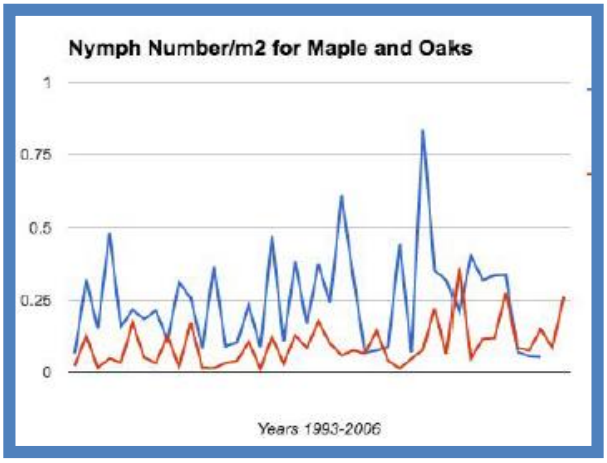
Cary Institute of Ecosystem Studies

Hudson DATA JAM competition

Making Data "Sing" Through Creative Expression

2022 Competition Guidebook



Support for the Hudson Data Jam Competition has been provided by Cary Institute of Ecosystem Studies, M&T Bank, Central Hudson, Adams Fairacre Farms, Price Chopper's Golub Foundation, & Chazen a LaBella Company.

Project Overview

Welcome to the Hudson Data Jam Competition!

The Hudson River Valley has been intensely studied by scientists for decades. Yet despite the tremendous discoveries made about the Hudson, many of the river's science stories are not well known by the people who call the Hudson Valley home. We believe that the skills of understanding, interpreting, and presenting data are essential in a world where our ability to collect data outpaces our ability to make it understandable for a public audience.

That's why we began the Hudson Data Jam Competition in 2014. We're looking for new, creative ways to share the science of the Hudson River and its watershed. This year, Data Jammers will immerse themselves in authentic, local datasets that have been collected by professional scientists, including Cary Institute ecologists. Whether teams create a graphic, song, video, sculpture, computer game, puppet show, or children's book, their imagination is the limit!

Projects will be judged using the criteria detailed on page 5. As you will see, the Hudson Data Jam Competition emphasizes creativity in presenting data. These are the very skills that will continue to be necessary as we strive to make local science understandable to the general public.

We can't wait to see what you create!

Sincerely,
The Cary Education Team

For more information:

CONTACT: caryeducation@caryinstitute.org
DATA JAM on the WEB: http://www.caryinstitute.org/students/hudson-data-jam-competition
FACEBOOK: @HudsonDataJam

Important Dates			
Early Registration: November 12	Final Registration + Consent Forms due: February 22	Projects Due Online: March 8	Virtual Awards Ceremony: March 31st

Exploring Data Through Art

(Adapted from Stephanie Bestelmeyer, Asombro Institute for Science Education)

Anyone who follows major league sports, and especially baseball, knows the incredible amount of data collected during each game. Craig Robinson is a self-proclaimed baseball fanatic who has turned some of these data into fun graphics in his book Flip Flop Fly Ball: An Infographic Baseball Adventure and on his website. The sample infographic above shows how Mr. Robinson took data available to everyone, but found a way to present it in an innovative way. "Infographics" like those created by Mr. Robinson are becoming increasingly popular.

Keep in mind that graphical presentations are not the only option for presenting science to non-scientists. For example, students attaining a PhD in science can create a dance explaining their research and enter it in the Dance Your PhD Contest (http://gonzolabs.org/dance/). In last year's Hudson Data Jam, students created songs, videos, murals, computer games and more.

Now it's your turn! How can you present ecological data from the Hudson Valley to nonscientists? Teams can use any artistic media they like, just as long as their creative product illustrates interesting trends or comparisons in the data.

Competition Essentials

New! *Junior Data Jam* for Grades 4-5

In 2020, we added a new category: *Family* Data Jam, which has recently been renamed as the Junior Data Jam. In 2020 to help accommodate distance-learning needs during COVID-19-related school closures, we offered a Hudson Data Jam option specifically for families. Siblings of different ages could work together with their parents or guardians on a condensed version of Data Jam. Since we had so many elementary-aged students participate in 2021, we decided to officially create an elementary school category to replace Family Data Jam: *Junior* Data Jam!

