

# DATA story

The Process Book

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DMGT 706

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Prof. John Storey

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# INTRODUCTION TO data visualization

Data Visualization, the second half of the Idea Visualization course was initiated with the assignment of groups. My given teammates were Xiuyuan Lu and Eduardo Dodge. As a group we were expected to come up with a topic of shared interest and do research on that topic, including gathering data. Professor Storey asked us to interpret that data in such a way that we tell a compelling story with it. We were to come up with three deliverables by the end of the course which included a presentation, posters and a video. These assignments were to yield multiple points of data which were delivered using the correct visualizations for the information being presented. It was expected that the teams would create a cohesive body of work that did not come across as disjointed or patch-worked together. Lu, Eduardo and I communicated through email, texting and Zoom to collaborate on the project. We had a shared Miro board to view everyone's work and progress. Our finalized deliverables were created on Canva, although everything was shared regularly on Miro, as access to Canva posed some difficulties.

## TEXTS

- Data Viz & Storytelling by Jose Berengueres
- DataStory: Explain Data and Inspire Action Through Story by Nancy Duarte
- Visual Thinking for Design by Colin Ware
- Presentation Zen Design by Garr Reynolds

## MATERIALS

- Miro board
- Canva
- Research Resources
- Email, Zoom & texting app



(Canva.com, 2023)

# DATA STORY

## research & topic selection

Picking topics of value and of interest are important to deliver a passionate and ardent message. It is also key to holding the attention of the team throughout a long process. Getting to know the interests and passions of teammates in such little time can be a difficult task. The group did its best to discuss its individual passions, but ultimately thought it best for each member to come up with his or her own idea. Upon discussion we decided to go with accessibility as it was inclusive of two of the three ideas. In doing some research, one of the teammates stumble upon some very exciting findings. There was concern that the time invested in this new subject might pigeon-hole the team into a subject that might not provide the group with the necessary story nor the quantity of data points needed to tell a convincing data story. Thankfully this was not the case, and with additional research and some brainstorming sessions, the expansion of the idea provided the necessary fodder for building a rich and powerful story.

### assignment

- 1a. Pick three topics that interest you and your teammates and that as a team, you will be able to find enough data on, with which to compose a compelling story.
- 1b. Select one topic from the three that the team agrees will provide a thoughtful narrative with enough supporting and convincing data.
2. Pitch a research proposal that explains the data that will need to be further explored along with the information already extracted.



1a.

<b>EV charging accessibility</b>	<b>Hospital Accessibility</b>	<b>Gender equity in AI</b>
Call ADA about accessibility data	Call Local Hospitals	Find data on Jen Library
Call PennDOT and other states for info	Call ADA about accessibility data	
Find data on Jen Library	Find data on Jen Library	

1b.

Frame 1

<https://www.aljazeera.com/features/2022/3/30/new-york-what-is-the-megacity-like-for-people-with-disabilities>

@inaccessible\_nyc

Exploring the challenges of navigating New York City with a disability. From inaccessible public transit to limited accessibility in public spaces, the city is a constant struggle for many. #NewYorkCity #Accessibility #Disability

1 in 5 NYC res. have a disability

When Mr. Remigio...  
Long recently became mobility-impaired at the age of 64 and must pay the expense of an Uber taxi to transport me to a subway station with an elevator and then home from that station. Although I qualify for, and have received, a reduced fare Metro Card, the extra \$18-22 per day defeats the purpose of such a fare reduction. For disabled riders with lesser financial resources, the subway system is certainly a form of discrimination.

New York City Is Still a Disaster for the Disabled  
Old infrastructure and grudging compliance add up to only moderate progress toward accessibility.

Inaccessible Cities - nyc  
Find out how challenging it is to navigate New York City when you have a disability.

2.

<https://www.911.gov/issues/911-stats-and-data/>

PSAPs: Public Safety Answering Points

2020: New York

911 Calls and Equipment Positions

911 Calls by State

911 Calls by State

National 911 Annual Report 2021 Data

NYCOTI  
Office of Technology & Innovation

2022 Annual Report on Implementation of Next Generation 9-1-1 in NYC

Pursuant to Local Law 78 of 2016

What's in this Dataset?

