



HISCIFI-2014 COLLABORATIVE FICTION

STEMWORKS CONFERENCE PARTICIPANTS WITH DAVID A.M. GOLDBERG



1

INTRODUCTION

Can we use science fiction as a way to generate interest in Science, Technology, Engineering, Art and Mathematics (STEAM)?

RIGHTS AND SOME NOTES

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PROJECT MAP

Thanks for opening this iBook! It represents the collective effort of over a dozen students who attended these workshops that explored the connections between creative writing, online research, digital communication arts, and STEM. All of the work in this iBook was completed over the course of two, two-hour workshops, and compiled into a single edition afterwards.

Chapter One: Introduction features three sections: 1) this project map; 2) a project summary and list of resources that were to have been brought to the workshop; and 3) a conversion of the 15-minute introductory lecture on science fiction and reality that I delivered in order to set the stage for the workshop.

Chapter Two: Pele's Great Awakening features a series of Photoshop composites that attempt to visualize what a massive and continuous volcanic eruption on the Big Island might look like from the where the students live. There is also a short eye witness account of an eruption. This chapter required students to do some mapping to find out the point closest to where they live that would offer a view of the eruption. Google image searches for volcanic eruptions and views from those geographic points were made. Students had to

consider distance, image size and resolution, and certain characteristics of volcanic eruptions to ensure that their composites were at least pointed in the direction of realistic. For example, despite the visual excitement of a lava fountain, if the student's home was on O'ahu, a composite using such an image would be unrealistic. Composites were created through the use of Photoshop's layer masks.

Chapter Three: Stormageddon features an interactive map of all the hurricanes and tropical storms that battered the Hawaiian islands during the summer of 2024. It also features testimony and descriptions of what each of these storms were like. Students were required to find images that illustrated their descriptions effectively and realistically, and required to describe the effects of the storms wherever they made landfall.

Chapter Four: Exodus. Though this chapter is underdeveloped, it represents a part of the project that was intended to get students to consider whether they would actually stay in Hawai'i if such a series of disasters were to occur. Were these islands to suffer from even a fraction of the impact imagined in these worst case scenarios, the depopulation of the state would be a very real concern. Would all of

those who could leave do so? What would happen to those who couldn't?

Chapter Five: Robots features various short writing samples about the pros and cons of increased automation, specifically as it impacts Hawai'i. Here students consider the effects that advanced robotics would have on areas of life such as agriculture, tourism, retail and health. This section benefits from audio files that feature students telling stories about the “pro-” and “no-” robot sides of the issue. This section also aids in inspired by the fact that Hawai'i is increasingly known for its high school competitive robotics teams, and invites students to consider what would happen if some kind of robotics industry were to take off in the state.

Chapter Six: The Future of Aloha. This chapter presents the complete outline of all questions that were asked of the students in order to prepare for the workshop. Here you will find discussion questions for you to use in your own classes or efforts, requirements for the different kinds of writing that are called for in the different chapters, and specifications for what kinds of digital media production will be included.



PROJECT SUMMARY

This project is about a possible future of Hawaii. In the following pages you will find various events described and will be asked to answer questions and provide narrative that fills in the gaps.

The writing you will have to do is of various types that ranges from journalism to first-person accounts and slogans. Unless you are totally inspired, your narrative writing will not exceed 600 words, excluding some short lists or single-sentence answers. You will also have to do some thinking about the impact of technology and science on our environment, especially as we confront the effects of climate change and accelerating technological capacities.

You will be required to come to the workshop with the following on a USB stick or ready for download from a cloud service like Google Docs:

1. All Your writing done. We recommend simply typing into this document and saving it.
2. Your digital images ready – some you will take yourself, others you will find online.

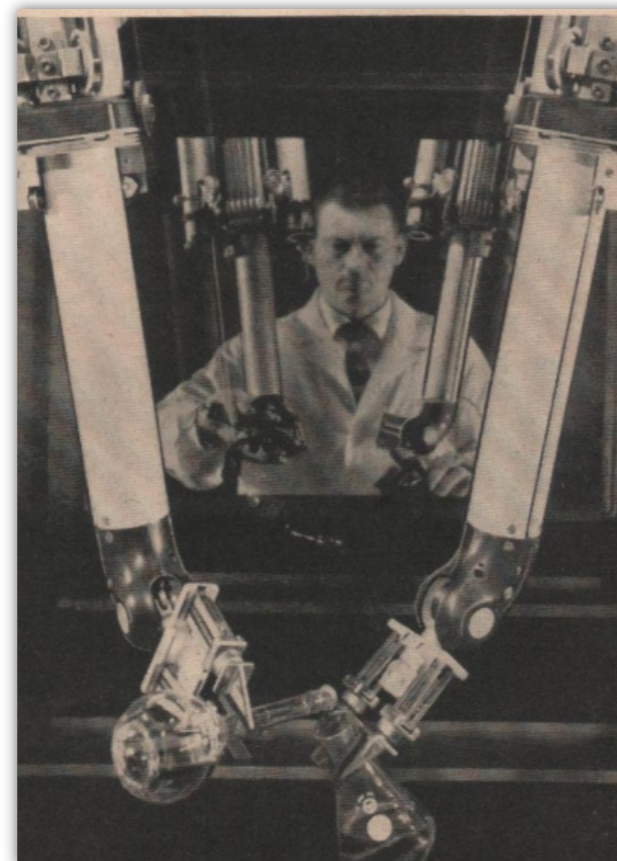
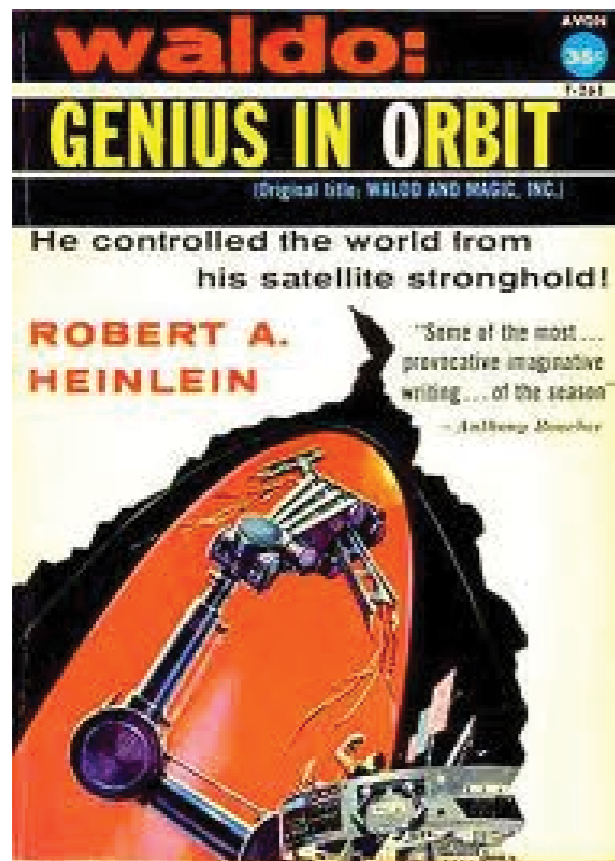
You will also be expected to come prepared with:

1. A familiarity with this document and the resources it refers to.
2. Your ideas ready for discussion.

We will be using Photoshop to do some image processing, and iBooks Author to integrate text and image. We will also be using some of iBooks Authors' testing features to build quizzes that readers will take. If time permits we will include some 3D modeling as well. The more prepared you are when you come to the workshop, the more time we will have to explore the advanced features that iBooks Author makes available.

