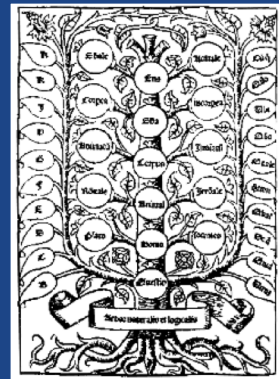
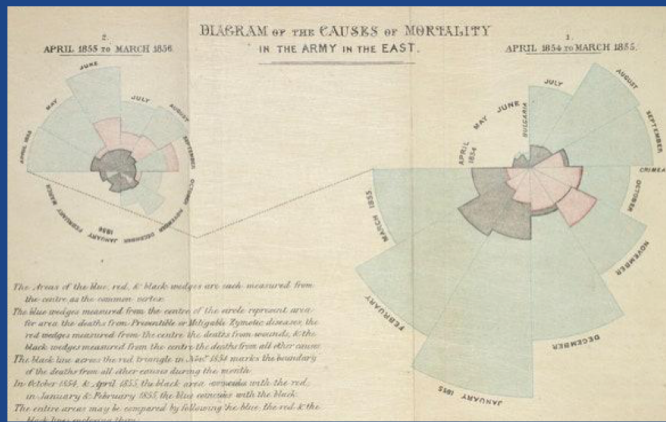
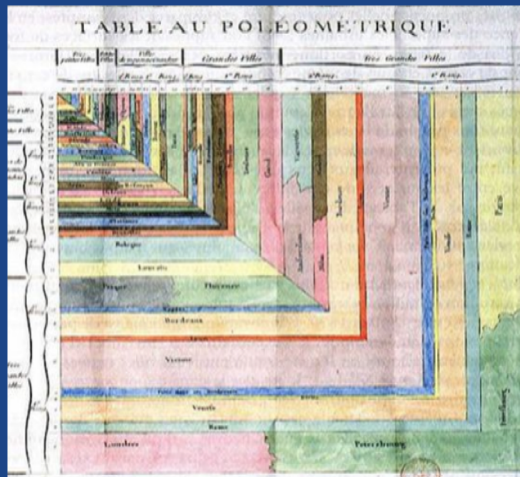




COLUMBIA

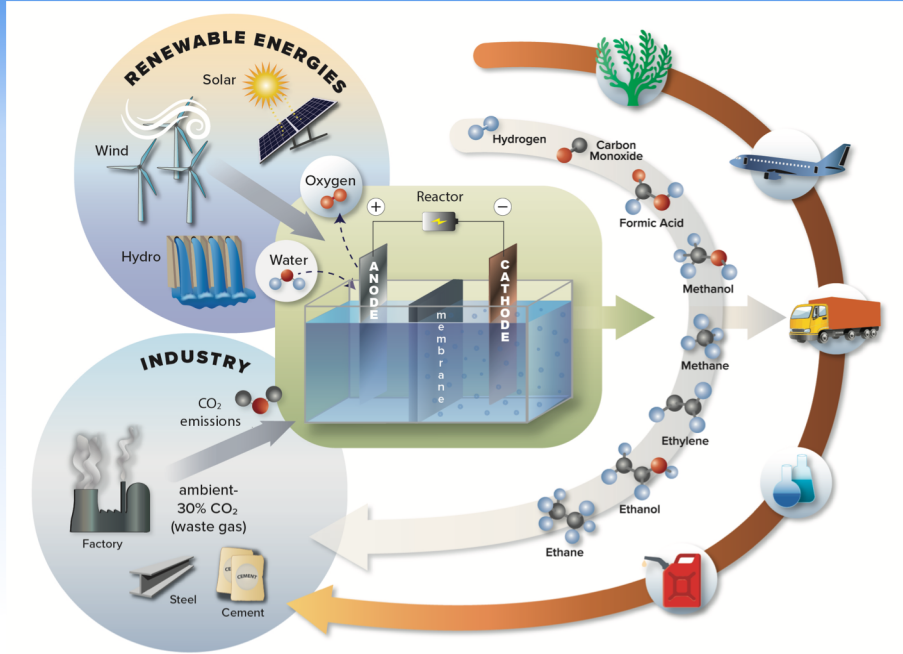
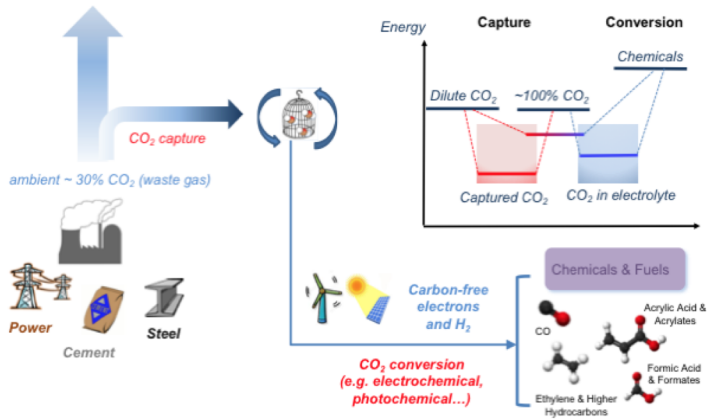
WECONNECT WEBINAR

# Effective Data Visualization for the Dissemination of Technology and Science Research



# What's the story?

Overall process depicting the path of combined CO<sub>2</sub> capture and conversion



Moving from this

To this



COLUMBIA

WECONNECT WEBINAR

# Hello, I'm Alissa Park

*Director of Lenfest Center for Sustainable Energy*

*Lenfest Earth Institute Professor  
of Climate Change*

*Professor, department of Earth and Environmental  
Engineering and department of Chemical  
Engineering*





COLUMBIA

WECONNECT WEBINAR

# Hello, I'm Nicoletta Barolini

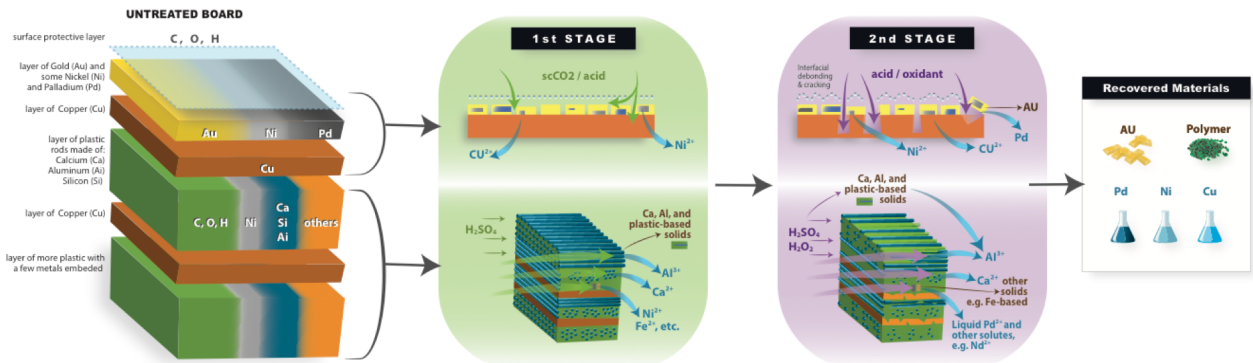
*Art Director, Office of Communications  
and Public Affairs*