Rows: 8,412 Columns: 6 Each row is a Response Time Indicator by Month and Borough

Columns in this Dataset

Column Name	Description	Type
Month Name	The week start date of the incident category	Plain Text
Agency	The incident agency	Plain Text

2.

911 calls by month

resolution

50ks

5ks

waves of emergencies

waves of emergencies

Filters (1)

Filters (1)

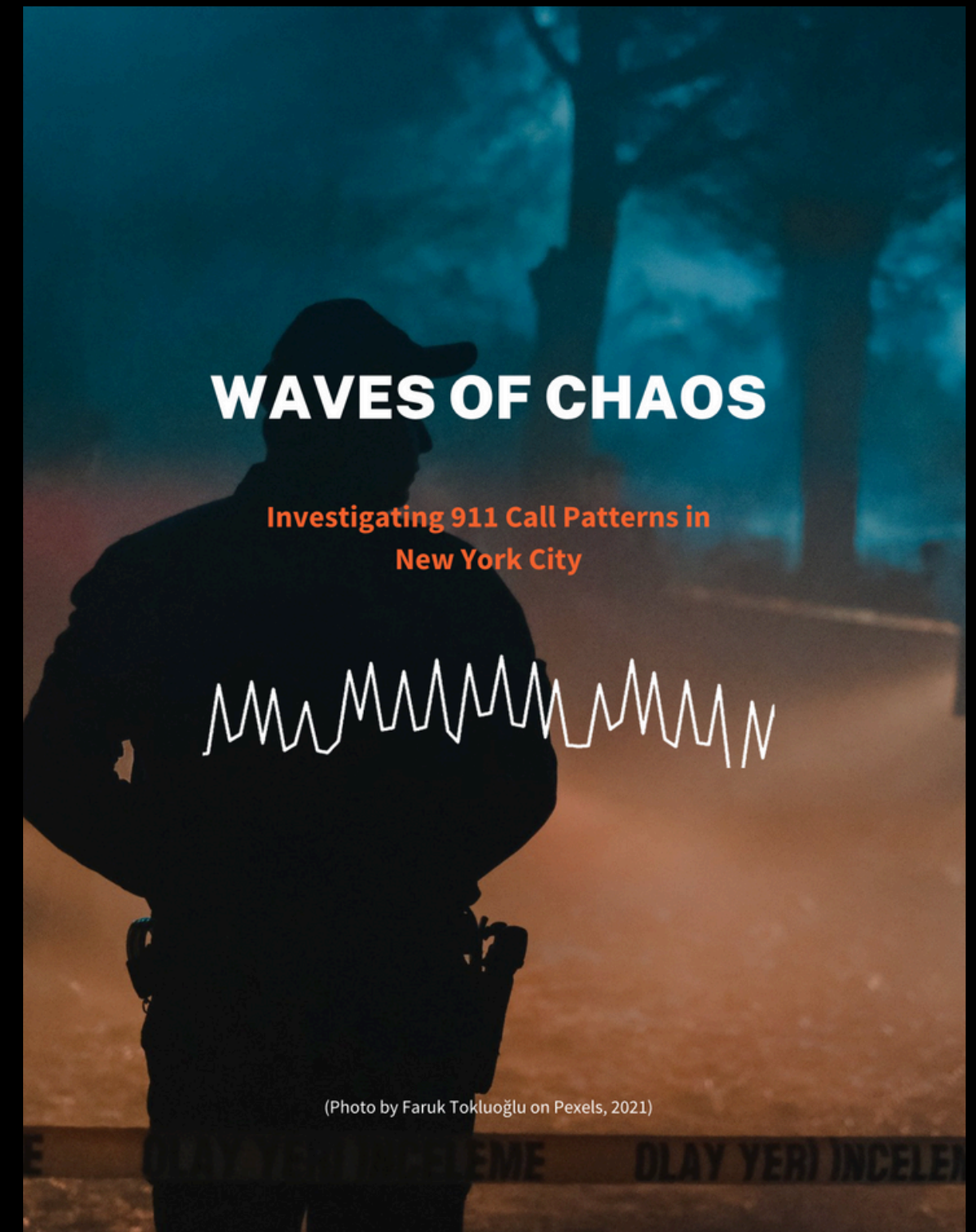
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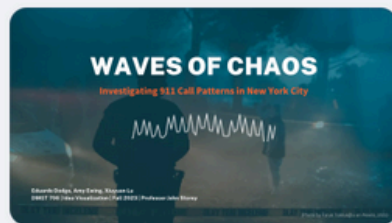
## presentation