Submissions for Junior Data Jam require only a single graph, a brief interpretation of observed trends, and a creative project with a short explanation. Please refer to the Junior Data Jam Rubric on the "Important Documents" webpage for further details. Project groups can be as small as one child up to an entire class, just as for the middle/high school-level Hudson Data Jam.

Teams

Students can work on projects on their own or in groups as small as two students or as large as a whole class. Prizes are awarded for a project, so winnings must be split between team members.

Registration

Registration for the Hudson Data Jam Competition is required two weeks before project submissions are due. All registrations are due by February 22, 2022. Registration is non-binding, but is extremely useful for us so we can estimate the number of judges we will need.

To register:

a. Fill out the registration form on the Hudson Data Jam registration website. Only one registration form is necessary for each adviser. Junior Data Jam teams will register using the same form.
b. You will receive a confirmation by email. If you have not received a confirmation within 24 hours of submitting your registration, please email us at caryeducation@caryinstitute.org.
c. All students participating in the competition must complete the student consent form with their parent/guardian. *Team projects with missing consent forms cannot be judged*.

Which data should we use?

We provide dozens of local datasets collected by Cary Institute and other local organizations like Scenic Hudson and Riverkeeper. We also highly recommend using the data from the Day in the Life of the Hudson, especially if you've participated in Day in the Life.

Our datasets are available as Google Sheets through the Datasets page. Each dataset includes background information. Here, you will find information on the dataset, including who collected the data, and when and how the data were collected. Most of the datasets also link to a PDF with additional background information.

If you want a fun, easy way to try graphing, you might want to try out our interactive drag-and-drop Hudson Data portal hosted on Tuva Labs Inc.:
https://hudsonvalleydata.tuvalabs.com/

If there is a local dataset you'd like to use that we don't have on our page yet please let us know, as we are always trying to make our collection more engaging and classroom-friendly.

Parts of the Project

Each submission to the Hudson Data Jam Competition will include two parts – a scientific report and an interpretive creative component.

- Report. Each team must submit a report that summarizes their project for judges and others to review. The report is worth 55% of the total project score. For Junior Data Jam, participants will submit a brief paragraph interpreting observed data trends, plus a short explanation of their creative component, in lieu of a full report. For Junior Data Jam, the condensed report is worth 40% of the total project score.

- Interpretive Creative Component. Communicate your findings! The creative piece should clearly explain the data to someone without the scientific knowledge to interpret datasets or graphs on their own. Skits, videos, songs, puppet shows, poems, photographs, exhibits, sculptures, interactive displays and more are encouraged. *The projects will be judged online,* so live performances must be submitted as electronic audio or a YouTube video. Recordings must be 5 minutes or less. The creative project is worth 45% of the total project score (60% for Junior Data Jam).

Data Jam Report

The Data Jam report should be completed using the document titled: *Hudson_DJ_Report_Form* found in the "Important Documents" tab of the website. Students should complete all components of the document, as outlined in the table below. Students are required to include information and citations from two sources beyond the Metadata file (not required for Junior Data Jam). These sources could come from scientific publications, newspaper articles or reputable online sources. *Note: Components required for Junior Data Jam are designated with an asterisk.*

Report Components (these are the same as the Rubric, but this chart gives more detail)	
1. Title/Organization*	Include the title, name(s), grade(s), and school name(s) of all students who participated in the project. The report should be typed in a readable font, well organized, and free of spelling and grammatical errors.
2. Introduction (1 paragraph)	Start your report by describing your topic to someone unfamiliar with it. Include the scientific question you investigated and a brief claim about what the dataset showed. Give an overview of the project but do not go into specific detail in your introduction.
3. Dataset Description (1 paragraph)	Introduce the experiment to the reader. Explain what the variables are. Include as much information as you can about who collected the data, how they collected the data, where they collected the data, when they collected the data, why they collected the data, and the source of the data (ex: Vassar College, NOAA, Snapshot Day, Cary Institute), and any other relevant information. *Explain why a scientist might study these variables.*
4. Data Representations (Graphs)*	Your team will need to *create* at least one graph or chart of the data. Hand-drawn graphs are acceptable if they are neat and legible. Remember to label your axes and include a graph title. If you selected a large dataset, your representation only needs to include the variables that are relevant to your investigation.