*Ed.M. in Art & Art Education*





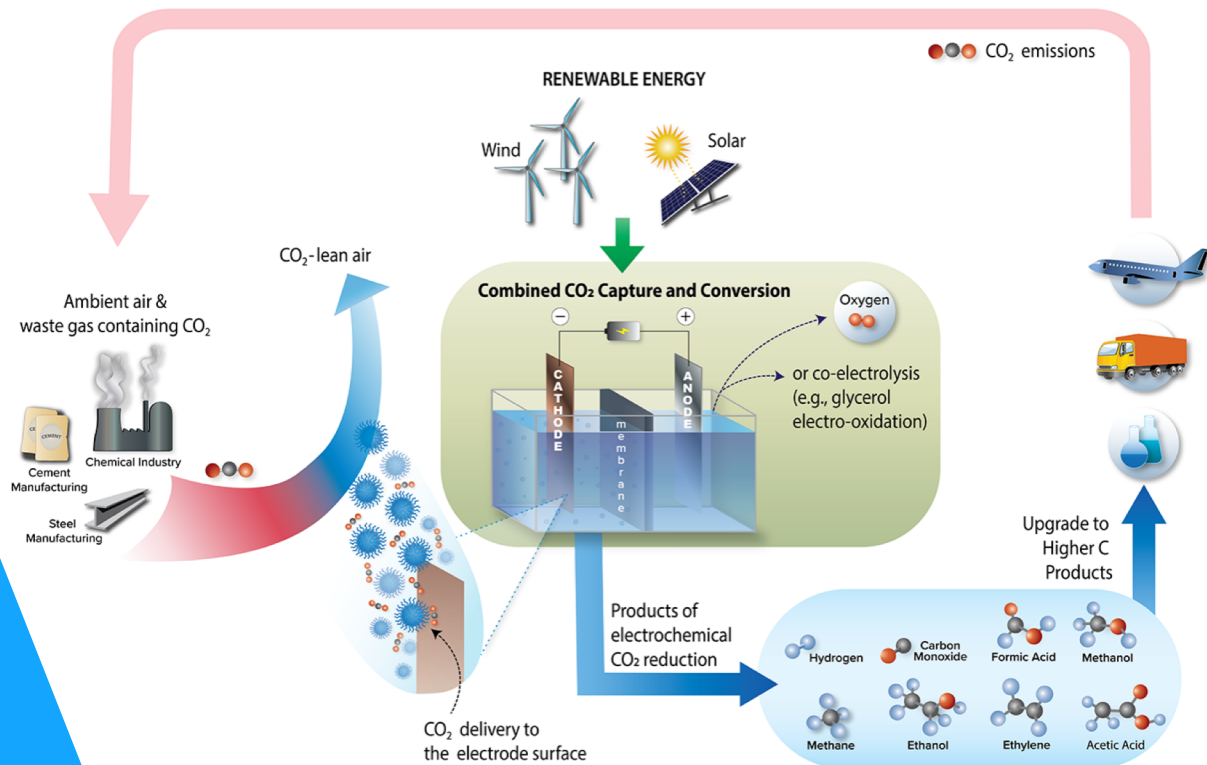
### GREEN EXTRACTING METHOD USING CO2 FOR E-WASTE RECYCLING



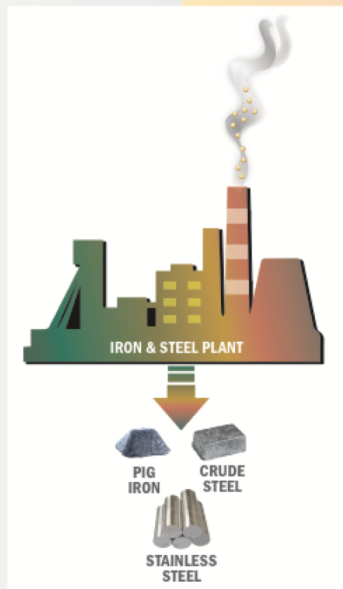
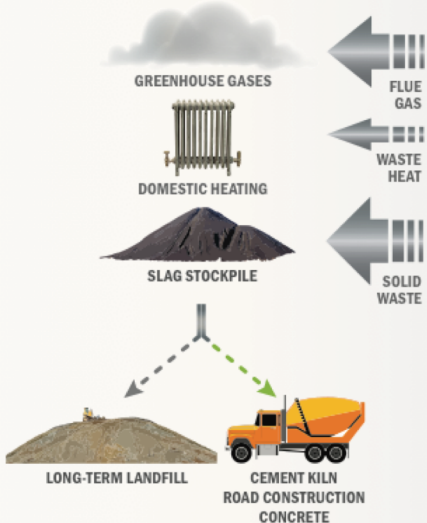
Over the years, we have successfully worked together and created clear visuals of some of the innovative research in sustainability done at the Park Lab.



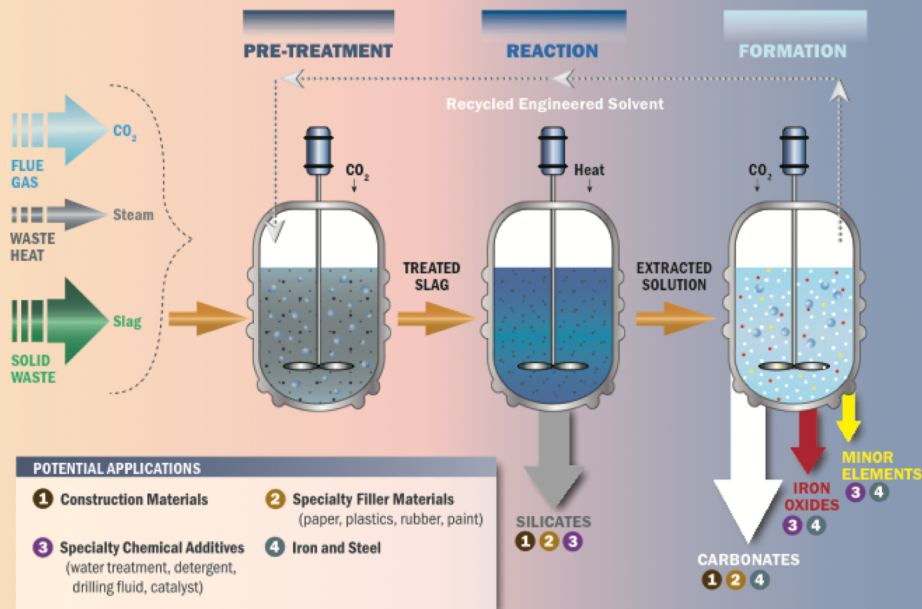
Pictures can be more efficient than words, especially when communicating complex ideas.

