

# Visualizing Your Research

**MSU Creative Services**

University Communications

**MSU Creative Services is an  
in-house creative agency within  
University Communications.**

**4  
Designers**

**75+ Years of Design  
Combined Experience**

**Graphic Design · Illustration · Web and Social Media Graphics · Displays and Banners**

**Award-winning work**



**We are fully integrated with the MSU News Service and MSU's marketing, visual media, and web communications departments.**

**\$75** Design charge  
per Hour

# MSU Creative Services Designers



**Kristen Drumheller**



**Alison Gauthier**



**Britney Patek**



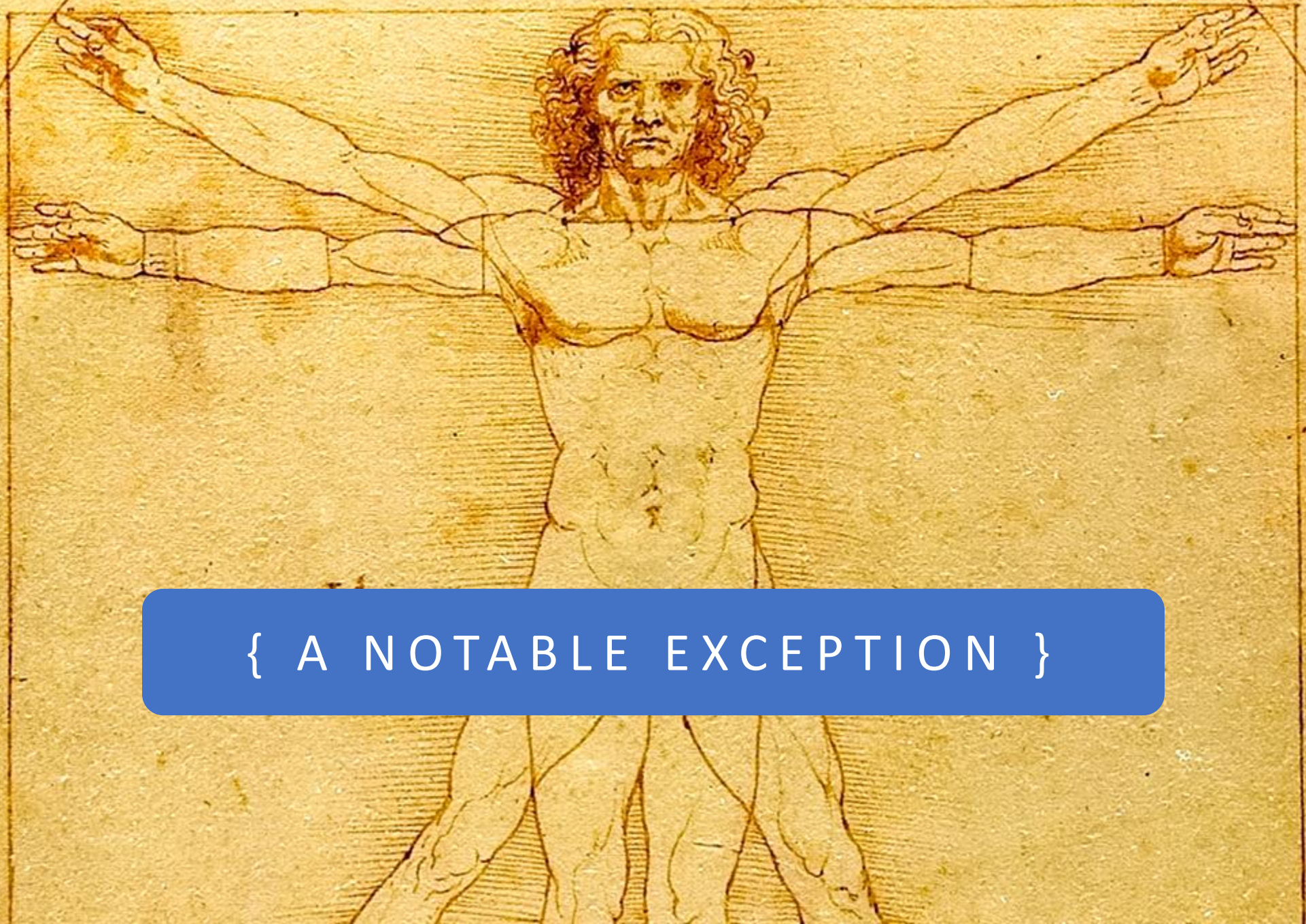
# How to communicate with a graphic designer



# Tip No. 1

## About Designers

- **Graphic designers are not typically scientists.**
- **But they are experts at communicating complicated ideas and concepts to a wide variety of audiences.**
- **Designers love to solve visual problems.**



{ A NOTABLE EXCEPTION }



# Tip No. 2

Know what  
you want

- **Questions to answer first:**  
**Is the graphic or illustration meant to tell a story? Example: sequential series of illustrations, or stand-alone.**
- **How will it be used?**
  - **printed in journal or book**
  - **Online or digital only**
  - **Poster or large format**

# Tip No. 3

Provide clarity

- **Be very clear on your needs.**
- **It is important to determine the focus of the illustration before getting started.**
- **BONUS TIP:**  
**MSU News Service has writers who can help you translate content for designers.**

# Tip No. 4

Give it the once  
over—maybe  
twice

- **Before you meet with the designer, make sure your concept is fully vetted, and the desired end-result is clear to you.**
- **Understand that significant changes result in significant delays and increased costs.**

# Different types of illustrations



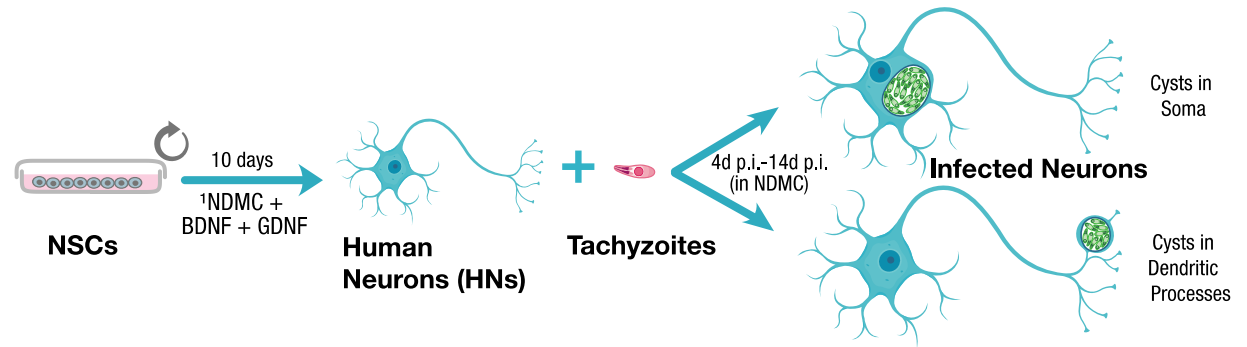
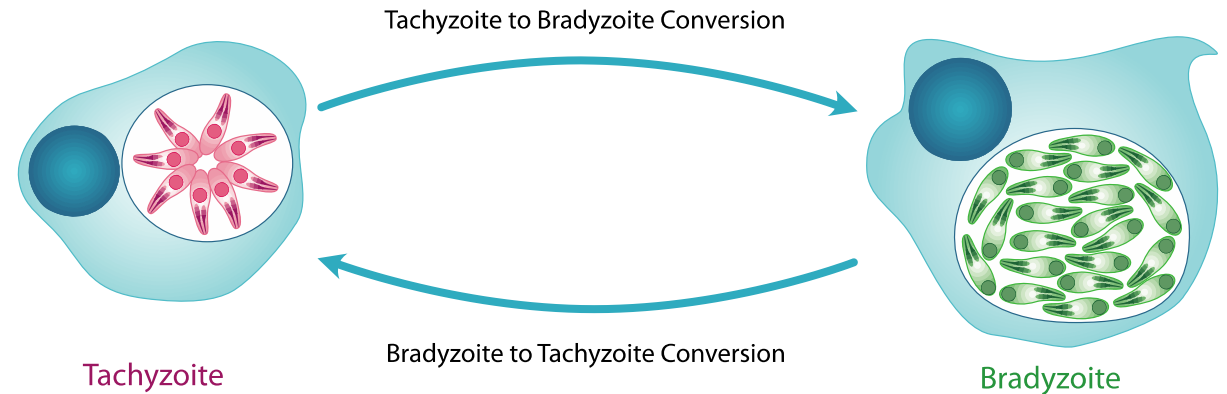
# Types of Illustration: Hand-drawn