5. Data Trends or Comparisons* (1-2 paragraphs; 2-3 sentences for Junior Data Jam)	Describe the trend(s) or comparison(s) in the dataset(s) you used for your project. In other words, *What does the graph look like?* Make sure to use basic descriptive statistics (ex: average, range, standard deviation). Describe and address variability if applicable. Examples: ➢ The average annual blue crab population increased over time from 158 to 2,703 crabs/m2. ➢ Despite the overall increase in pearly mussels from 1995-2010, the mussel population sharply dropped in 2003. ➢ The precipitation in Poughkeepsie was variable from 1997-2012. ➢ Fish populations were higher in Beacon than at Norrie Point in 2008. ➢ There appeared to be no clear correlation between phosphorous and salinity levels from 1990-2000. If you used two datasets for a comparison, how were the data similar? How were they different?
6. Data Interpretation (Explanation)* (1-3 paragraphs, 1-3 sentences for Junior Data Jam)	Use reasoning and what you know about the topic to explain the trend(s) or comparison(s) you discovered. In other words: *Why do you think the graph looks the way it does? Why do you think your trend happened?* Why is your finding interesting and important? Are your results expected or surprising? What environmental processes might be causing what you discovered? Make sure to support your explanation with evidence and be consistent with current scientific ideas.
7. New Questions and Hypotheses (1 paragraph)	Remember -- for your creative piece, your job is just to describe the data. However, when you look at data closely, you will inevitably start asking more questions that you can't answer without more research, such as 'Why did the numbers go down in 2003?' Or, 'What's happening in Beacon to make the site so different from others?' The report is your place to ask 'Why?' and 'What's up with that?' Then brainstorm some hypotheses. Hypotheses are the explanations your brain comes up with when you ask that

	'Why?' question. You start thinking 'Maybe...' That 'maybe' is your hypothesis. Be sure to give at least two new ideas (hypotheses and/or questions) about future scientific research that could be done on this topic.
8. Written Explanation of Creative Project* (2-5 sentences)	Explain why you chose your creative method and what message you hope audience members will take away from your project. For example, "We believe the best way to help a general audience relate to and understand our findings is to create a fun, engaging, educational video. We hope that people who watch our video will realize that salt levels in the Hudson River strongly affect where different fish species can live." If you create an abstract visual art piece like a sculpture you may need a longer description here.
9. Brief Reflection on Data Jam (2-5 sentences)	Let us know what you thought about your Data Jam experience. You might consider the following questions: Was Data Jam challenging or easy? What was the hardest part? What was the most fun part? What did you learn from Data Jam? How would you change Data Jam if you had the chance? Do you think there is a way to share your project with an audience outside of Data Jam?
10. Reference List*	Include at least two references from outside of the Metadata document (e.g., data source, graph or table source, and anything used to explain the data interpretation). You can use any standard citation form (APA, MLA, etc.) *For Junior Data Jam, participants only need to cite the source of their chosen data set (i.e., HRECOS).*
11. Link to Creative Project (if applicable)*	If you upload your creative project to YouTube, make sure you include a link for judges!

Submitting Your Project

All projects will be submitted on Google Drive. Advisers will upload projects to the Drive folder and fill out a sheet with individual and group information. Each school will have their own folder, and a designated folder will be established for Junior Data Jam submissions. All project materials must be submitted electronically by March 8. Visual and written files must be uploaded as PDFs and videos must be uploaded onto YouTube. All video links must be included in the report.

How Projects will be Judged

Judging will take place online between March 11 and March 25.

A panel of judges, including scientists, artists, and teachers will evaluate each project based on the following criteria:

- Scientific Merit (Report) – 40 points (23 points for Junior Data Jam)
- Creativity in Communicating Data – 32 points

Please refer to the judging rubrics (available in the Important Documents page) for details on how projects will be scored.

Announcing Winners

We will announce the winning teams at the Hudson Data Jam Awards Ceremony & Celebration virtually on Thursday, March 31st. Students do not need to be present at the Ceremony to win. We will also post the winners on the Hudson Data Jam Facebook page shortly after the competition.

Prizes

Prizes will be awarded separately for elementary, middle, and high school students.

Hudson Data Jam: Middle school and high school age groups each will include…

- Best overall project ($400)
- Level 1 winner ($200)
- Level 2 winner ($200)
- Level 3 winner ($200)

Junior Data Jam (see description below): Elementary school age group will include…

- Best overall project ($200)
- Level 1 winner ($100)
- Level 2 winner ($100)
- Level 3 winner ($100)

Honorable Mentions and various other special prizes. Watch our Hudson Data Jam Facebook page for more special award announcements throughout the contest period.