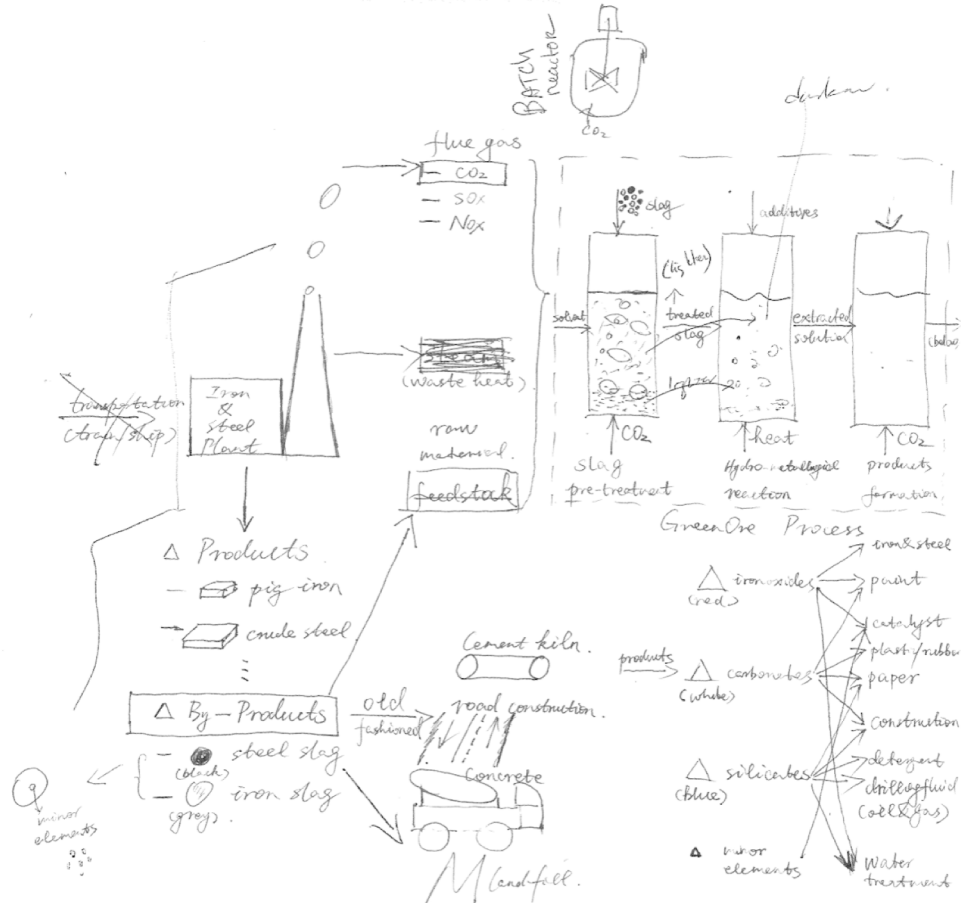


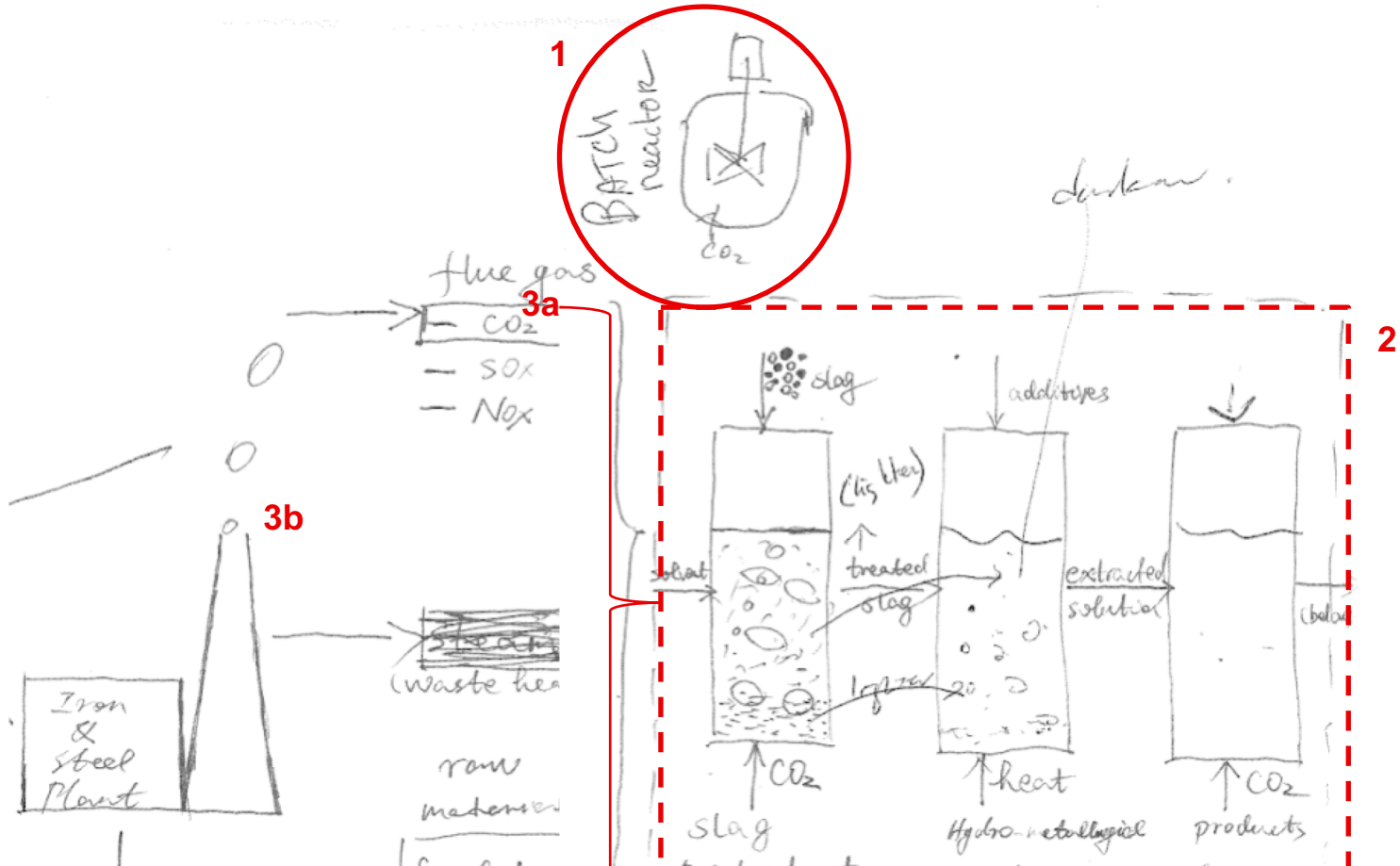