The end result will be a collaborative text that explores this possible future of Hawaii from each of your perspectives. You will all be answering the same questions, but from different vantage points that are based on where in the state you live, your lifestyle and your interests.

The Axiom spacecraft from Pixar's "Wall-E" is the paradise humanity retreats to after over-polluting the planet. The inset shows the pool deck of the Wailea Marriott hotel: already a kind of ecological science fiction environment that blends Western luxury and Hawaiian culture for tourists.



SCIENCE FICTION AND REALITY

The relationship between the human imagination and the technology we create is one of the classic chicken vs. egg scenarios. Which comes first? The technical innovation or the moment of necessity that produces new insights? The answer is of course "both" or "neither" as sometimes necessity does indeed mother invention, and other times artists use the power of their imaginations to show us new worlds. Science Fiction is a literary genre that takes great pride in attempting to get its audience to think about the future by pressing the fast-forward button on present technologies. Of course, as technologies change so do societies, thereby introducing the opportunity to discuss ethics, morals and a wide range of if-then scenar-



This image from 2004 shows a surgeon performing a remote surgery via remote controllers descended from the “Waldo” arms (used to handle hazardous materials) shown on the previous page, which in turn descend from the imagination of 1950s science fiction author Robert A. Heinlein.

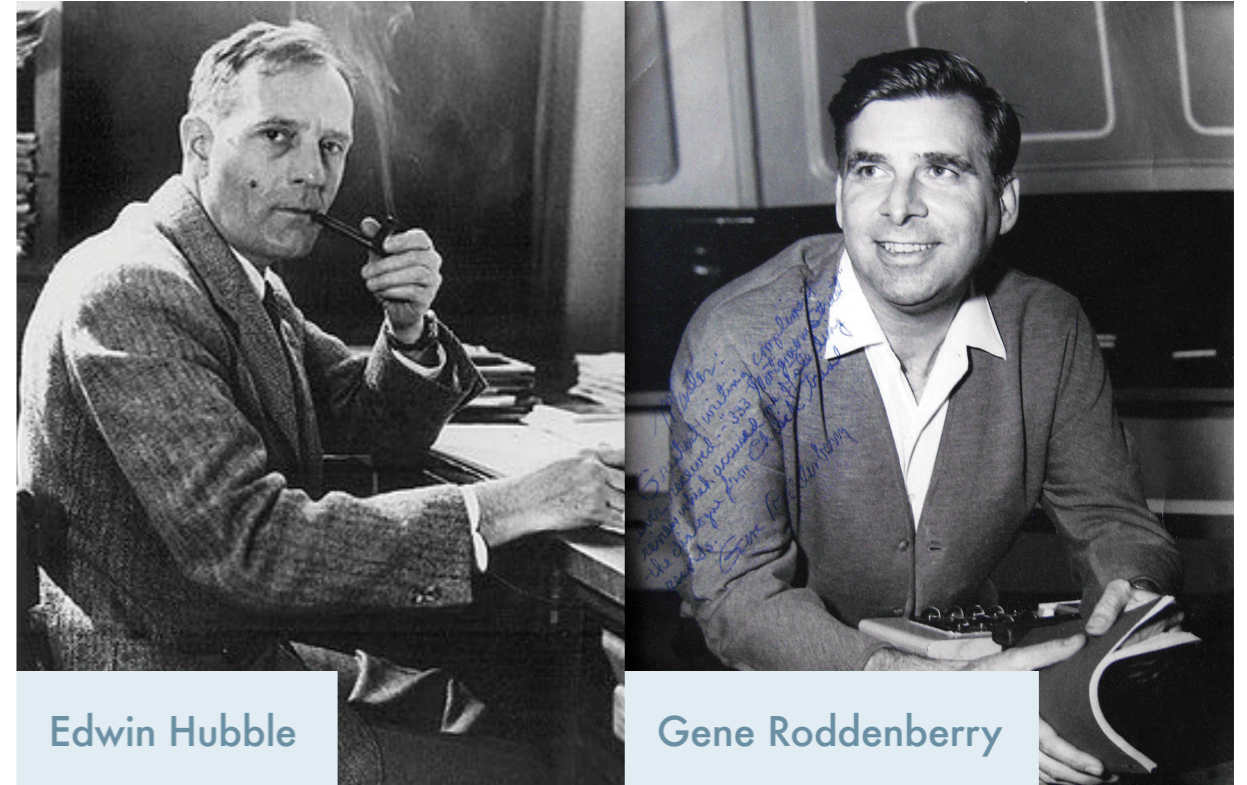
ios. Scifi has been one of the most consistent means for modern culture to consider its future. Just as the remote surgical suite on the previous page can be traced back to Heinlein's imagination, the production designers for the film *Prometheus* were inspired by such actual systems. By adding some artificial intelligence and advanced



robotics they came up with the “medpod” pictured above. The medpod user lies down in the chamber and automated systems take care of examination, diagnosis, and if necessary surgery. Those who have seen the film know that things don't go exactly as planned when the device actually gets used.

But it isn't all bad news and horror. Gene Roddenberry, the creative who invented the *Star Trek* franchise, was inspired by the expanded view of the universe provided by scientists like Edwin Hubble (with the pipe) and the United Nations as a planet wide organization. Just two years after the Civil rights Act (1964) and about halfway through