- Hand-drawn graphics are appropriate for certain uses, including books and other publications.
- Hand-drawn graphics take more time to produce.



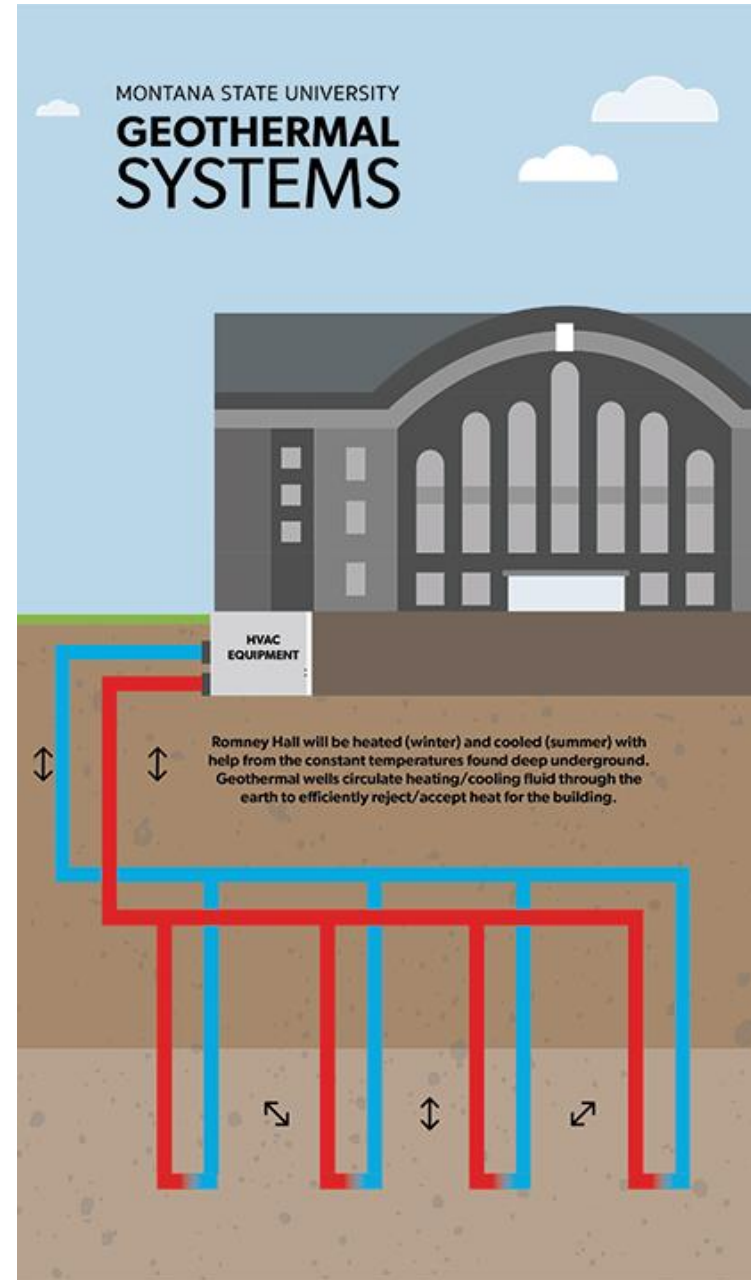
# Types of Illustration: Digital graphics

- Digital graphics can be created more quickly, due to the ability to duplicate and alter existing pieces of the illustration. They also allow for smooth color gradients.



# Types of Illustration: Digital diagrams

- Digital graphics can make the functions of complicated systems immediately understandable. In this case, a flat illustration style is used to simplify a system into a diagram.