## CURRENT TECHNOLOGY

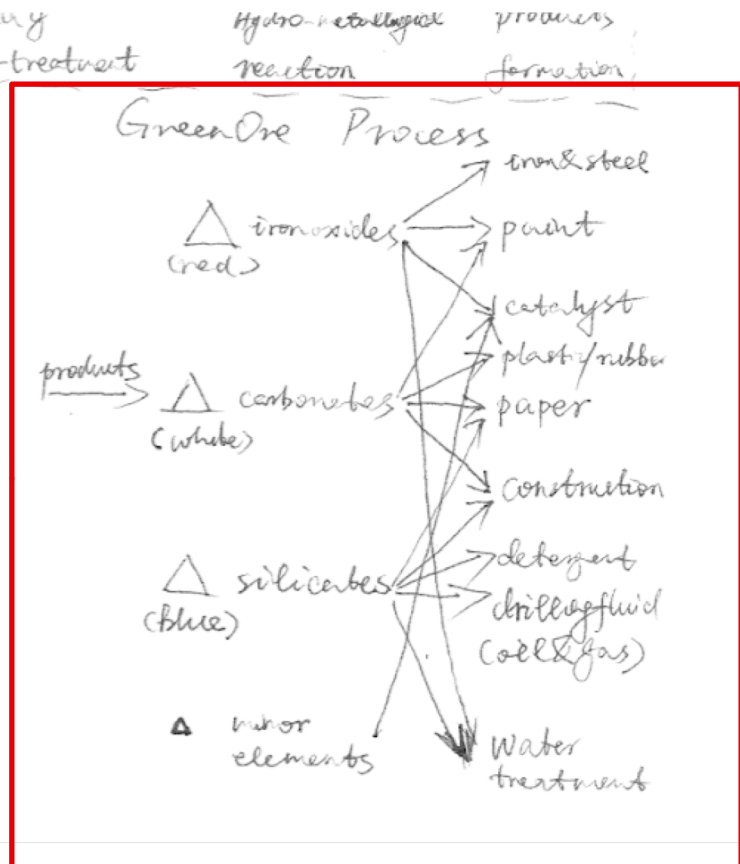
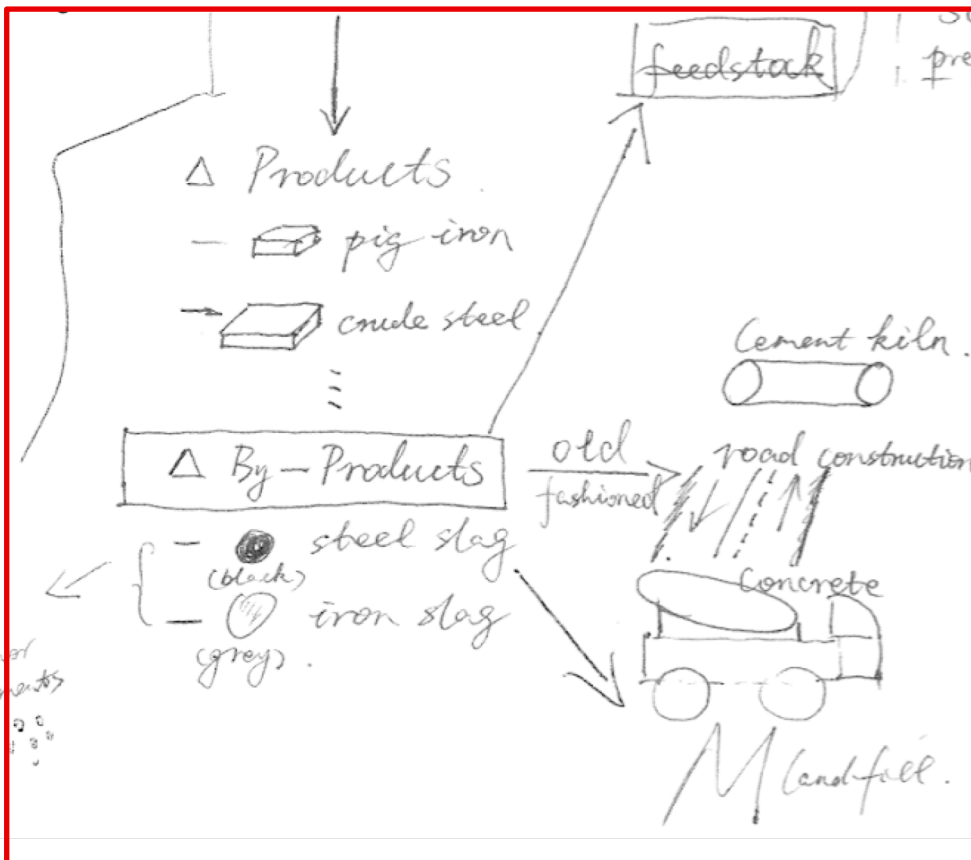