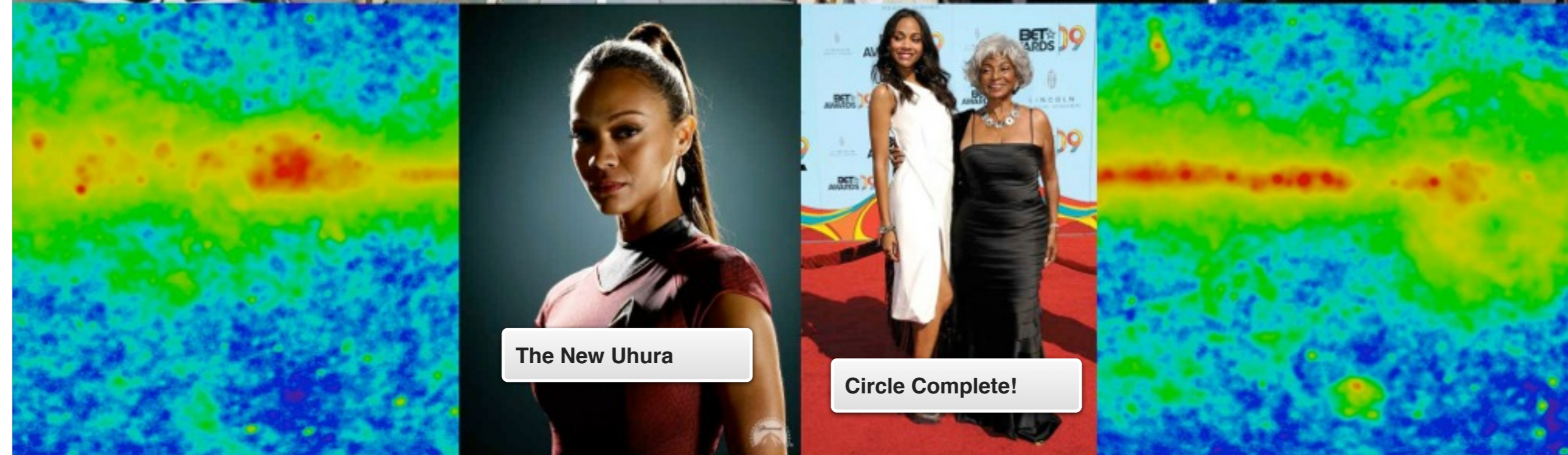
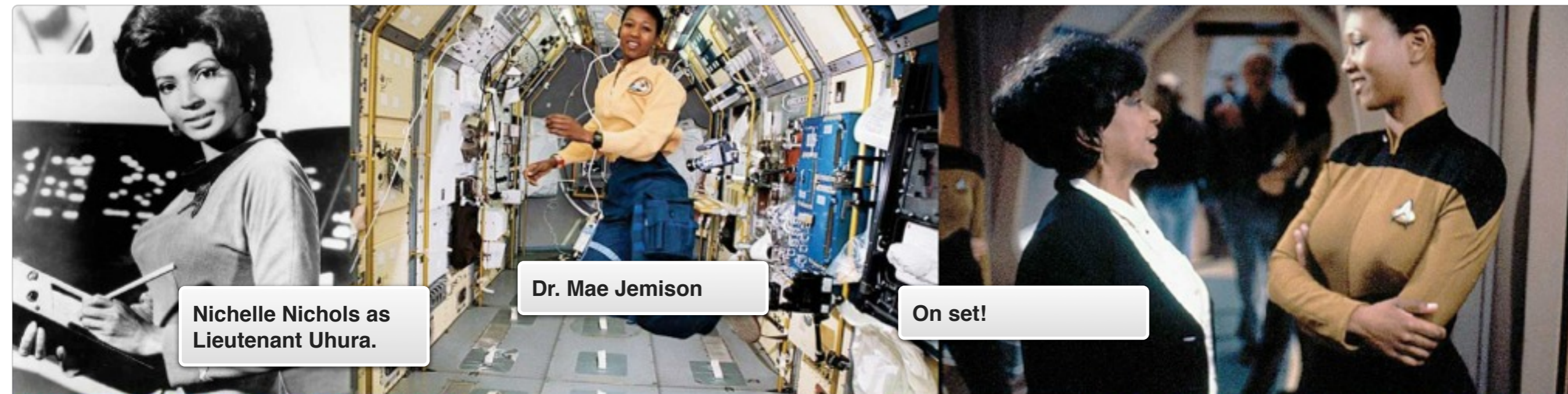
the Vietnam War (1956-1975) Roddenberry was projecting a multicultural, exploration-based vision of humanity into American living rooms. Captain James T. Kirk (still a white male, but we take what we can get) led a Russian, a Japanese, an African American, a Scotsman, an Irishman, and a hapa human alien on adventures all over



the galaxy. Traveling faster than light, teleporting from point A to B, and using hand-held energy weapons, portable scanners and flip phones was just part of their everyday life. Today we've got the phones, prototypes of the scanners, and people working on the phasers. FTL and teleportation still seems “impossible,” but who knows?

Seeing such technologies as a part of popular entertainment inspired a generation of engineers to bring them to life, and altered the destinies of people looking for careers in what would come to be known as STEM.

INTERACTIVE 1.1 The Fictional Lineage of Chief Communications Officer Nyota Uhura of the USS Enterprise.



The relationship between our stories and the lives they inspire are significant. Here we see the braid of narrative and reality woven by Star Trek's fictional Lt. Uhura (Nichelle Nichols), the people she inspired, and the feedback loop between the show and the society.

TRIALS AND CONSEQUENCES

Science fiction also allows us to consider the unanticipated outcomes of technology's impact on society, and to anticipate those impacts that are *entirely intentional*.

H.G. Wells' *War of the Worlds* (1898) mixed contemporary advances in telescopes with the reality of European colonial expansion. Just as Native Americans were facing overwhelming military force as their lands were taken over, Wells told the story of Earth's invasion by Martians possessing superior technology. The aliens were poised on the edge of victory when they were defeated by Earth's own microbes—for which they had no immunological defense. In this “happy ending” Wells borrowed from the deadly reality of Native Americans' vulnerability to European diseases to invert the relationship, and echoed [plans](#) to carry out biological warfare against Native Americans by distributing smallpox-infected blankets and handkerchiefs.

George Orwell's *1984* (1949) novel has stood as a warning against a totalitarian surveillance state since it was written. Today, the documents leaked by former National Security Agency contractor Edward Snowden have revealed an incredibly sophisticated set of planet-wide software tools and hardware development strategies that facilitate the recording and retrieval of all forms of electronic communication.

Like *1984*, Aldous Huxley's *Brave New World* (1932) anticipates a society governed by a strict totalitarian hierarchy, but instead of using violent coercion and surveillance, the government uses genetic engineering coupled with a society based entirely around free access to pleasure and constant entertainment to maintain control.

In Wells' case, science fiction was used to encourage reflection on a state of reality, perhaps even inviting the readership to consider what it might be like to be in the position of Native Americans. Meanwhile, Orwell explored the social, emotional and spiritual effects of a system that was impossible in his day but has been recently revealed as fully-operational since the early 21st century. Huxley, writing earlier than Orwell, has been painfully prescient as we currently exist in a society that is based on the pursuit of pleasure, and the promotion of entertainment that distracts people from the problems that they face.

Hawaii is a significant place to explore these issues, as the survival and flourishing of Indigenous Hawaiian cultural practices is by no means a historical issue, contemporary issues of genetically modified organisms in crops, and environmental sustainability are not marginal issues in our students' every day lives.