Presentation skills are an expected quality one must have in design careers, although good presentation skills are still somewhat rare. SCAD is determined to create the solution for the limited number of good presenters in the design world. Through the colleges SCADamp communications certificate and numerous workshops, as well as making it a pillar of its courses like this one, a number of quality presenters will be disseminated through the design world. Following a number of design guidelines in resources like Presentation Design Zen composing efficient and remarkable slides was more manageable. Time management seemed to be in discord among the teammates and some late nights were to be had sewing together recordings for the talk track.

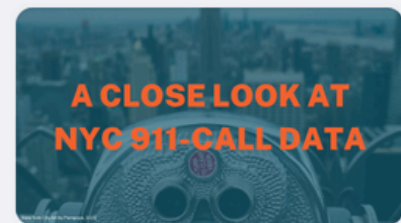
### assignment

Create a 10-minute presentation of 20-25 slides (not including builds) that tells a compelling visual data story about that topic. Charts must be clear and relevant to the story as well as redesigned to follow the aesthetics of the presentation schematic. All sources must be cited properly in APA 7.0 format. Include a rehearsed talk track that renders the story but does not explicitly describes each chart or readstext from the slide deck.





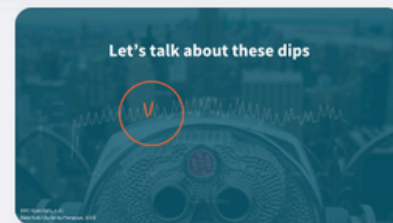
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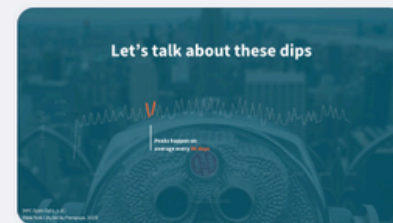
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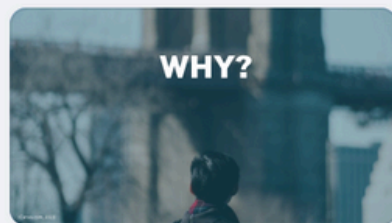