## COLUMBIA ENGINEERING TECHNOLOGY

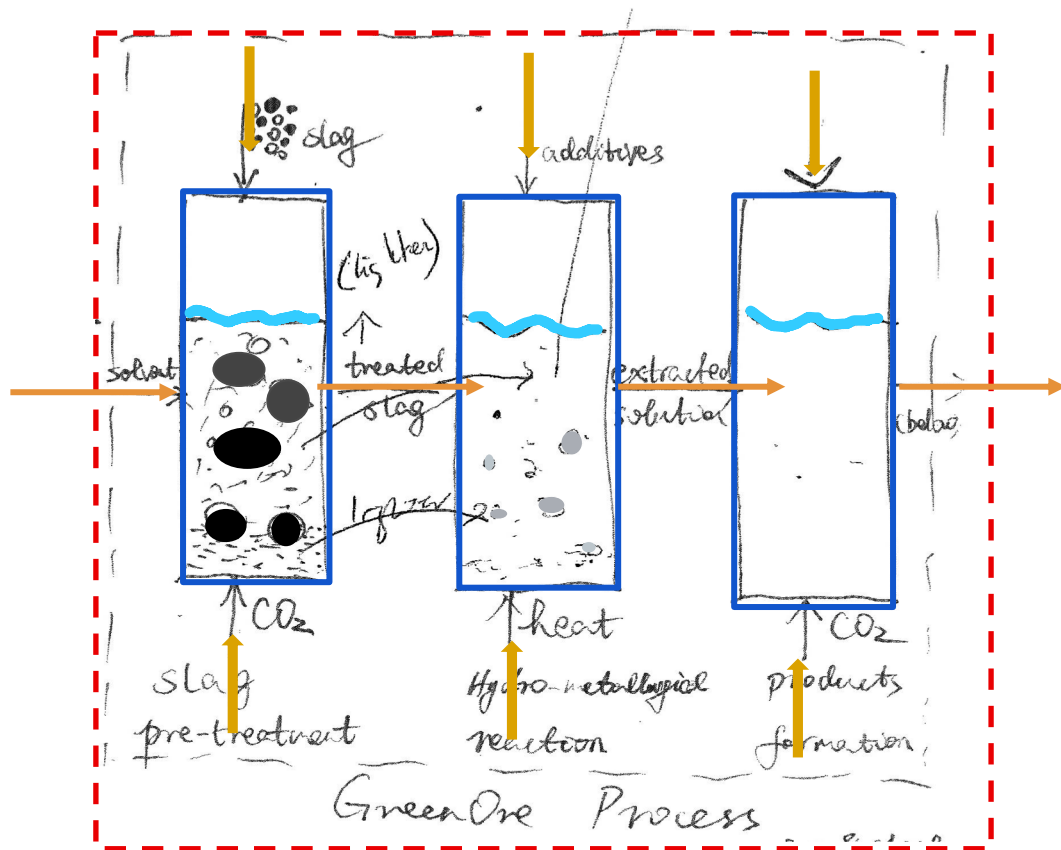


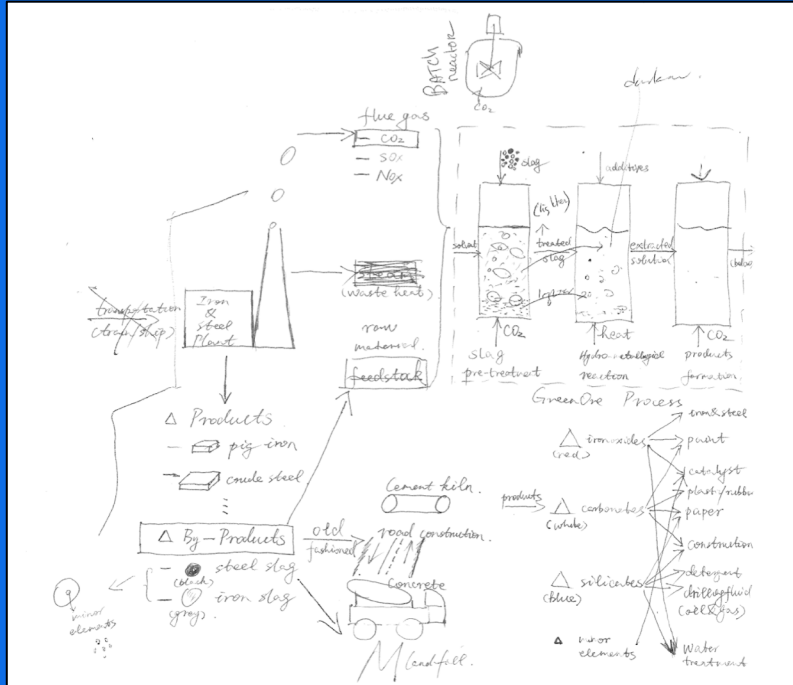






↓  
minor elements





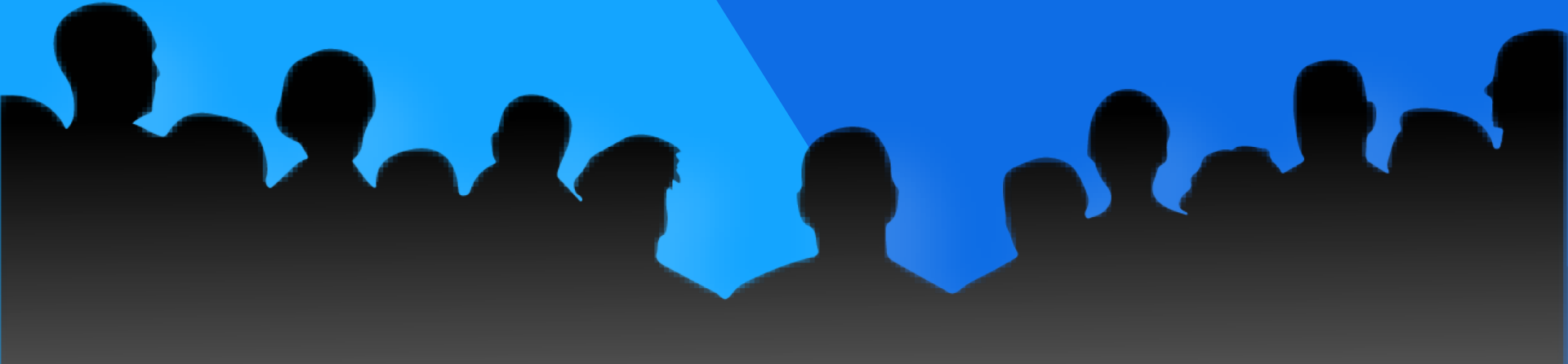
- ▶ Audience
- ▶ Context
- ▶ Path
- ▶ Actors
- ▶ Clarity

## ► Audience

Who is your audience?

How familiar is your audience with the subject matter?

What's your desired outcome?

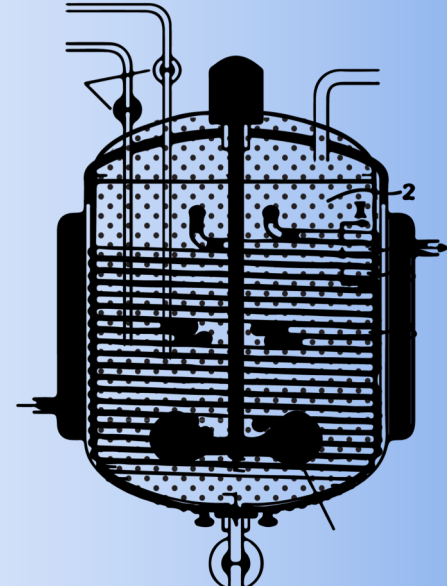
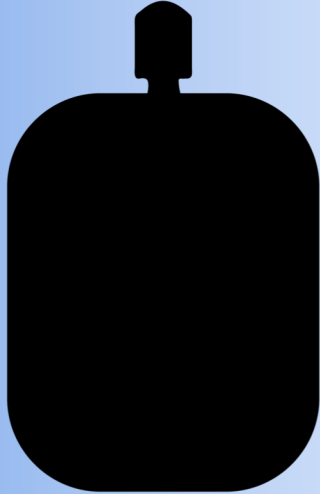