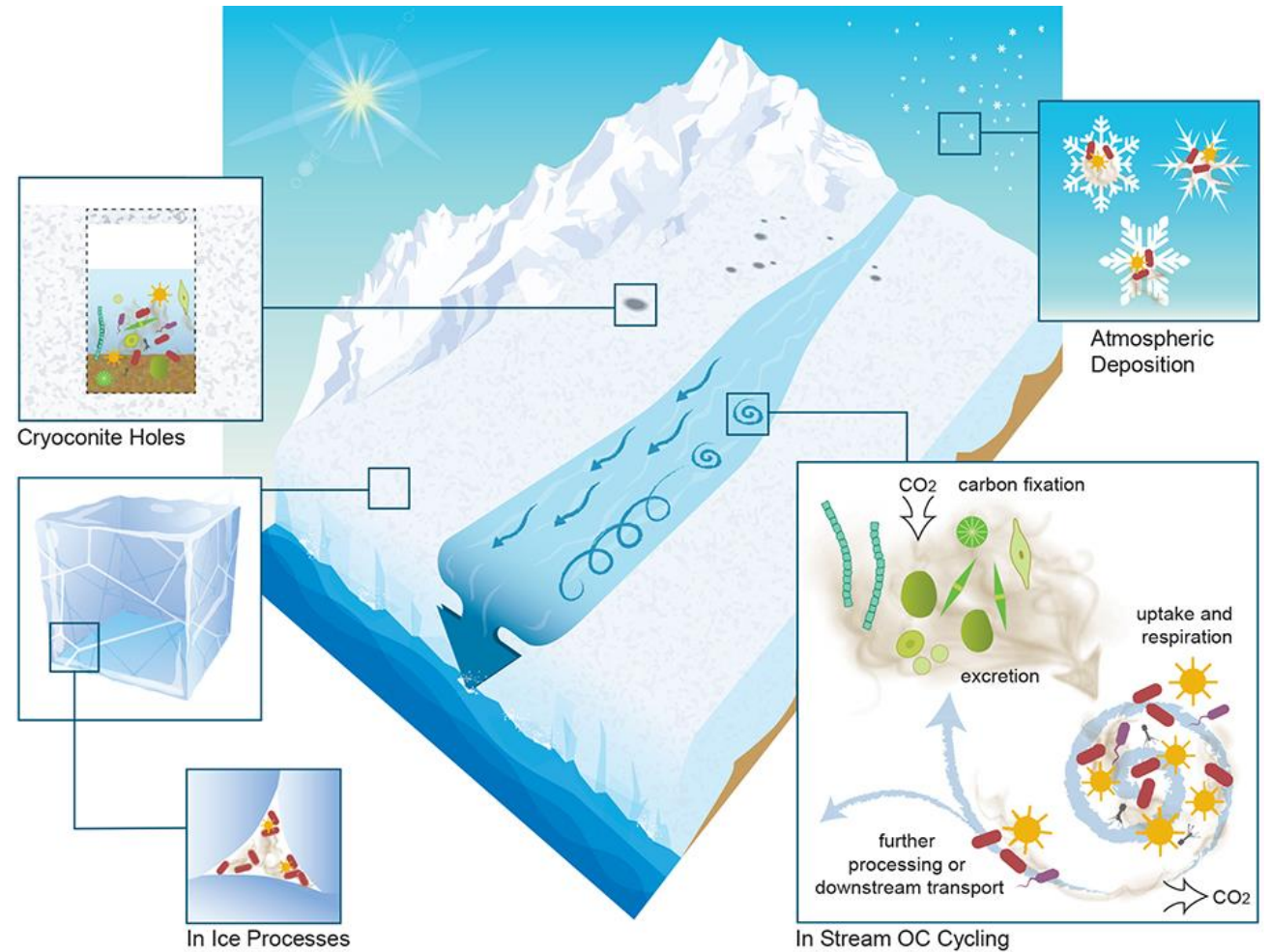
Tip  
No. 5  
Get Ready

- **Provide examples of what you want the designer to illustrate — and the style you are seeking: realistic, figurative or conceptual.**
- **Let the designer know of any elements that they should avoid.**
- **Provide source materials such as photos, diagrams, charts or figures.**



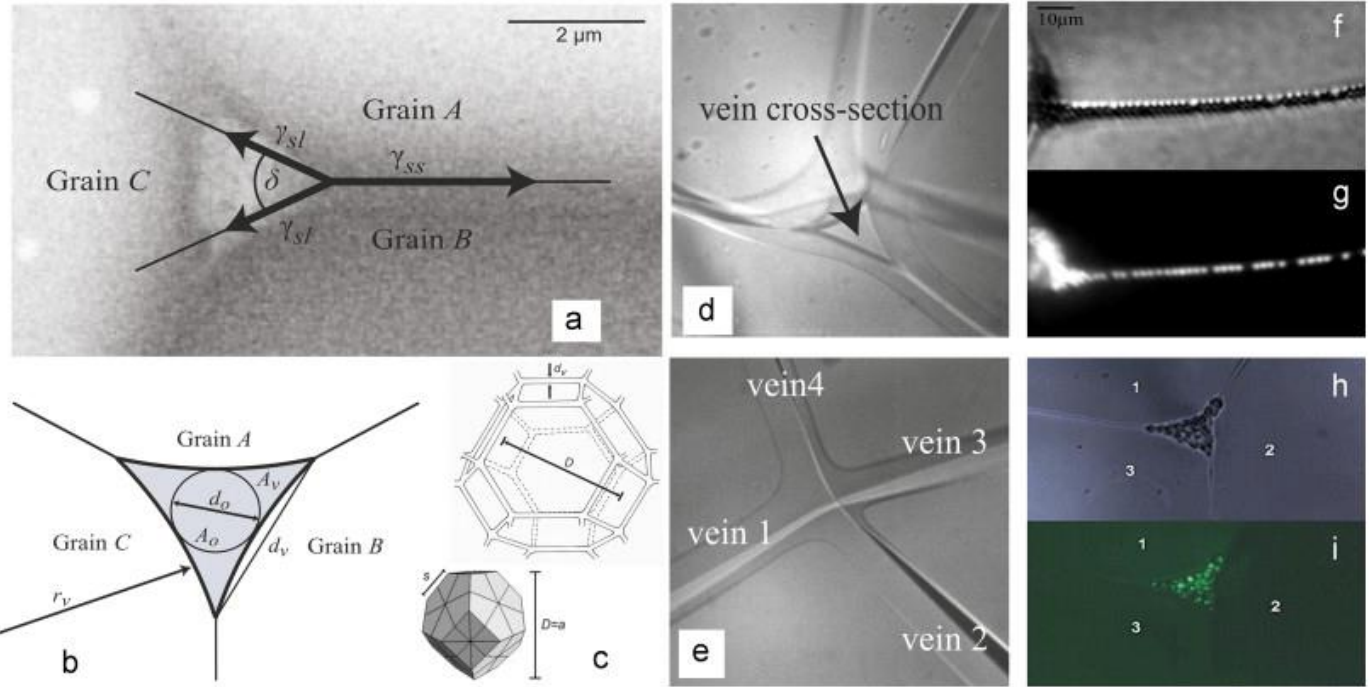
# Glacier Carbon Cycle

- An illustration of carbon cycling within glacial ice was created for a scientific journal and was later modified to be used as a poster for a lecture.