We need look no further than the dangerous union of cell phone and motor vehicle to see trials and consequences at work. The following image shows one possible result of the PHONE + CAR equation. It's bad enough to consider the tragedy of prioritizing a smartphone interaction while driving, but the issue goes even deeper if the people in the back seat of the vehicle are distracted by the video monitors in the headrests! In this micronarrative the driver and the passengers are all distracted by electronic media. This is not something that the manufacturers of cell phones or cars anticipated, and the effort to create stories that communicate the severity of the risk is relatively young... Meanwhile, companies like Google are proceeding at full speed with the introduction of self-driving cars that, among other selling points, will allow people to all the telecommunicating

that they desire without being burdened with the chore of actually driving their vehicles.

Another possible product of the union of highways and personal communication devices is the socially-networked hovering chairs from *Wal-E*. In this future, inspired partially by *Brave New World*, humans are too obese to move about on their own, and at the same time are addicted to social media and reality television that is literally in their faces. They consume universal smoothies and change the color of their jumpsuits as the trends dictate, all the while completely oblivious to the circumstances of their lives.

In many ways this is the streamlined extrapolation of Google's self-driving cars, which will, of course, be tightly integrated with the rhythms of your everyday life. Because Google already knows your schedule thanks to its surveillance of your email, calendars, shared documentation and social networking, it is only natural that the car you ride in will automatically take you to the coffee or smoothie shop without asking. It is also natural that in a world like this people could become ever-more-deeply embedded in their electronic social realities, forsaking face-to-face interactions.

Again, the specific effects that Hawai'i has on those that live here—amazing weather and a richness of ecology and culture—might mitigate the *Promethean Brave New Wal-E* future... but only if our students are encouraged to think through these scenarios as they specifically manifest in Hawai'i. The ebook you are looking at now scratches the surface of what's possible when we invite our students to think about the future, write about it, and make use of the digital production tools to bring those narratives to life.

ACKNOWLEDGEMENTS

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bert Segawa (Roosevelt High), and Vanessa Sotoza (King Kekaulike).

Congratulations to all of you for working under a tight deadline and being open to improvisation. I tried to get a little bit of something you contributed into this finished product.



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PELE'S GREAT AWAKENING



As seen from Honolulu. Date: 05 / 24 / 2025



This is Pele's wrath as seen from the South-East coast of Maui.



This is Pele as seen on the island Oahu, Hawaii on top of Tantalus.



I was standing around Haleakala, looking at the sunset, on a school trip. Then the ground started to gently shake. Lava popped out of the volcano. I looked out into the distance to see the island of Hawaii. In the distance, I saw beams of lava shooting into the sky. A figure of a woman could be seen within the beam of lava. I could see all around me, many of the island volcanos were erupting. The lava flowed down the mountain. Ash clouds started to form and cover up the sky along with vog. I saw some people were fascinated, while others had a look of panic, but all that fascination went away when the Earth below us started to shake. People started to panic and ran around everywhere. Other people started to run to their cars and take off. The teacher in charge of the field trip called out to the students, who were now panicking. We got into the van that brought us to Haleakala and the driver drove us down the mountain. Behind us, I could see the lava flowing down the mountain, ever so slowly, after us. More earthquakes happened as Pele made more eruptions.



As seen from Ala Moana beach. Date: 6/ 15 / 2023





As seen from WAIKIKI. Date: 01/23/2036

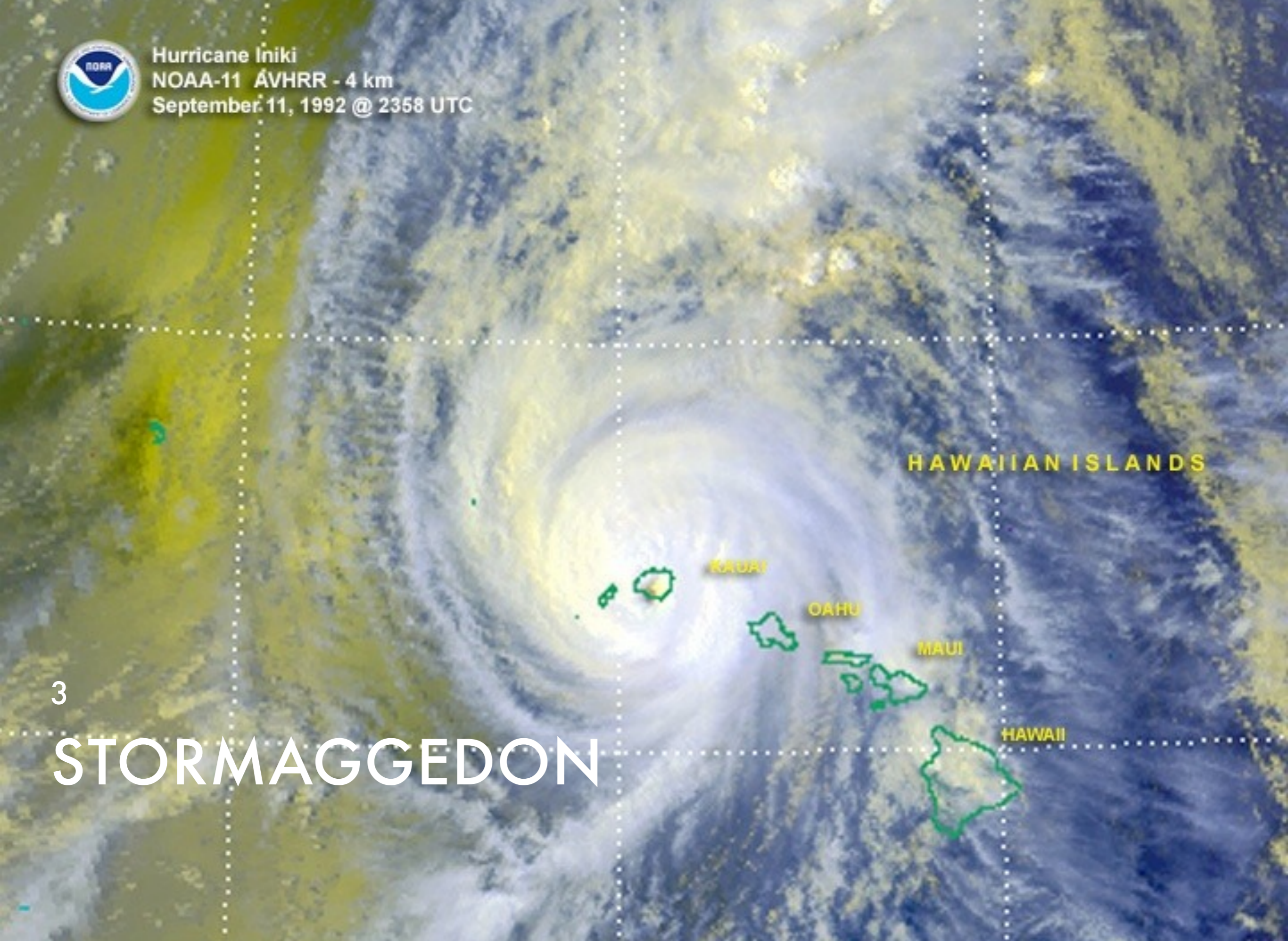




Pele's awakening seen from Maui in Wailuku.