Simple

Sweet  
Spot

Complex





front cover

back cover

content

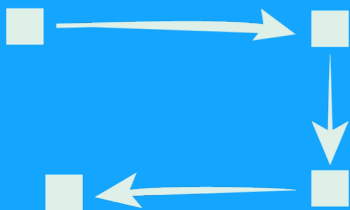
▶ **Context**



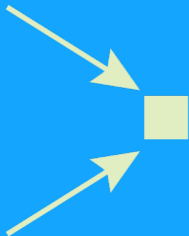
Linear



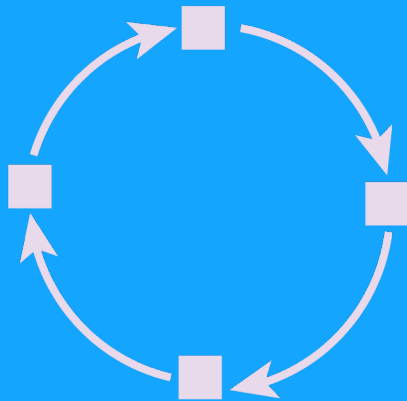
Serpentine



Convergent



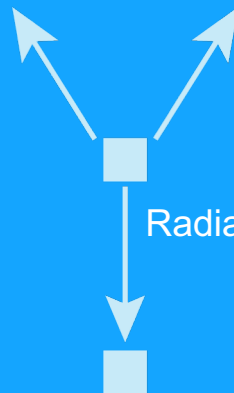
Circular



► **Path**

- Linear
- Serpentine
- Convergent
- Circular
- Radiating

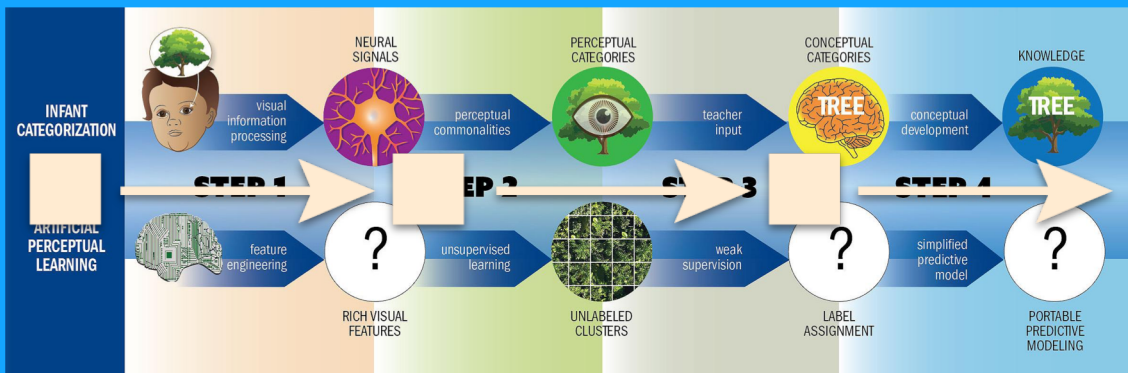
Radiating



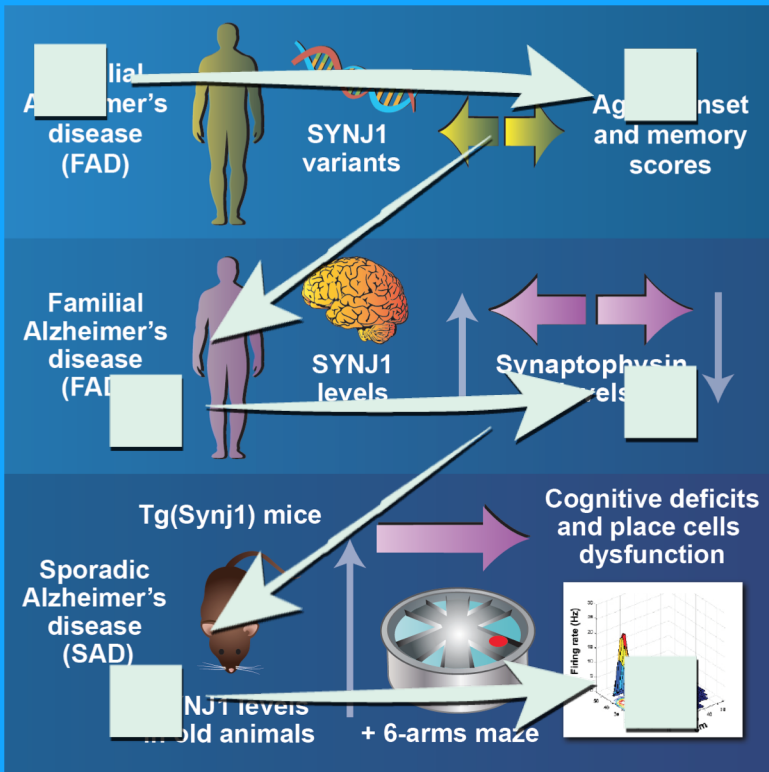
Example of a linear path



► **Path**  
 Linear  
 Serpentine  
 Divergent  
 Circular  
 Radiating



Example of a serpentine path