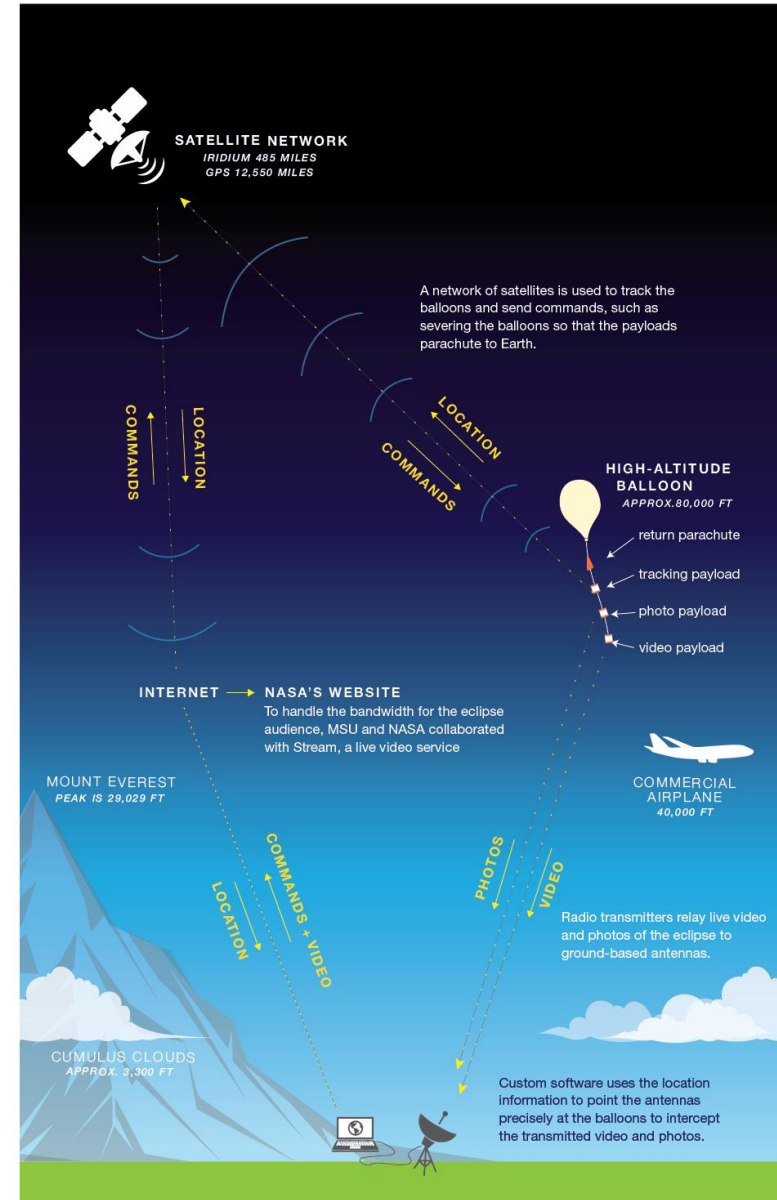
# Glacier Carbon Cycle Source Images

- Photos, figures and captions provided the source for the final illustration.



# Eclipse Ballooning Project

- Digital graphics can clearly depict the progression of stages of a research project.

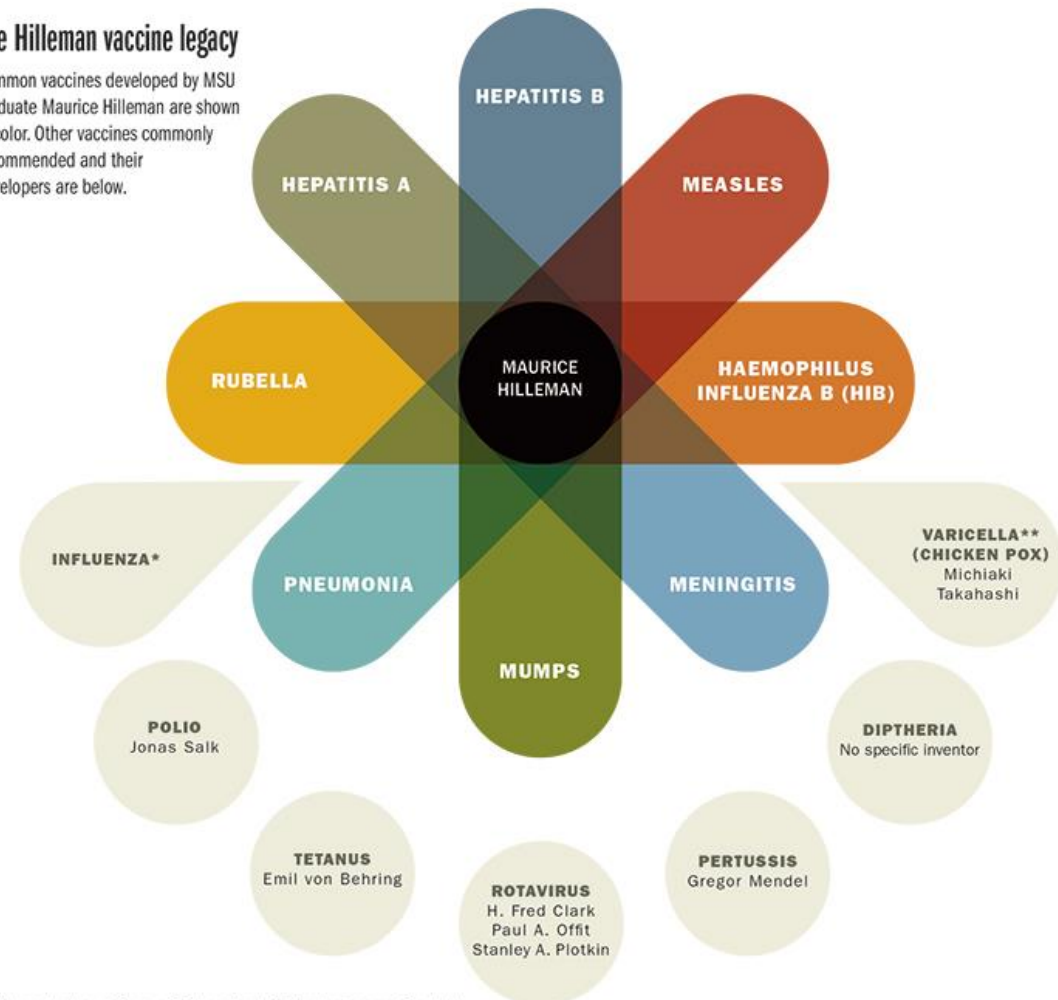


# Graphic diagrams

- Diagram showing the vaccine legacy of Maurice Hilleman, for *Mountains & Minds* magazine.

## The Hilleman vaccine legacy

Common vaccines developed by MSU graduate Maurice Hilleman are shown in color. Other vaccines commonly recommended and their developers are below.



\* Hilleman's observations on influenza's ability to change over time led to the practice of developing an annual flu vaccine. He helped produce a U.S. vaccine for the 1957 Asian flu pandemic, likely saving millions of lives.

\*\* Hilleman developed the U.S. chickenpox (varicella) vaccine based on the work of Japanese vaccinologist Michiaki Takahashi.

# Tip No. 6

## Set Expectations

- **Lead time is important — especially for complicated illustrations that can take weeks or months, going back and forth with the designer.**
- **Several rounds of minor changes are to be expected. Try to keep major revisions to a minimum, so you don't go over budget or miss a publication deadline.**