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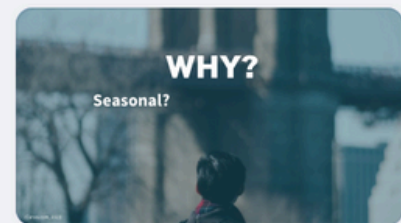
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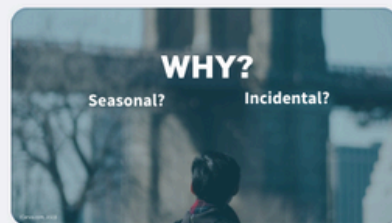
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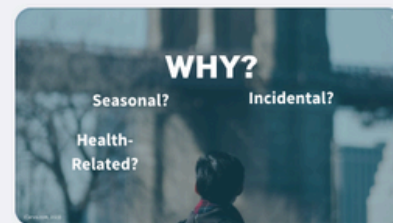
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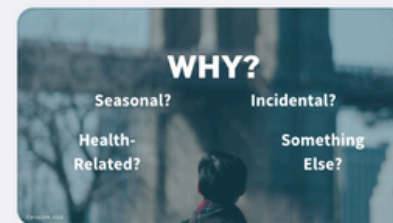
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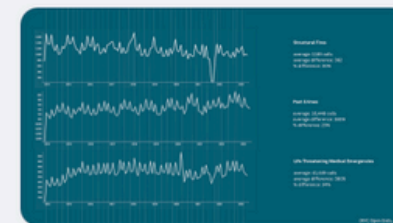
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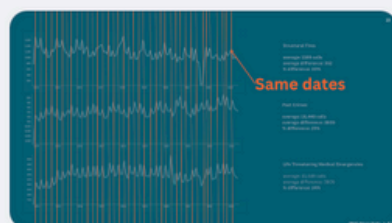
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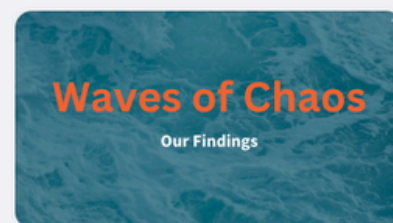
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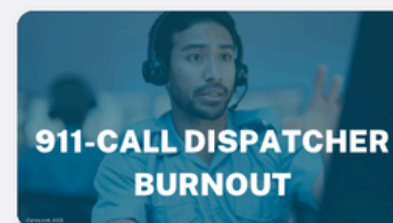
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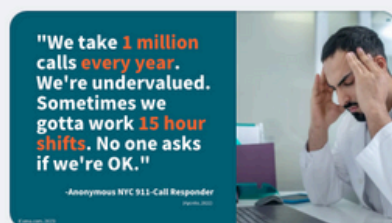
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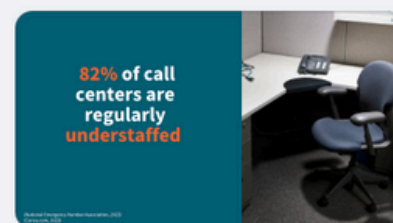
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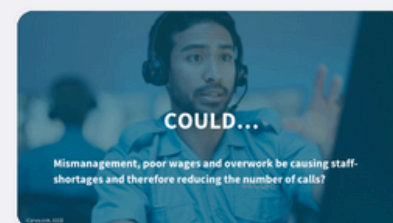
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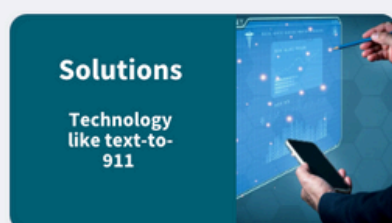
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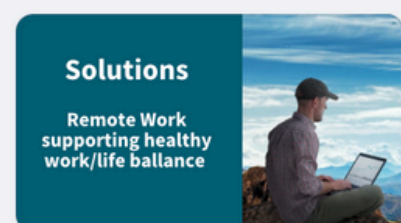
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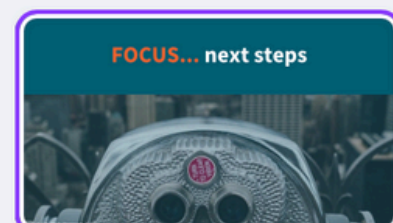
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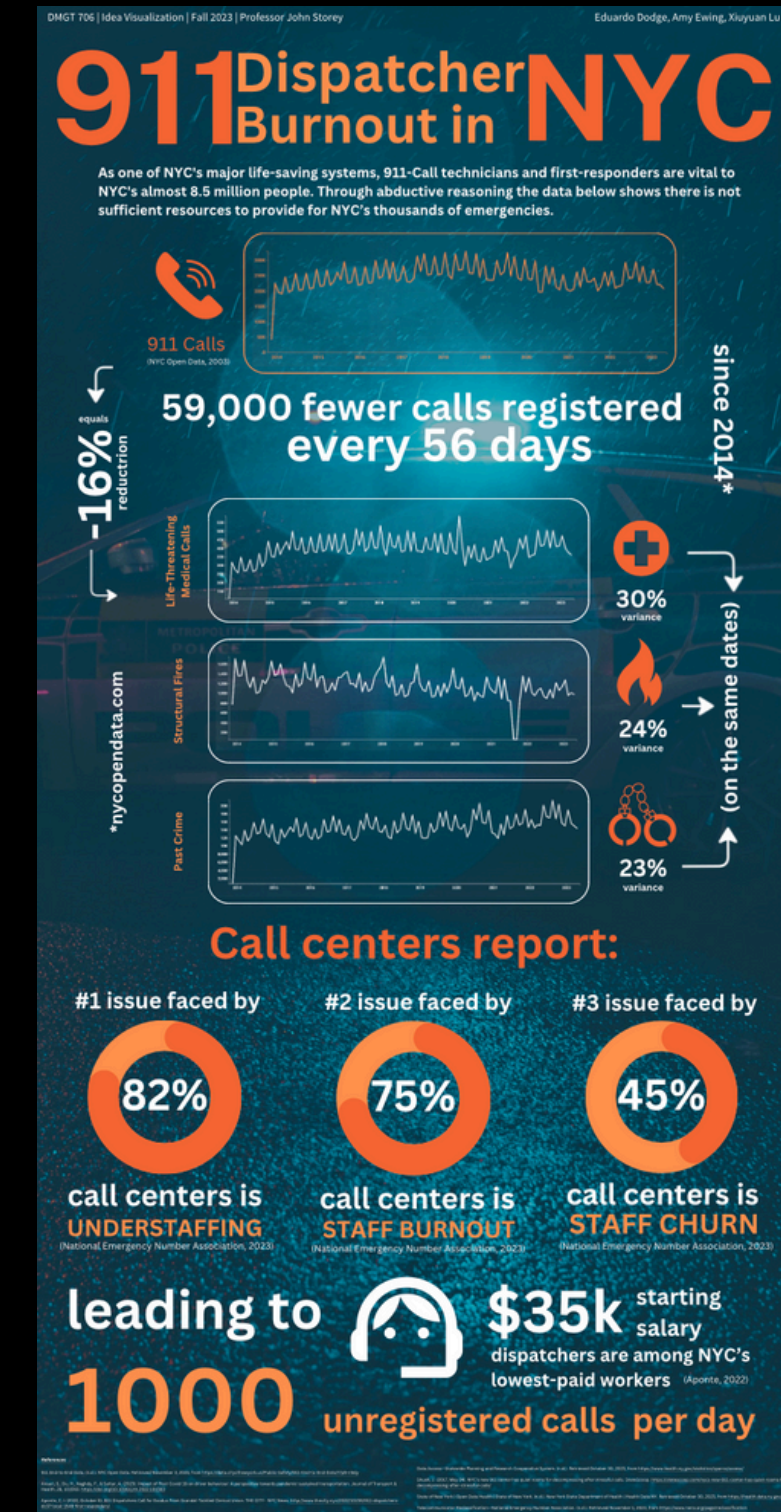
# DATA STORY