► **Path**

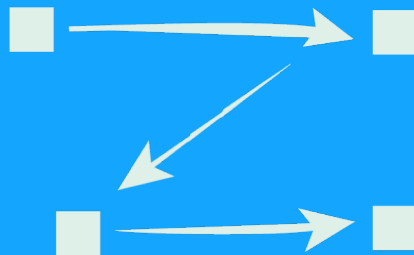
Linear

Serpentine

Divergent or Convergent

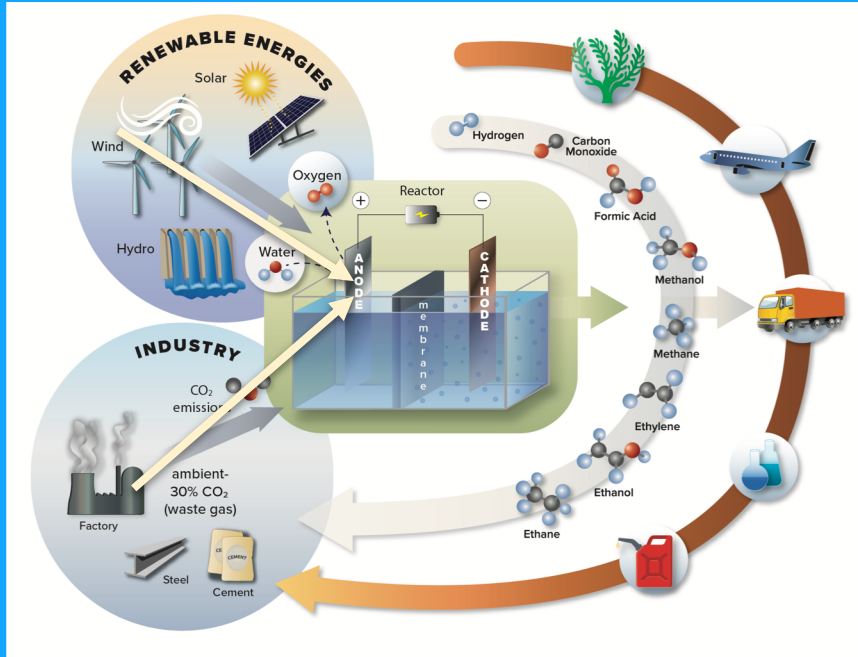
Circular

Radiating

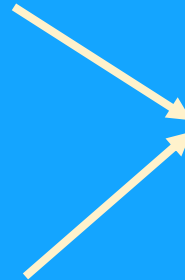




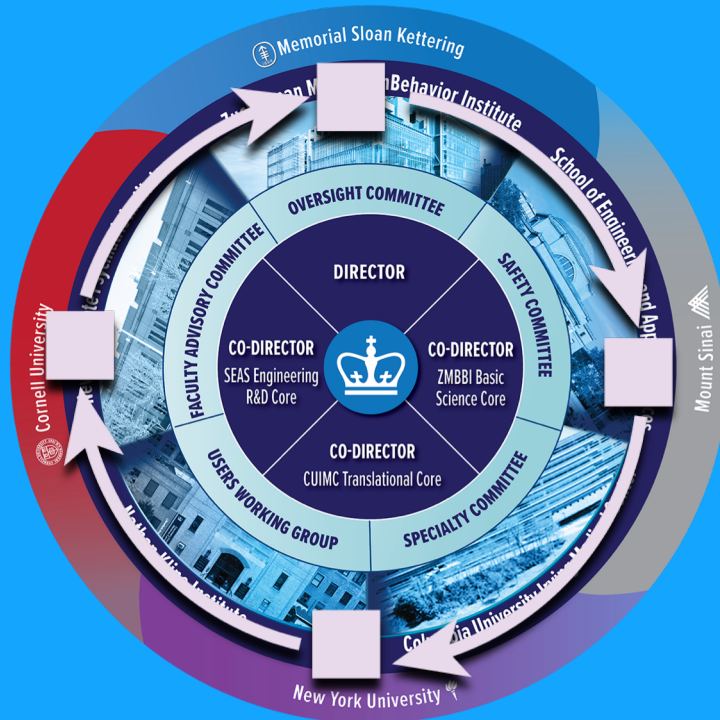
### Example of a convergent path



- ▶ **Path**
- Linear
- Serpentine
- Convergent**
- Circular
- Radiating

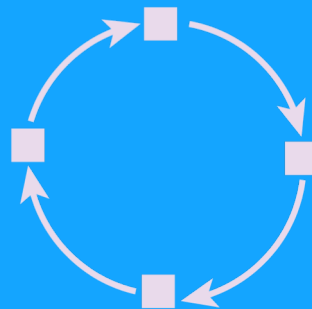


Example of a circular path

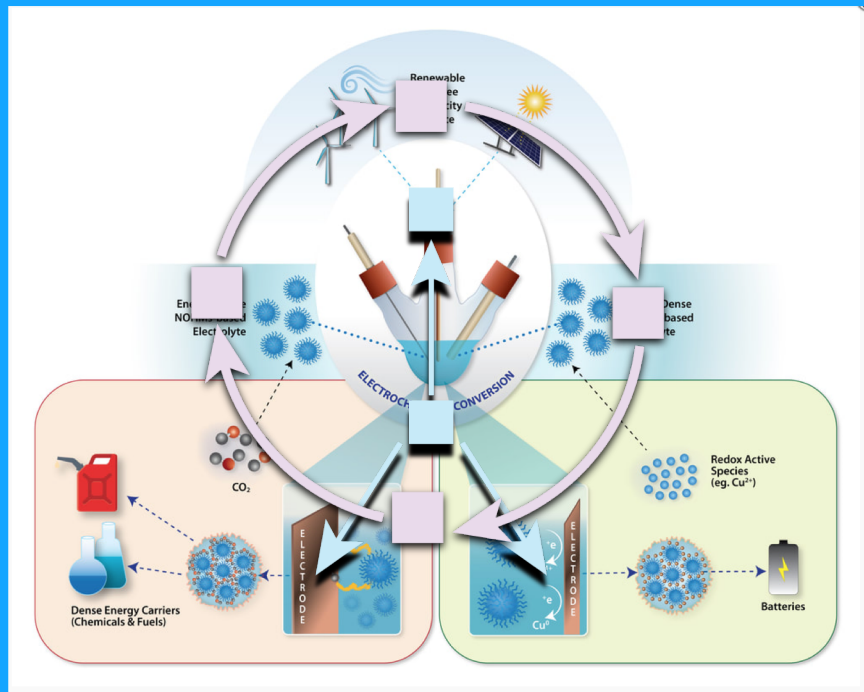


► **Path**

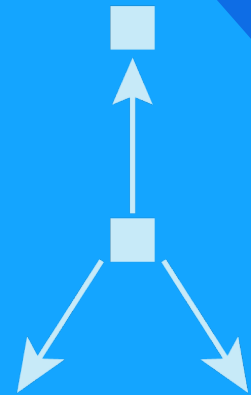
- Linear
- Serpentine
- Divergent
- Circular
- Radiating