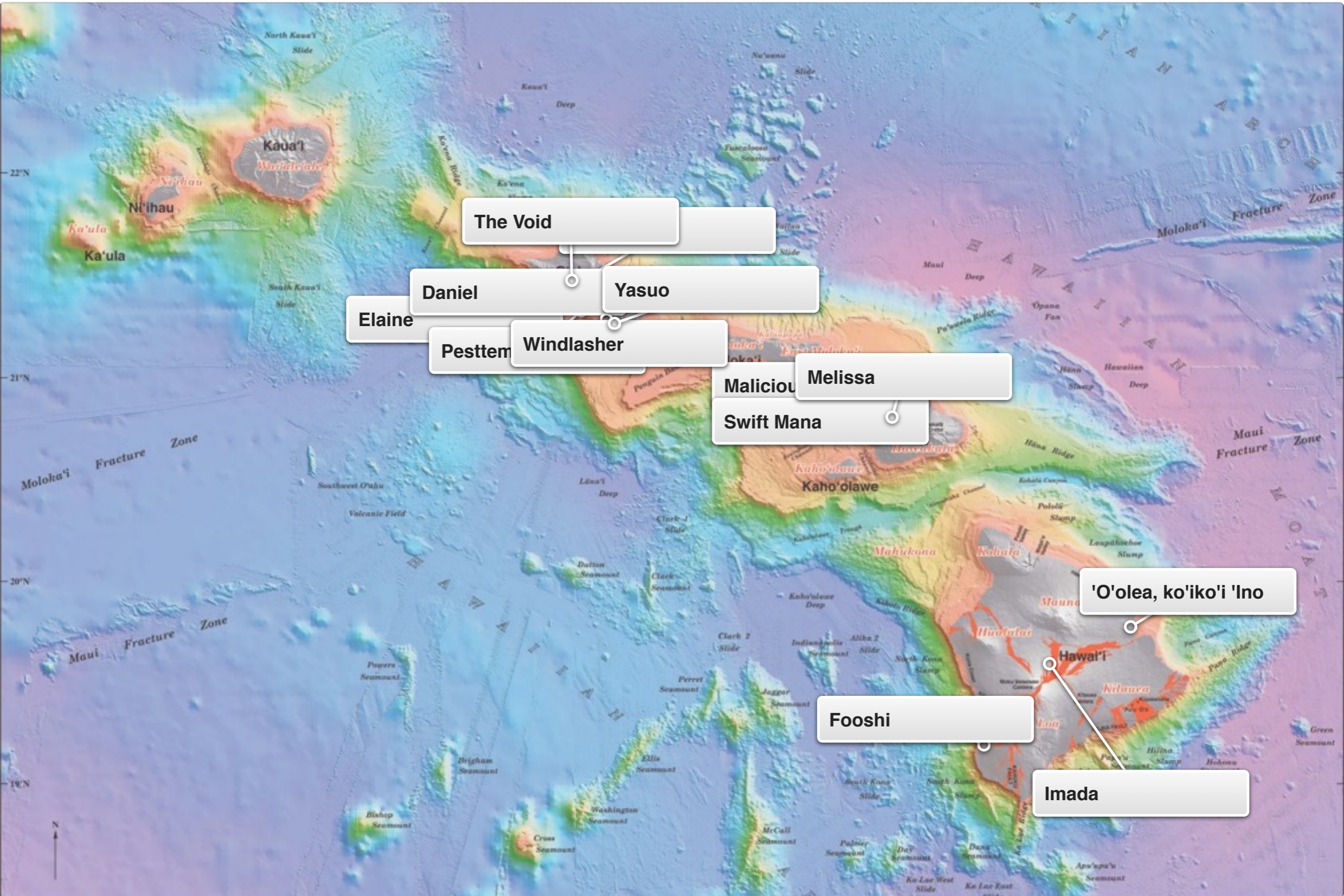


Hurricane Iniki
NOAA-11 AVHRR - 4 km
September 11, 1992 @ 2358 UTC



3

STORMAGGEDON



Stormageddon had a huge impact on the State of Hawai'i in 2024.

HURRICANE WINDLASHER

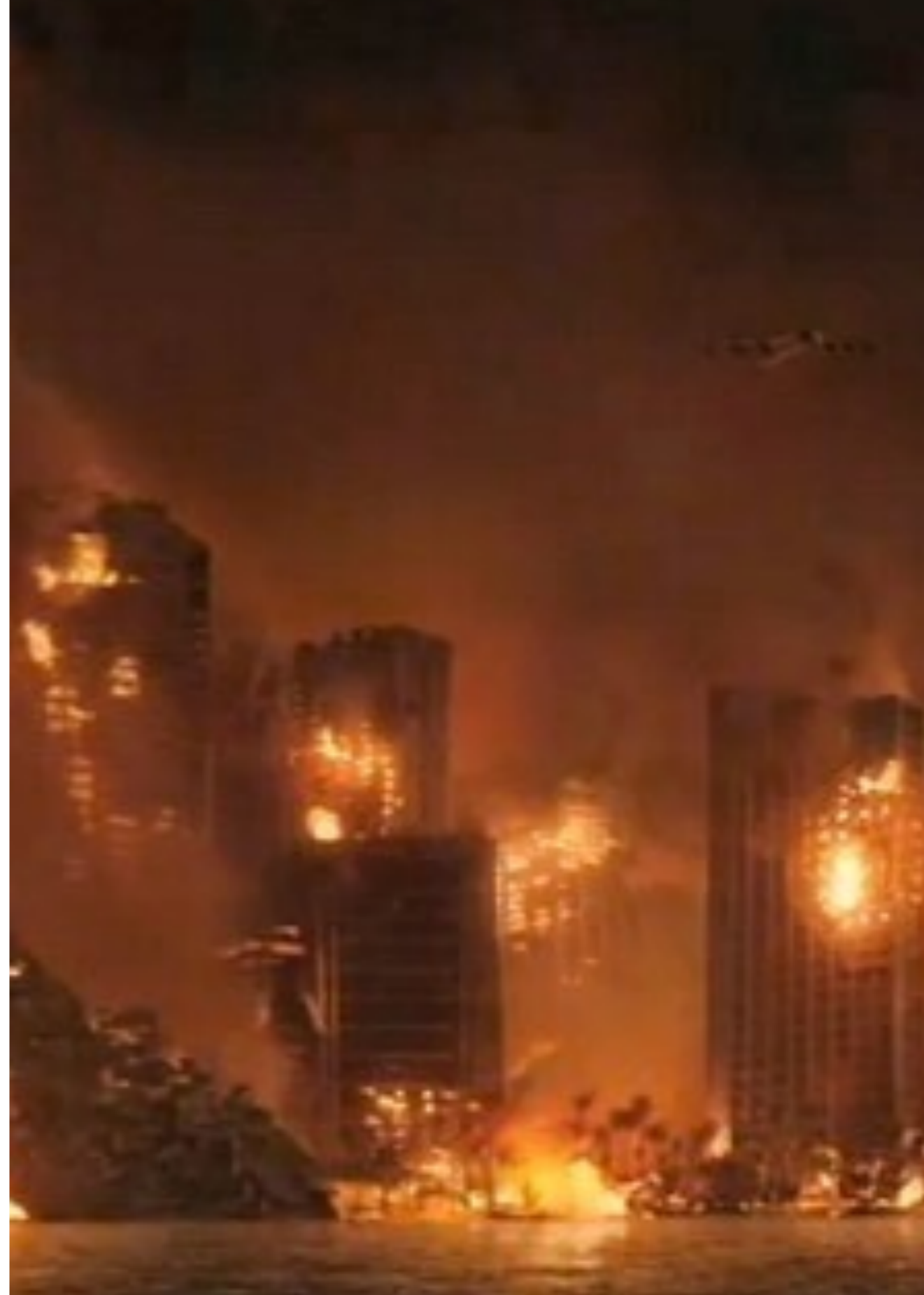
On November 17th, 2024, Hurricane Windlasher made landfall on the South Shore of O‘ahu at Waikiki. The hurricane caused abominable damages to property and had an abysmally high fatality rate. Hurricane Windlasher proved to be the worst hurricane Hawai‘i had seen during the first month of the hurricane season. Larger by far than any of the hurricanes seen in the past ten years, the state began to buckle down for a long siege weeks before the hurricane even threatened to make landfall. Windlasher lived up to its name. Two days before it landed, trees and shingles were already being blown away by the 100 mph winds. School was cancelled, and a state of emergency was declared.