## posters

Posters are an exceptional means of communicating points needed to be remembered and reiterated in an office setting. Telling a data story in poster format rendered previously-acquired skills necessary again. Revisiting the lesson on single-frame narratives from the first half of the course helped to clearly define a directional path for the viewer. It helped to substantiate the focal points in addition to emphasizing hierarchy. A number of versions were initially made and a few had to be scrapped as they were almost too similar to presentation. It was agreed upon that new photos would add some welcomed visual interest to the established design theme.

### assignment

Create two posters based on the previous Data Story used for the prior presentation assignment. One will be in a digital format and measure 15" x 30" and the other will be in a print format, measuring 24.5" x 49". Maintain consistency in the style, design and colors used. Include necessary text so that the viewer understands what the data implies and the conclusions derived from the data.





# \*911 Dispatcher Burnout in NYC

There are 59,000 fewer calls registered



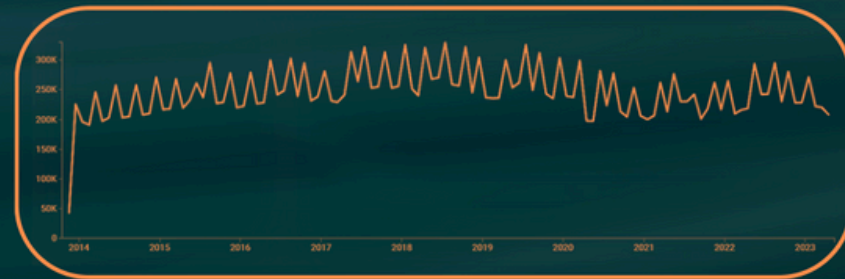
every 56 days

since 2014\* (NYC Open Data, 2003)



911 Calls

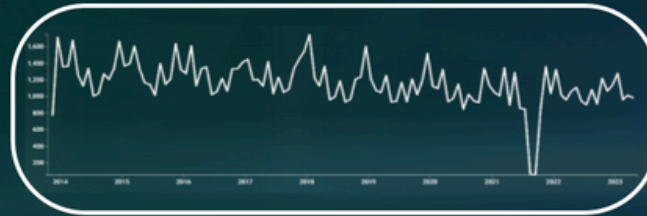
(NYC Open Data, 2003)



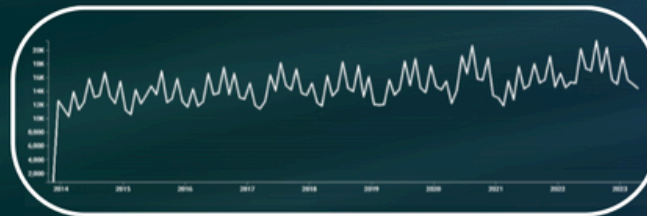
As one of NYC's major life-saving systems, 911-Call technicians and first-responders are vital to NYC's almost 8.5 million people. Through abductive reasoning the data below shows there is not sufficient resources to provide for NYC's thousands of emergencies.