# Tip No. 7

Be involved —  
and be direct

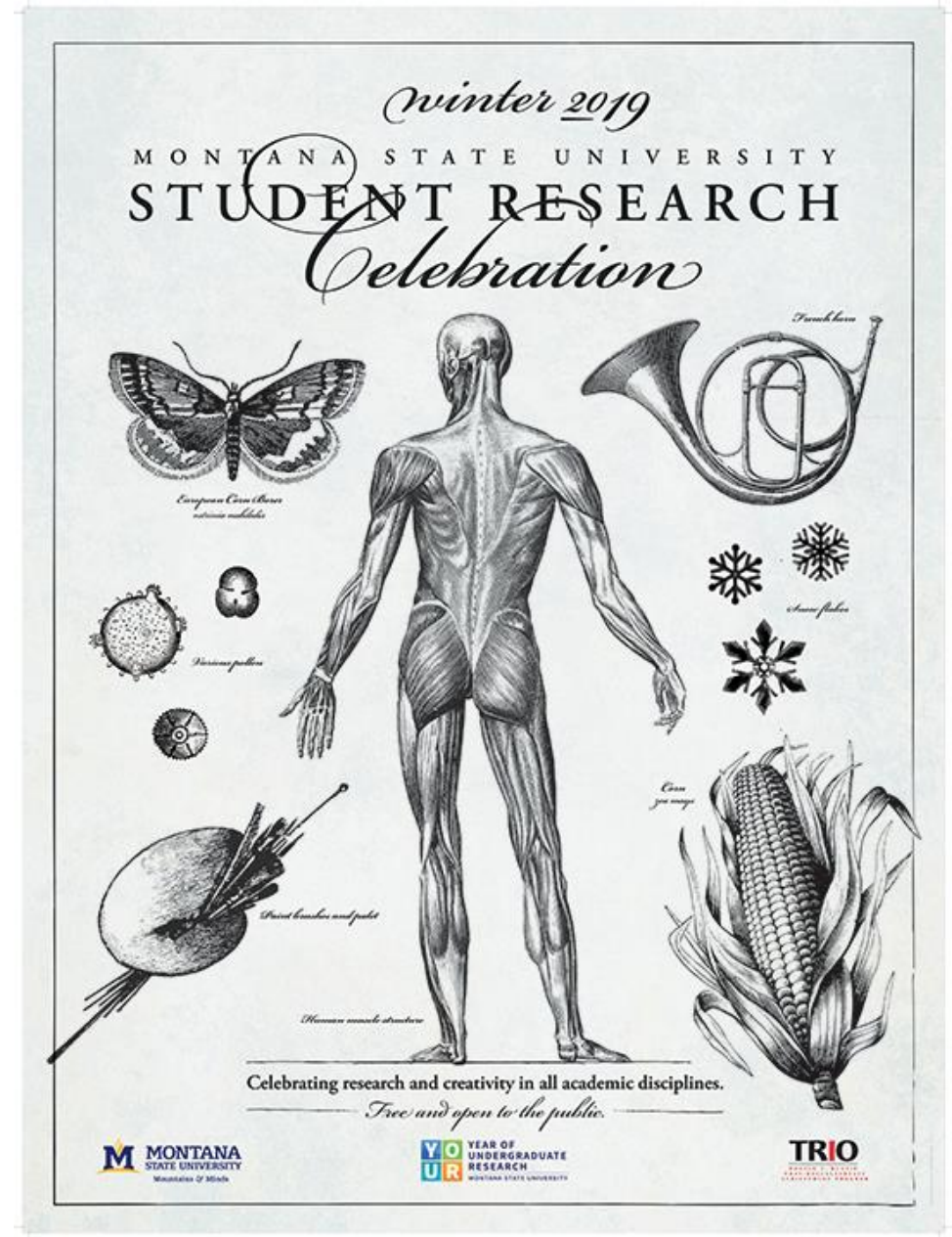
- **A successful project requires the active involvement of the researcher as well as the designer/illustrator.**
- **Be available for questions or to review draft versions. Be honest early on if you think the direction is off. Early course correction saves time and money.**

# More ways illustrations can be used for Impact



# Event posters

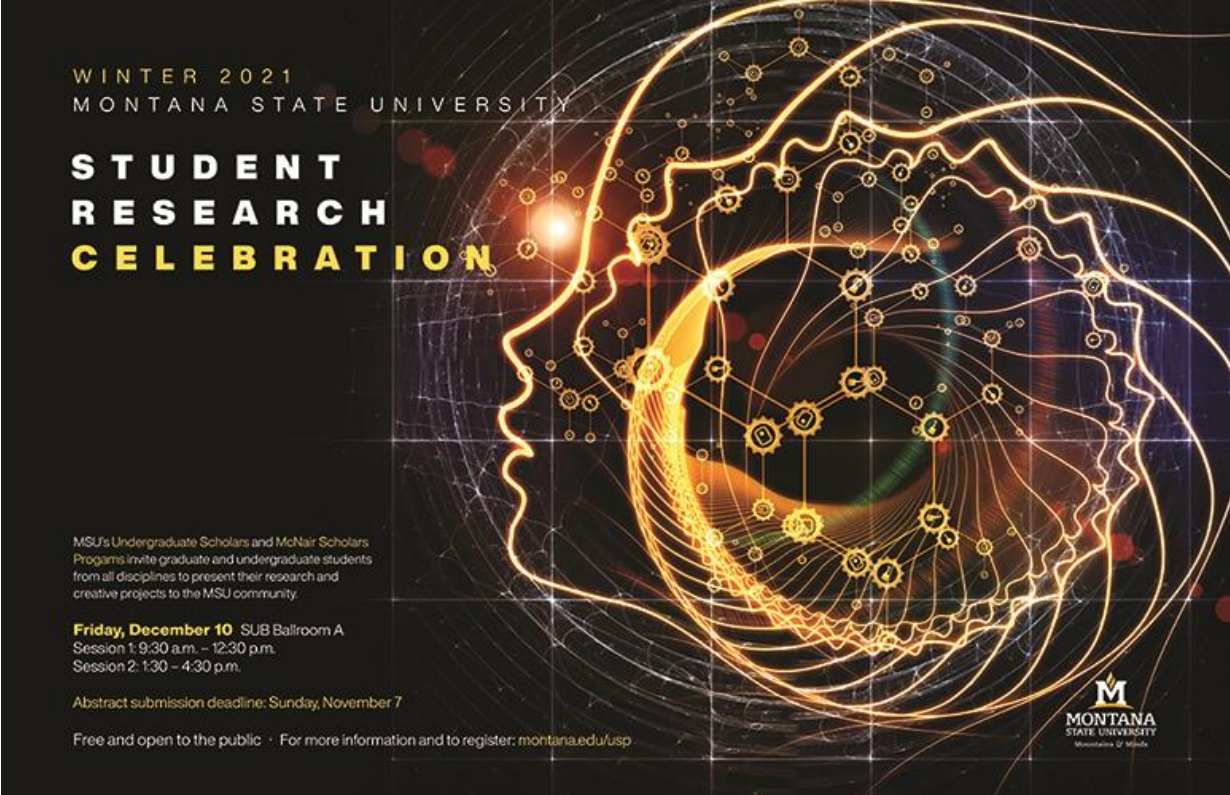
- Illustrations can be used to promote events. Well-executed graphics can bring attention to the academic excellence of a research unit.





# Illustrating abstract concepts

- Intriguing abstract designs can capture the essence of exploration and discovery integral to a research unit.



WINTER 2021  
MONTANA STATE UNIVERSITY


**STUDENT  
RESEARCH  
CELEBRATION**

MSU's Undergraduate Scholars and McNair Scholars Programs invite graduate and undergraduate students from all disciplines to present their research and creative projects to the MSU community.

**Friday, December 10** SUB Ballroom A  
Session 1: 9:30 a.m. – 12:30 p.m.  
Session 2: 1:30 – 4:30 p.m.

Abstract submission deadline: Sunday, November 7

Free and open to the public · For more information and to register: [montana.edu/usp](http://montana.edu/usp)

  
MONTANA  
STATE UNIVERSITY  
Ministers of Wildlife

# Illustrating abstract concepts


- For promotional pieces such as event posters, a good designer will create a design that will appeal to the audience. A student-targeted design can be more playful.



# Lecture posters


- Abstract conceptual images can communicate a highly complicated topic in a simple impactful way to promote an event or program.