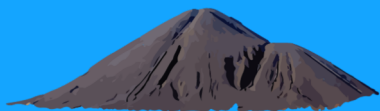


Example of a radiating path



- ▶ **Path**
- Linear
- Serpentine
- Divergent
- Circular
- Radiating**





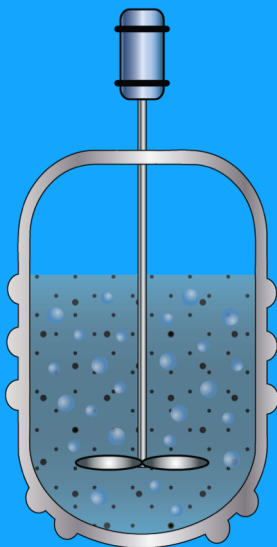
SLAG STOCKPILE

Villain



IRON & STEEL PLANT

Co-Star

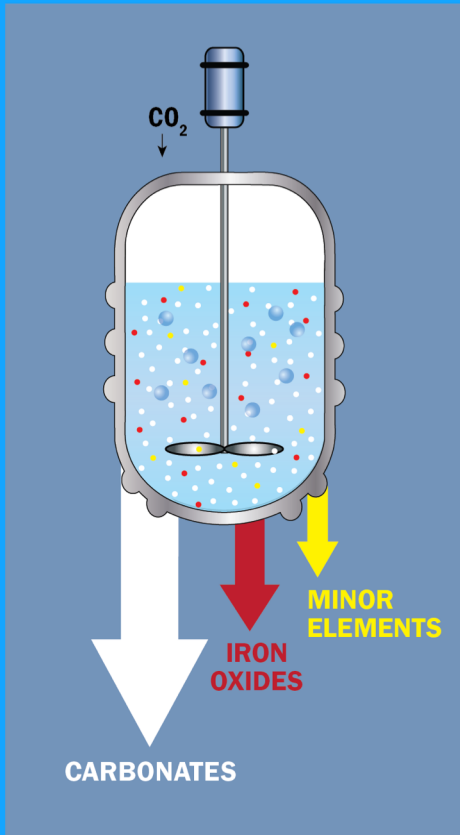


Batch Reactor



Star

▶ **Actors**

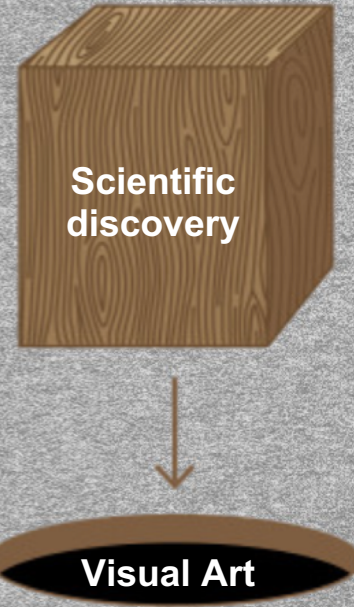


## ► Clarity

Colors are not used superfluously, but to give clarity to the material



# Pitfalls that limit effective collaboration





# PITFALLS



## **Time**

tight deadlines



## **Cost**

capped budgets



## **Communicating**

explaining the intricacies



## **Resources**

opportunity to engage with artists



“The main goal of the **scientist** is to discover the knowledge, the dissemination is a second priority”

“Whereas, the main goal of the **artist** is that of disseminating concepts, ideas and narratives visually.”



Many of the exciting discoveries are smaller steps along the way that are hard to explain.



Visualization of data can lead to new hypothesis and insights for scientists themselves



# BENEFITS



## Clarity

use artwork to  
clarify ideas



## Funding

art could bring in  
additional funding



## Process

use art for  
model-building



## Assets

visual library aids in  
promoting discoveries

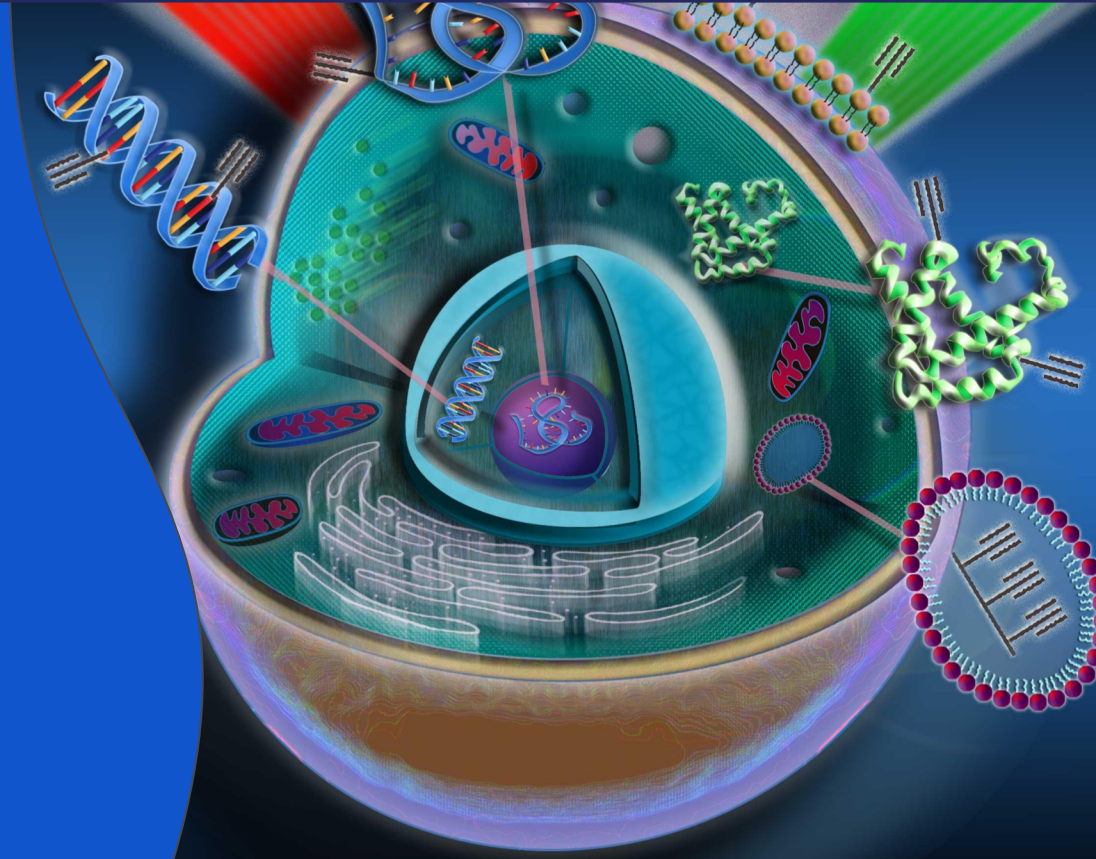


**INCLUDE ART  
AT THE START!**

Columbia University  
resources for graphics:

**Nicoletta Barolini**  
[nb2367@columbia.edu](mailto:nb2367@columbia.edu)

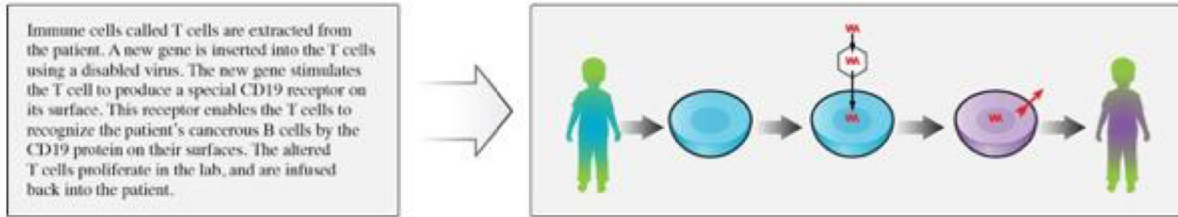
**Also visit Columbia Creative at:**  
<http://creative.columbia.edu/>



An external resource for creating science visuals is this online course endorsed by the American Medical Illustrators Association, they are offering a special discount rate for the Columbia community of \$79.00 (from \$199.00).

Follow the instructions below:

## S.P.A.R.K. | 5 strategies for the visual communication of science



**pictureasportal.com**

Use discount code “**columbia**” by Sept 30th

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