30% variance



24% variance



23% variance

(on the same dates)

## Call centers report:

#1 issue faced by



call centers is **UNDERSTAFFING**  
(National Emergency Number Association, 2023)

**\$35k** starting salary  
(Aponte, 2022)

there is strong correlation between and statistical evidence to suggest that issues 1, 2, and 3 lead to:



**10000**

leading to **unregistered calls per day**

#2 issue faced by



call centers is **STAFF BURNOUT**  
(National Emergency Number Association, 2023)

#3 issue faced by



call centers is **STAFF CHURN**  
(National Emergency Number Association, 2023)

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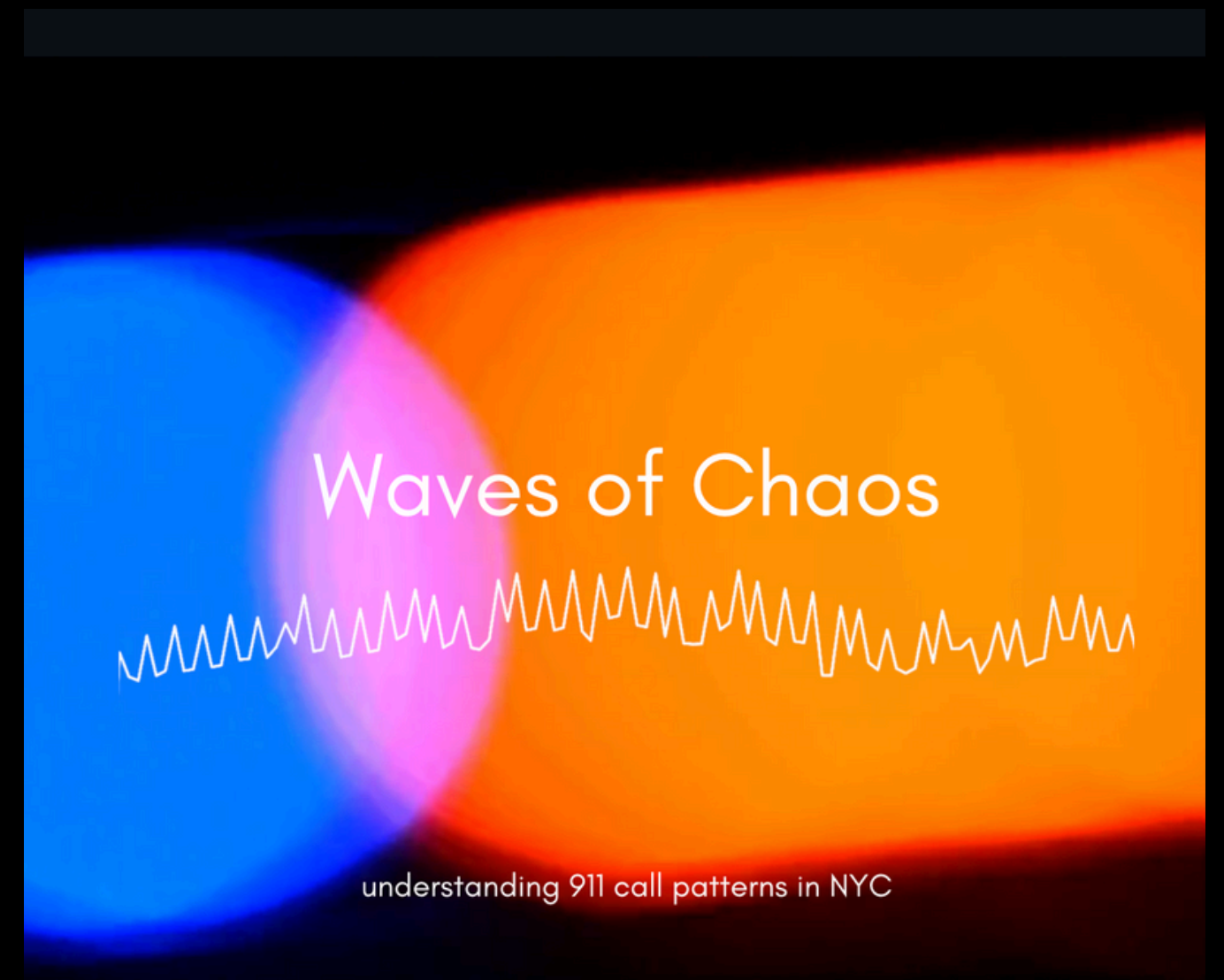
# DATA STORY