**CAFÉ SCIENTIFIQUE**  
eat. drink. talk science.






**OCTOBER 14, 2020**  
6 PM • Online / Virtual  
Free and open to the public  
Details and login info at [www.inbre.montana.edu](http://www.inbre.montana.edu)

**A PACEMAKER FOR THE BRAIN:**  
How transformative technologies using surgically implanted devices are creating new hope for sufferers of severe depression.



**Dr. Helen Mayberg**  
Founding director of the Center for Advanced Circuit Therapeutics at the Mount Sinai School of Medicine  
Details at [www.inbre.montana.edu](http://www.inbre.montana.edu)




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Cohosts: Montana INBRE, the Center for Mental Health Research and Recovery and the Office of Research, Economic Development and Graduate Education

# Illustrating an announcement

- Bold graphics and colors can help an announcement of a new academic program stand out in a crowded hall.

**NEW 1-YEAR M.S. DEGREE** offered through the Jake Jabs College of Business & Entrepreneurship




## Master of Science in Innovation & Management


INNOVATION · ENTREPRENEURSHIP · LEADERSHIP · COLLABORATION · EXPERIENTIAL EDUCATION


**Want to start your own business?  
Do you want to be a more  
effective leader or innovator?**

Our MSIM program may be the perfect option for you to increase your skills and expand your career opportunities in just one year.



Learn more: [montana.edu/business/ms-innovation-management](https://montana.edu/business/ms-innovation-management)



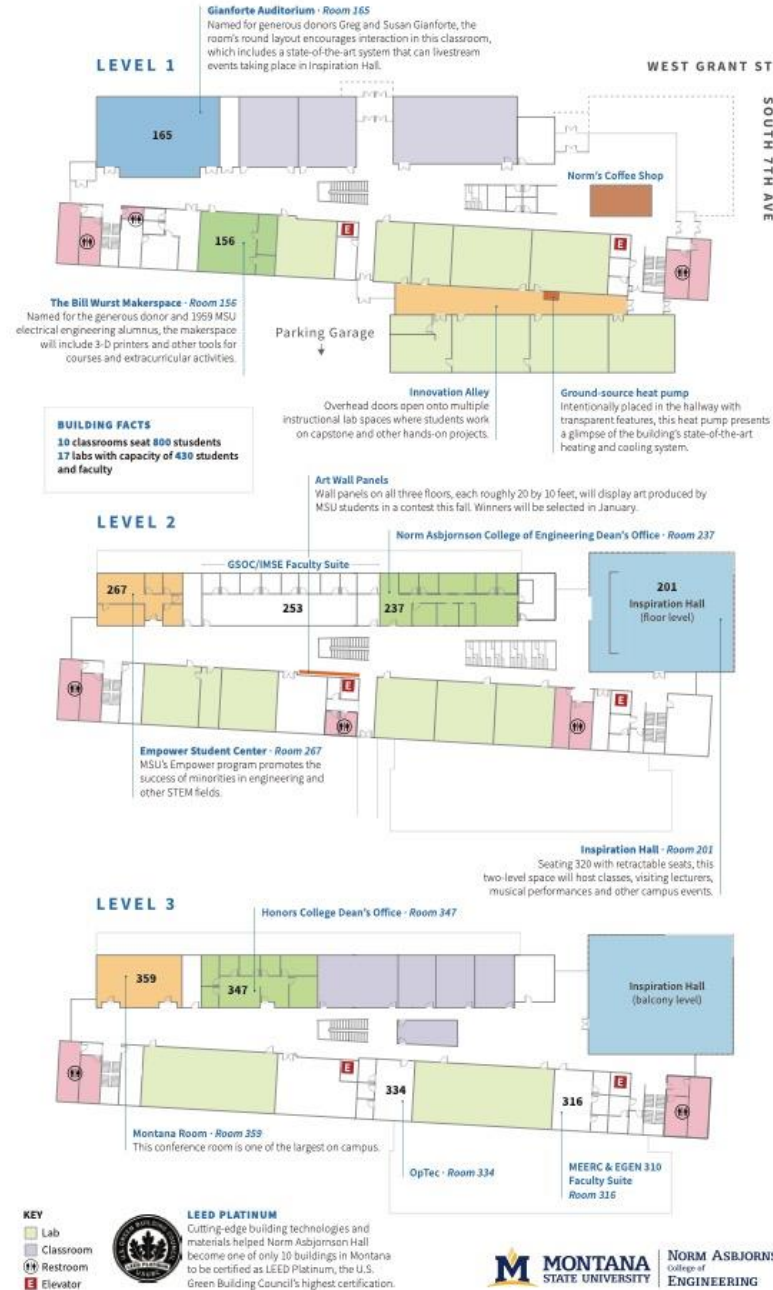
 **MONTANA**  
STATE UNIVERSITY

JAKE JABS  
College of  
BUSINESS &  
ENTREPRENEURSHIP

# Illustrating facilities

- Simplified floorplans of research and academic buildings can explain to the public how the structures enhance academic success.

## NORM ASBJORNSON HALL | SELF-GUIDED TOUR



# Illustrating facilities

- Combining illustrations and photography can bring a research space to life.

**SUBZERO RESEARCH LABORATORY**  
A world-class suite of lab facilities for research on cold regions and cold materials

- Snow microstructure and avalanche mechanics
- Antarctic ice and extreme biology
- Road de-icing and transportation infrastructure
- Available for a wide range of cold science