Finally, Windlasher made landfall. Immediately, houses and refugee centers were smashed aside by the immense winds. Howling gales and torrential rains attacked the islands relentlessly. It seemed like an act of some vengeful God. The ocean raged as Windlasher did its work. Boats were capsized instantly and entire beaches vanished under the massive swells. In the days since, new beaches have been formed, and fish and other sea life are still being found miles inland. Finally, the hurricane subsided after three horrifying days. The death toll is still being tallied, and millions of dollars in damages have already been tallied. For now, Hawai'i is picking up the pieces. A mere month into the hurricane season, the residents can only pray for nothing worse to come.

HURRICANE VOID

The massive storm we will call “the void” will storm to the popular island of Oah‘u, leaving everyone to hope for the best, but only expect the worst. It is the biggest storm recorded in the history of planet earth, with tears and paranoia with no way to stop it, their one goal is to survive. The storm migrated from Oahu into america, slowly expanding until every country was affected by it. The storm killed off every living creature besides humans on earth, leaving us to only drink water and the leftover goods that were stocked up. Due to the storming and the debris it created, it formed a new island that the seeds and plants washed up onto, when the countries found out about it, they decided to have a war. Vegetation is important now that there are no animals left on earth. Then they realized, since there are no coun-





tries that own this “new island” they need to conquer it. They were fully prepared to begin war with nuclear warheads and atomic bombs but then they came to the conclusion that they cannot fight physically because all forms of transportations are destroyed by the void. The countries decide to fight using technology, a program where every civilian have access to, fighting for their country. Although many were against the idea of a video game deciding if their country gets to survive or not, the consequence is just like a normal war. There is a non-biased robot, which is programmed to shock your brain into a coma, leaving you to become a vegetable if you die inside of the video game. Leaving the world in the care of hands-eye coordination and skills in real time strategy and first person shooters, they still start to lack food resources day by day, leaving the humans having to eat other humans who have no use after turning into a vegetable, with a new definition behind being a “vegetarian.”

HURRICANE YASUO

Honolulu, Hawai‘i. In September 11, 2024 the hurricane Yasuo hit Honolulu com-



ing from the south and caused 42 deaths and 2 million dollars in damage.

TROPICAL STORM SWIFT MANA

On the island of Maui at Wailea a storm called Swift Mana hit at precisely 10:30 pm on 1/20/2024. The worst aspect of the storm is the storm destroyed the hotels taking away tourism. This event weakened Hawaii's economy.

HURRICANE FOOSHI

Hurricane Fooshi hit Kona, Hawai'i on February 15, 2024 at 11:14. It destroyed all the crops and killed most of the native animals on the island. The hurricane was reported to have lasted for three days and four nights. Locals said that the howling wind made it impossible to sleep during the duration of the storm. Many islanders remerged from their homes to find their vehicles submerged in chest deep bodies of water. They also claimed that animals seemed to find shelter in their cars and tucks. Many pet owners and farm owners were shocked to find their livestock was glowing and seemed to behave differently. Citizens are worried that if more storms hit their crops may start to glow causing serious health problems.



HURRICANE QUAD DESTRUCTOR

“South Papa Avenue... 10,000 PEOPLE DIED EVERYTHING IS GONE... 8-23-2024”

HURRICANE MEGA-CANE

Hurricane Mega-Cane hit the island of Maui, Hawai'i. The hurricane destroyed almost half of the entire island! The Pacific Disaster Center saved the people of Maui by alarming the citizens to go in hurricane-proof shelters. The people of Maui are devastated about their island and the office of Maui decided to contact The Red Cross to help them.

TROPICAL STORM MELISSA

June 7th, 2024 marks the start of Stormageddon. The first tropical storm would be Melissa, which would be among the most destructive. Tropical Storm Melissa gives off a warning to the island of Maui. But is soon to get worse as time progresses. Scientists, by this point, have discovered that this natural disaster is not natural at all. They have received anonymous information that Lanai is the source of what is soon to become the greatest disaster in world history. After ownership of Lanai was passed on to Larry Ellison, it was rumored that his resort secretly held an underground lab. It was guessed that he was producing mutant sugar cane but word lately is that he and his research group are the reason for Stormageddon. The question is now, is why and how they can stop this suspected man-made disaster.



HURRICANE IMADA

Hurricane Imada hit the islands at 7:32 AM. The destruction was huge on the Big Island. Everything from houses to schools were obliterated.

TROPICAL STORM 'O'OLEA, KO'IKO'I 'INO

'O'olea, ko'iko'i 'Ino made landfall in Hilo, Hawaii on July 14, 2024 at 12:06 P.M. The worst aspect of this storm was how much of the island's beautiful agriculture was destroyed. Many people died and many were injured. During Stormageddon, there were many lightning strikes happening across the state of Hawaii. After



Imada battering Maui around
8:00 AM.