## video

Videos have become commonplace in today's media-driven world. They are not just for leisure, but are used in workplace settings for a number of uses. They can impart a great amount of information in a short period of time making them an extremely efficient and valuable tool. Throughout the course, Professor Storey, authors, guest speakers and others have stressed the power that a simple story can hold. Videos are an optimal method for relaying these stories. It seemed to be the team's first attempt at being the primary producers of a video. With the help of video tutorials the undertaking was lengthy but extremely worthwhile. New skills and exchanges in techniques and lessons were exchanged among the teammates, even on the heel of illness.

### assignment

Produce a two to four minute video-clip that tells the data story that you have told in the prior two assignments. Use narration, sound effects and/or music to tell an interesting and compelling story. Keep in mind that the viewer has no prior knowledge of this story. Utilize still and/or moving images to enhance the story as well as animation of the data to perpetuate meaning and context.



## WAVES OF CHAOS VIDEO SCRIPT

Did you know there might be over 1000 unanswered 911 calls per day in New York City. Let's confront this sobering reality.

Burnout among 911 dispatchers in New York City is not just a statistic, it's a crisis.

Closer examination of the data reveals a disturbing pattern.

Consistent dips in the number of registered calls every 56 days is translating to a significant 16% reduction in responses across all categories.

What's truly perplexing is that these steps aren't isolated to specific emergencies.

Whether it's a life-threatening medical emergency, a structural fire or past crime, all categories experience, the same rhythmic disruption. It's not the nature of emergencies, it's something deeper, something more systemic.

This leads us to a critical point: the mental health of our 911 dispatchers.