All Data Jam participants are invited and encouraged to share their project at the Virtual Data Jam Awards Ceremony & Celebration on Thursday, March 31st. Students do not have to attend this event to win the prizes, but attendance is encouraged!

Helpful Resources:

- The Hudson Data Jam Facebook page frequently gives competition updates and posts exemplary creative data analysis projects: https://www.facebook.com/HudsonDataJam/ We have also created a Data Jam Network Facebook group for educators and students to connect and share strategies for Data Jamming. We will also be posting opportunities for student and teacher webinars on this group page.
- Cary Institute Teaching website has data-rich ecology lessons that can help develop your students' content knowledge while they work on their projects: https://www.caryinstitute.org/eco-inquiry/teaching-materials
- Hudson Data Jam YouTube channel includes the 2014-2018 winners and a selection of other strong projects: http://bit.ly/2gI3hUy.

Rules & Regulations

Eligibility

The Hudson Data Jam Competition is open to all current middle and high school students (grades 6-12). The Junior Data Jam is open to elementary school students (grades 4-5).

Previous Entrants

Previous entrants are encouraged to compete again in the Hudson Data Jam Competition, as long as they meet the above student eligibility requirements. Students are welcome to use the same dataset(s) they used in previous years; however, they must create a new project for the competition. Previously entered projects are ineligible.

Team Advisors

Participation in the Hudson Data Jam Competition and Junior Data Jam requires coordination by a responsible adult who agrees to facilitate and validate student participation. Educators (grades 4-12) of *all* subject areas are encouraged to get their students involved. Adult advisors can be teachers, parents, guardians, or other mentors.

Registration Period

Registration for the Hudson Data Jam Competition is required, and due no later than February 22, 2022.

Project Entry Period

Project entries for the Hudson Data Jam Competition are due online by 11:59 PM EST on March 8, 2022.

Student Privacy

Student privacy is important to us. All adult team advisors will receive parental/guardian consent forms for permission of student participation and the release of limited personally identifiable student information (i.e., student name, grade level and gender, school name, hometown, photographs, video or audio files of the student, and project entry). These consent forms should be completed and signed for each participating student and returned to the student's team advisor.

Team advisors are asked to handle the distribution and collection of parental/guardian consent forms for their student participants. To ensure receipt of materials, please submit all team members' parental/guardian consent forms together. Completed forms must be received by Cary Institute no later than *February 22, 2022*. These forms may be scanned, photographed, or signed electronically and the advisor will save these to their "Consent Forms" folder in Google Drive.

Publicity & Rights

By entering a project into the Hudson Data Jam Competition, the project creator(s), parent(s)/guardian(s), and the team advisor grant to the Cary Institute of Ecosystem Studies world-wide, royalty-free, non-exclusive license to use all materials submitted by the student teams into the Hudson Data Jam Competition for publicity purposes.

The Cary Institute of Ecosystem Studies may post information about the Hudson Data Jam Competition in the Cary newsletter, on the Cary website, in the Cary annual report, in the local newspapers, and on the Cary and Hudson Data Jam Competition Facebook pages. Project entries may be published without compensation through any or all of the above sources in whole or in part. Submitting a project entry does not guarantee it will be publicized. We will not publicize any student information without prior parental/guardian consent.

Plagiarism

Project entries cannot include plagiarized work. Plagiarism is considered the deliberate copying of someone else's thoughts, ideas, expressions, words, artistic expressions, or scientific work without formally acknowledging its source. Plagiarism includes project entries that are comprised substantially of someone else's work, copying words or ideas from someone else without giving credit, the failure to put quotation marks around unmodified content that was copied from an outside source, and the use of photos, graphs, charts, or other images without acknowledging their source. Project entries that include plagiarized content will be eliminated from the competition. We recommend teams working together to help each other avoid plagiarism. The best way to ensure your work is original is to be creative!

This competition requires students to use information that is not their own, and thus merits increased diligence to proper source acknowledgement. Students will use data (scientific work) collected by a group of researchers. Students are also welcome to use any of the images provided on the "Datasets" page in their project entries. In order to avoid plagiarism, students should be sure to properly cite all sources of information for content that isn't their own original work. This includes noting the data source and the sources of any images copied or modified.