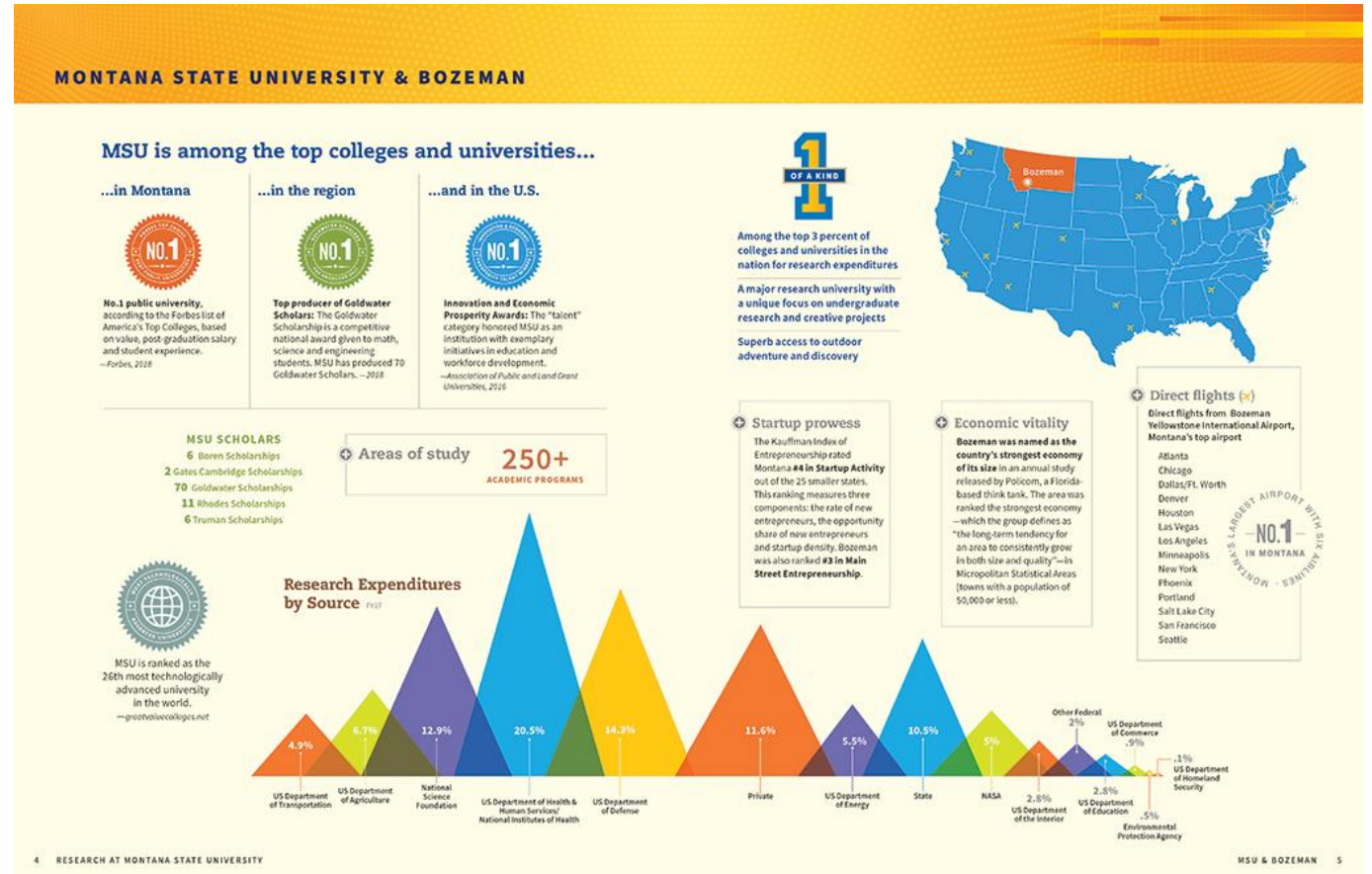
**Facilities and equipment**

- Environmental Chamber 1** Features solar simulation, humidity control and variable radiative temperature in floor and ceiling for a general purpose chamber supporting experiments in snow metamorphism, avalanche mechanics and more.
- Environmental Chamber 2** The coldest chamber at Subzero Lab, capable of sustaining temperatures as low as -60C. In place gloves allow researchers to handle equipment from outside of the chamber.
- Materials Preparation and Characterization Chamber** Contains a variety of equipment for preparing and analyzing ice and snow samples including a powerful microCT device.
- Cold Hydrodynamics Chamber** This chamber allows researchers to study systems with liquid water in a controlled cold environment that includes a programmable solar simulator in the ceiling and a snow-making device.
- Class 1000 Clean Room** The clean room provides a contaminant free space for processing pristine ice core samples and conducting microbial experiments.
- Cold Specimens Storage Room** Cold chamber with redundant refrigeration system provides assured long term storage for ice cores and other freeze samples.
- Structural Testing Chamber** Concrete floor with built-downs allow for experiments involving applied force to materials under variable cold conditions. Ideal for studying the durability and other characteristics of materials such as concrete in low temperatures.
- Cryostage Microscope Room** Non-cold room houses multiple specialized, powerful microscopes with localized temperature control.
- The Bridge** It's not all cold. Work stations, computers and windows into the chambers combine to make for an efficient workspace and staging area.

**About the Lab**  
The Subzero Research Laboratory is one of only a few specialized facilities in the world dedicated to snow science and other cold research. Occupying 2,700 square feet in MSU's Gableigh Hall, this state-of-the-art suite of laboratories includes eight cold rooms, three low-temperature biological incubators and a variety of unique tools and capabilities.  
Housed in the Department of Civil Engineering in MSU's Norm Robinson College of Engineering, the lab is rooted in MSU's long history of snow science. In the early 1970s, MSU engineers and earth scientists partnered to pioneer research on snow structure and avalanche safety. The Subzero lab was established in 2008 with \$2 million from the National Science Foundation, the Murdoch Charitable Trust and other donors.  
The Subzero lab continues to be instrumental in making discoveries about Antarctic microbes, snowpack metamorphosis and much more. Paired with Bozeman's cold winters and mountainous surroundings, the Subzero lab positions MSU to remain one of the world's leading institutions for cold research and education.

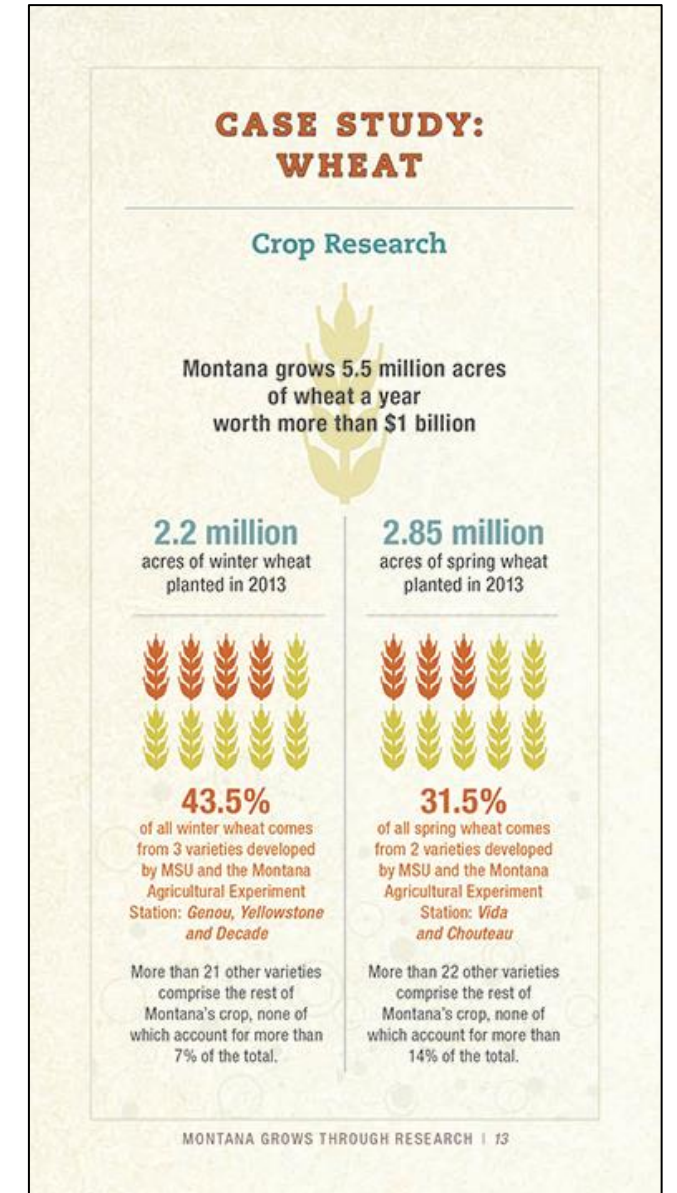
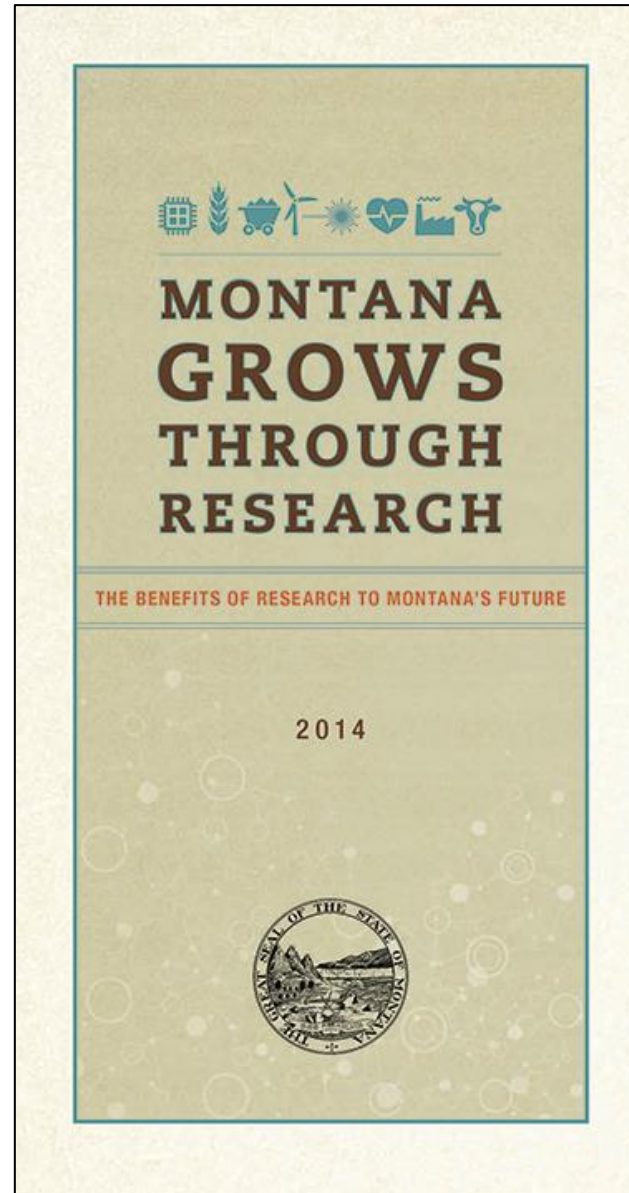
# Illustrating numbers