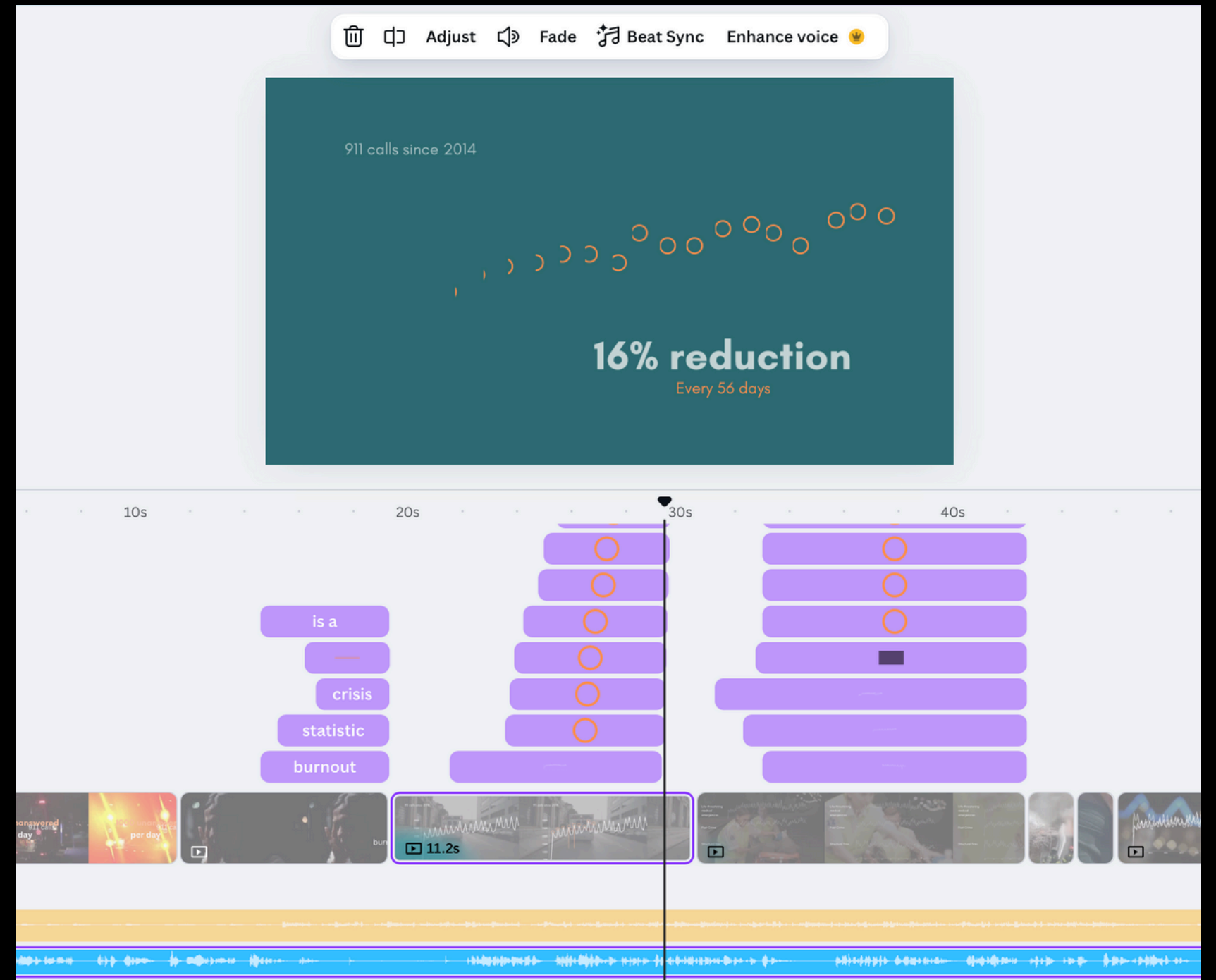
According to the national emergency number association a staggering 82% of all call centers report understaffing as their number one issue.

75% suffer from staff burnout. 49% struggle with staff churn.

Compounding the issue is the harsh reality that 911 dispatchers, often, unseen, and unheard, are among the cities lowest paid workers with a starting salary of 39,000 per year and frequent mandatory 16 to 18 hour shifts.

Their dedication comes at a significant personal cost.

These are not just numbers, they are voices of those on the front lines.



# LESSONS AND outcomes

This course provided a profound understanding of how data visualization serves as a bridge between raw information and meaningful insights. One of the key lessons I took away was the importance of clear communication in data storytelling. A well-composed visualization should not only present data but also guide the audience through a structured narrative. Learning how to create sequential storyboards helped me plan and refine my approach, ensuring each visualization had a purposeful flow. Additionally, selecting the right visual elements—whether charts, graphs, or infographics—proved essential in effectively conveying different types of data. By aligning the form of visualization with the nature of the dataset, I was able to enhance clarity and engagement.

Another critical takeaway was the role of comprehension in making data accessible and compelling. I became more aware of how data is often presented in ways that are either overwhelming or misleading, requiring careful interpretation. Identifying patterns and trends within datasets allowed me to shift focus and highlight the most impactful insights. This skill was especially useful in distinguishing relevant information from extraneous or even misleading context that sometimes accompanies statistical reports. Through this process, I developed an appreciation for working with raw data, as it often holds deeper, more authentic stories than pre-processed summaries. By prioritizing a direct analysis of unfiltered numbers, I gained a stronger ability to craft narratives that are both accurate and meaningful.

Beyond theory, the application of these concepts in real-world scenarios reinforced the significance of effective data visualization. Evaluating and critically analyzing different datasets transformed my understanding, allowing me to approach data with a more strategic mindset. Working alongside my teammates helped sharpen my collaborative skills, as varying perspectives contributed to more well-rounded interpretations and a unified vision. This experience underscored how aligning on common goals strengthens the overall impact of a data-driven project. Ultimately, this course not only enhanced my technical skills but also deepened my ability to think analytically and present information in ways that inform and inspire.

(Canva.com, 2023)

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