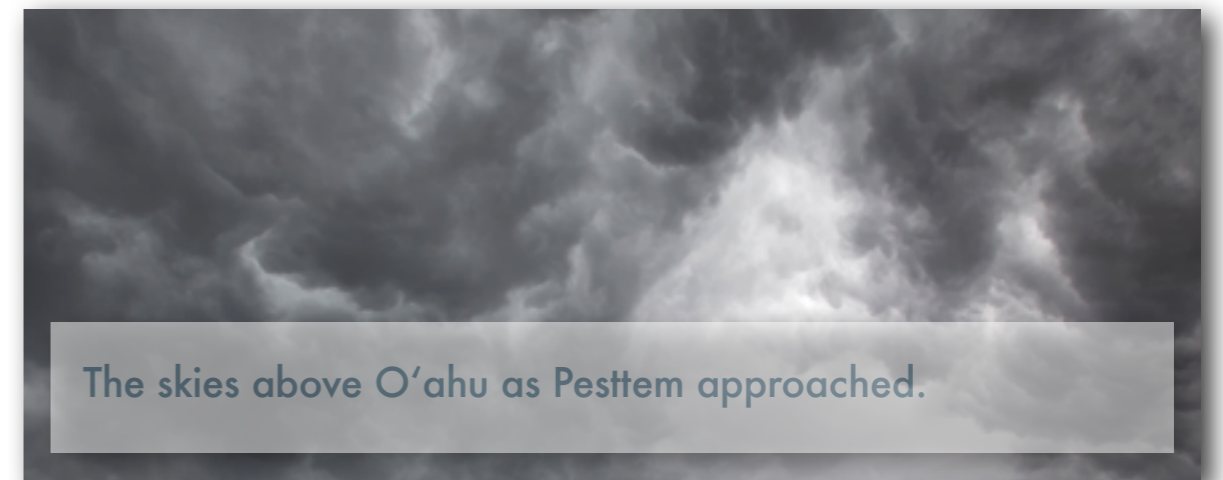
the storm, large piles of residue were left, and the severe rain caused flooding.

HURRICANE DANIEL

This storm made landfall on O‘ahu, on 10/30/2024 at 1:00PM. The worst aspect of this storm was the destruction of the island’s power system.

HURRICANE PESTTEM

This storm made landfall at Pearl Harbor O‘ahu on 11/14/2024 at 1:30AM.



The skies above O‘ahu as Pesttem approached.

An unnamed storm wreaked havoc on Hilo Bay on May 16, 2024 at 6:45 A.M.



HURRICANE ELAINE

Hurricane Elaine hit O’ahu in the summer of 2024. The date is January 23 and 2:17 A.M. The hurricane leaves hundreds without homes.

HURRICANE ARIEL

Hurricane Ariel made its landfall in Oahu at 5:47 on February 25. The worst aspect of this storm was 660 miles per hour of wind.



Elaine leaving the coast of Mexico and Baja California

Relief efforts were overwhelmed by one storm after another during the terrifying summer of 2024.

4 EXODUS 2027

Consider your life now, and where you expect to be in 2027. Would the circumstances of Stormageddon and Pele's Awakening drive you or your family to leave Hawaii? If you remained behind what do you think your greatest challenges would be? If you did leave, how do you think you would feel?

“What could’ve caused a reign of terror in something everyone calls paradise? We’re leaving, leaving for good; and everyone seems to have the same idea as my family and I. There’s no hope for this place, the economy will crash in a matter of weeks if Hawaii’s luck gets any worst.”

“Now that Stormageddon and Pele’s awakening is over I see no reason to leave, there are less tourists wandering around, so that’s not great but things will get better. Plus, everything I have is here, all my friends are here, and Hawaii is completely safe. Everything will be fine, the military has sent scientists to study the volcanoes and the government promises to find a way to help us get back to normal.”

“Like many other families and people, my family retreated from the Hawaiian Islands as soon as the event dubbed “Pele’s Great Awakening” began. The military did not do much to aid the people, for they simply turned tail and fled. Everything in the islands simply stopped, like tourism, government, everything just went to chaos as this happened.”



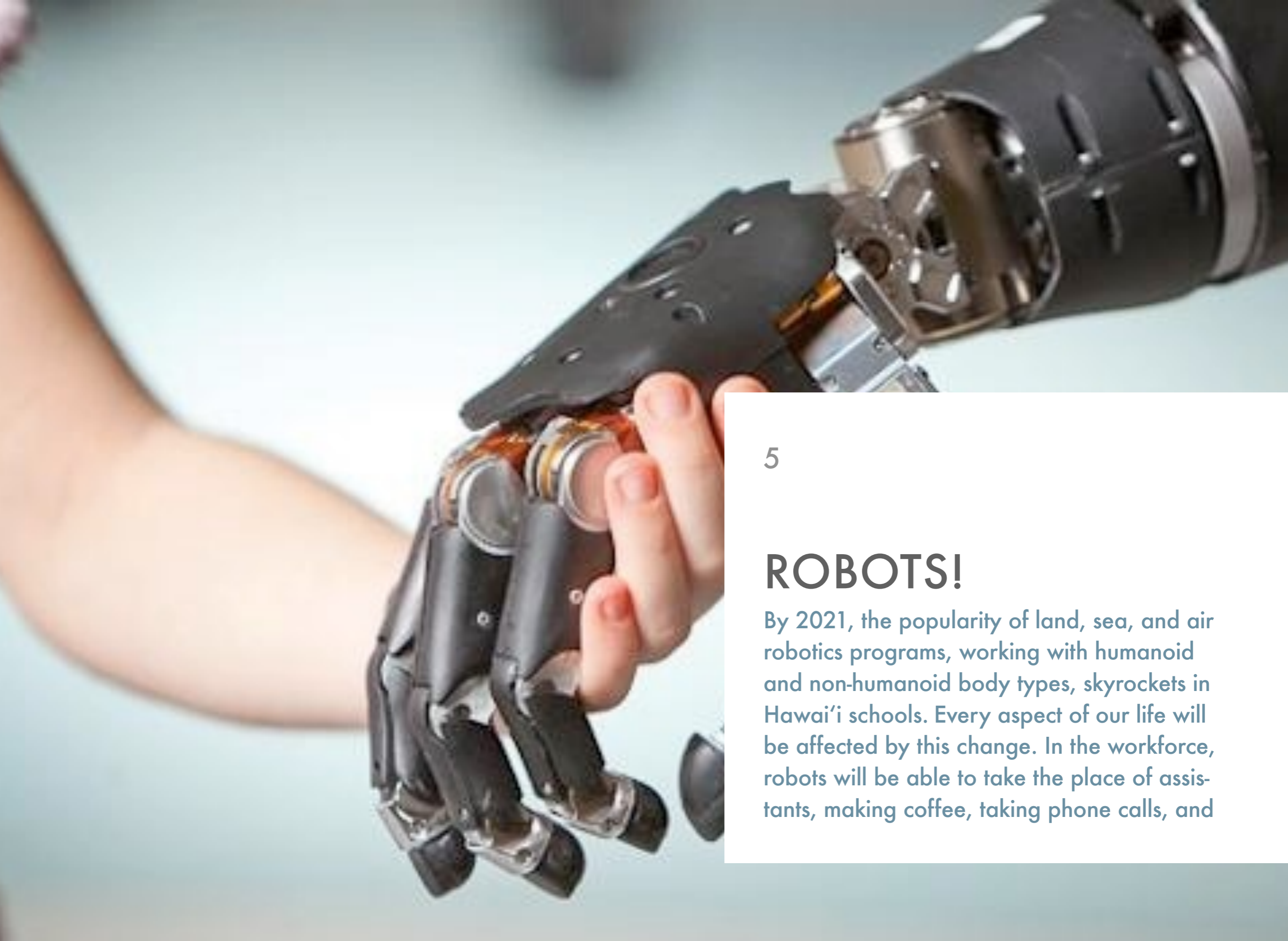


WHAT ROLE DO YOU THINK THE MILITARY WOULD PLAY IN MAINTAINING ORDER?