Citations

All project entries must have a complete reference list of all resources used. Any standard citation form is permissible (APA, MLA, etc.), but the same form should be used for all citations for a given project entry.

Additional Disclaimers

1. It is the responsibility of each participant and team advisor to obtain and read these rules and regulations for the Hudson Data Jam Competition.
2. The Cary Institute of Ecosystem Studies will not be responsible for any claims, costs, liabilities, damages, expenses, or losses arising from 1) The Cary Institute of Ecosystem Studies' use of project entries, 2) the participants' involvement in the competition, 3) technical failures of any kind, including, but not limited to, computer viruses or equipment malfunctions, 4) travel to and from the teacher workshops, Data Jam Expo, and other related activities, 5) the use of prizes, and 6) any events outside the Cary Institute of Ecosystems Studies' reasonable control.
3. The Cary Institute of Ecosystem Studies reserves the right to reject any project entry for any reason and at any time, at its own discretion.
4. The Cary Institute of Ecosystem Studies may refuse to award a prize if a winning participant does not follow proper registration and project entry procedures, or these rules and regulations.
5. The Cary Institute of Ecosystem Studies is not responsible for any technical failures that may affect participation in the Hudson Data Jam Competition.

Frequently Asked Questions

General

Are Cary Institute educators available to help?

Yes. Cary Institute educators are delighted to answer any questions you have via e-mail or phone, including questions about the data. In many cases we are able to send specific questions about the data directly to the researchers who collected the data.

Can I register and participate independently of my teacher or class?
Yes. Any elementary (grades 4-5), middle, or high school student or student team is eligible to participate in the Hudson Data Jam Competition. You do not have to register through your teacher, but *do* need to have an adult represent your team as an advisor. This can be a parent or another trusted adult.

What do the different dataset levels mean?
The simple answer is this:

Level 1= Easy,
Level 2= Moderate
Level 3=Challenging

Dataset levels are derived by looking at the number of variables in the dataset and by the sheer amount of data collected. Depending on the level of adviser support and student experience, elementary-level students will be successful with a Level 1 dataset. Most middle schoolers will be successful with a Level 1 or 2 dataset, and the appropriate level for your high schoolers depends on their data experience and determination. Drop us a line if you need help selecting an appropriate dataset for your students.

Registration/Forms

I need to submit my parental consent forms. How can I send it in?
Give your signed consent form to your adviser, and they will save all consent forms to their Google Drive folder.

Submission

How do I submit projects?
Advisers upload projects to the "Hudson Data Jam 2022 Submissions" Google Drive folder. A separate folder will be designated for Junior Data Jam submissions. All written or visual files must be submitted as a PDF, and all videos must be submitted as a YouTube link. See the Project Submissions page for specific instructions.

Why do projects need to be submitted online?
All projects must be submitted online because judging for merit prizes takes place online. This means that all of the files you submit online must clearly show your project in its

entirety because that is how the judges will see it. If you create a 3-D object, send us lots of photos so we can see it from all angles (or even submit a video with it!).

How should participants present their creative data display digitally for online submission?
It's up to them to determine the best way to view their project online. Most participants choose to either photograph or video record their work. Participants usually take photographs of their comic strips, dioramas, sculptures, and paintings, or record a YouTube video with a quick narration describing their project. Participants also record YouTube videos of their choreographed dances, puppet shows, movies, original songs, and stop-motion videos.

Remember, the judges will be determining prize winners based on what you upload online, so be sure that they include a narrative description of pieces as needed. Take a look at our 2014-2021 Winning Projects Gallery for ideas about how to display projects digitally.

Are students required to attend the Data Jam Awards Ceremony & Celebration?
No. Students are still eligible to receive merit prizes regardless of their attendance at the Virtual Awards Ceremony. We will announce all prizewinners at the Ceremony and on the Hudson Data Jam Facebook page shortly after the event.

Workshops

When is the next Data Jam workshop for teachers?
Visit our "Workshops" page to check our past webinars, new postings for future workshops, or email your name to caryeducation@caryinstitute.org to sign up to receive email updates through our Ecosystem Teaching Newsletter. Workshops and webinars are optional, but highly recommended for new Data Jam teachers. Additionally, we encourage you to join the Data Jam Network Facebook group, where announcements for webinar opportunities will be posted.

Contact

Please contact the Cary Institute Education Office if you have any questions about the project or competition at caryeducation@caryinstitute.org

BEST OF LUCK AND HAVE FUN!!