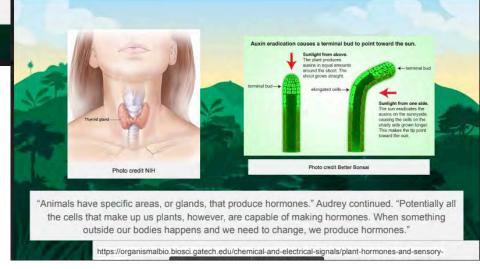
Hi, my name is Ibrahim and this is my mom her name is Huda. Today my mom she will teach me some biology and I'm somited.



Telling a story in a children's book

This student wrote their book with a theme of difference and acceptance







Gus has a birthday Surprise! Sources: completel Giology





SPRING 2020

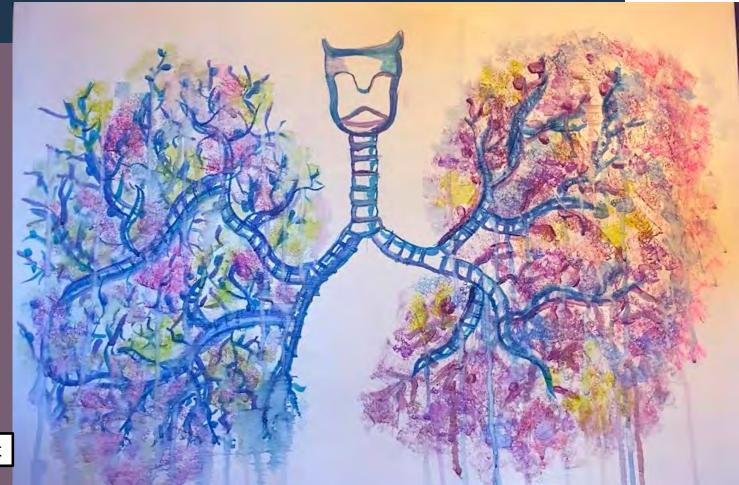
"Communicating Science through Art"

A collaboration
Sandy Sampson
Linda Fergusson-Kolmes, and I
Art and Drawing Classes and Biology



Nicole, Art Student





Victoria, Art Student



Opportunities

- Student Portfolios
- Advising/ Support across educational experience within Academic and Career Pathways
- Student Cohorts?
- CONNECTIONS!! PUT the HART (Humanity and Arts Initiative) in STEM!



With Biology and other STEM subjects, there's a common emphasis on learning material through a series of content memorization, which can result in less-than-stellar connections across different learning concepts. But with creative assignments and an emphasis on student-choice during last year's biology class, it felt like I had the freedom to undertake new lessons without losing sight of practical applications or other related biological concepts. This creative approach to teaching has helped me gain new insights in not just my own pursuit of biology, but has also translated into a more open-ended and growth oriented mindset when undertaking other pursuits. Josephine Pino's Biology class's open ended approach to learning new skills has given me newfound confidence to apply for jobs in the sciences in areas outside of my current scope of knowledge. The outcome: I am now entering the first step in my career working at the American Red Cross in biomedical services, which is a direct extension of some of the focus areas I undertook while taking Pino's Biology class!

With permission, from a Bio 212-213 student



Questions?

If time allows

Sam, ART St

If time allows



"Remote"Fermentation Research – Student Questions

Does grape type affect yeast fermentation rate?

Does a salivary enzyme effect the rate of fermentation?

Do different variations of a kimchee recipe impact the acidity of the fermented product?

Does the addition of probiotic bacteria change the rate of fermentation in milk?