- An example of how a well-designed illustrated chart can showcase basic information in an appealing and informative manner.



# Illustrating facts

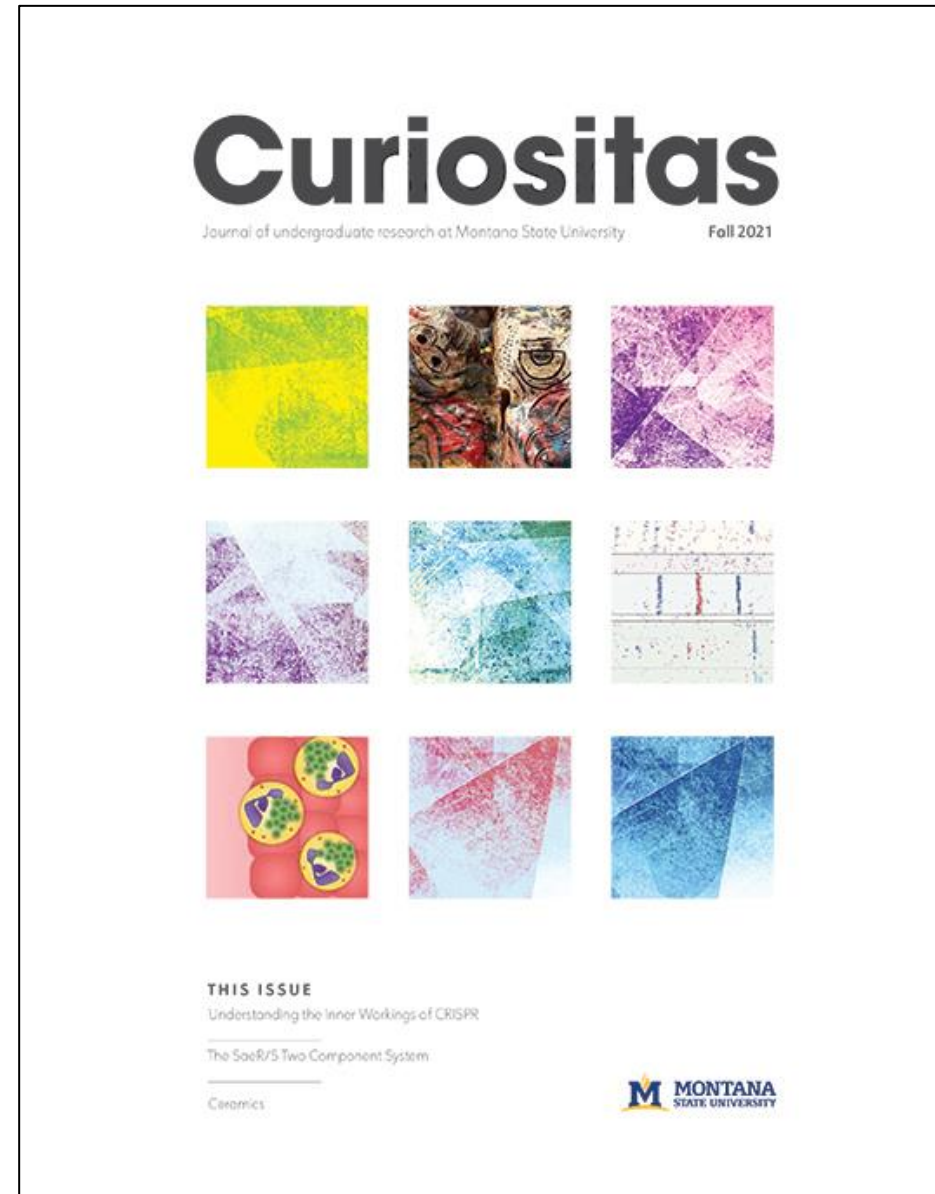
- A well-designed chart can present facts and figures in an engaging way and make information accessible.





# Publication Design + Illustration

- Graphic design can turn a journal into a professional-looking publication, while providing a structure that can be edited and reused.



The background is a solid blue color with various white line-art icons of office supplies scattered across it. These include a laptop, a pair of headphones, a spiral notebook, a magnifying glass, a pair of glasses, a pen, a pencil, a paperclip, a USB drive, a folder, a paper airplane, and a pair of paperclips. The text is centered on the page.

**We're here to help.**

**How to get started:**

**Call Ron at ext. 5128 or email: [rlambert@montana.edu](mailto:rlambert@montana.edu)**



# Thank You.

We look forward to working with you.

University Communications  
Creative Services

Contact Ron Lambert ext. 5128  
[rlambert@montana.edu](mailto:rlambert@montana.edu)