WHAT DO YOU THINK WOULD HAPPEN TO TOURISM IN THE WAKE OF SUCH EVENTS?

DO YOU THINK THAT THE STATE AND FEDERAL GOVERNMENT WILL BE IN A POSITION TO HELP YOU IF THESE EVENTS WERE TO OCCUR?

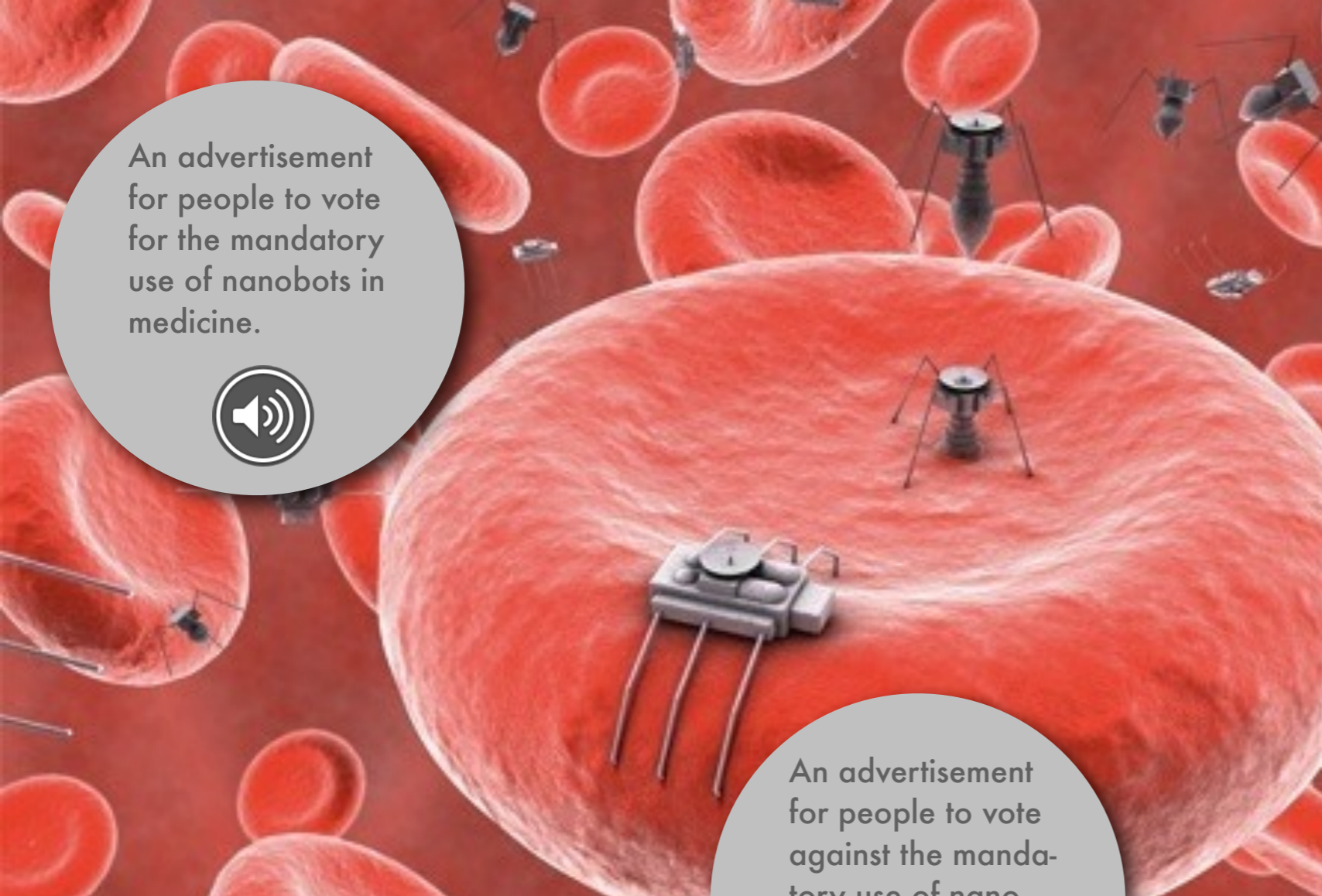




5

ROBOTS!

By 2021, the popularity of land, sea, and air robotics programs, working with humanoid and non-humanoid body types, skyrockets in Hawai'i schools. Every aspect of our life will be affected by this change. In the workforce, robots will be able to take the place of assistants, making coffee, taking phone calls, and



An advertisement for people to vote for the mandatory use of nanobots in medicine.



An advertisement for people to vote against the mandatory use of nanobots in medicine.



keeping track of schedules, etc. In the military, robots can be utilized for search and rescue, such as a snake-bot that will check where things are. Robots can also be utilized in tourism, as tour guides, providing better and faster service in restaurants and many more

PRO-BOT OR NO-BOT?

The Pro-bot Versus No-bot debate came to a head in 2024 when a virus corrupted the mainframe of the majority of nanobot users. This virus made those who were infected under control of our eternal overlord Bill Gates.

CAR RUNS INTO SIDE OF SCHOOL

One day a car ran into the east side of a middle school. The robotics team just finished fixing a self-performing robot. Then all of a sudden the car blew up and set the rest of the school on fire. The robot's name is Atlas 3.14 .

HONDA HELPS HAWAI'I

Honolulu, Hawaii. In September 11, 2023 the Japanese company Honda sent multiple Asimo robots to help repair the damage caused by the storm Yasuo in Honolulu.



ROBOTS THREATEN US!

“My dad was killed by a robot malfunction in a construction site. He was working with hammer and nails. The robot was about to use the hammer when the robot had a malfunction and he hit my dad's skull with a hammer. The event occurred on Kailea-Kona. If you want to protest, call (808)123-4567.”

ROBOT SAVES THOUSANDS OF STUDENTS

The robots of now are finally able to do what students have wanted... Mentoring! No, not homework-bot, you cheaters, Mentor-bot! Instead of having someone do work for you, actually learn the content! Starting in Maui Waena High, students are learning from a robot!

ROBOTICS TEAM DISCOVERS MISSING LINK!

After four years of consecutive research, the King Kekaulike High School Robotics Team discovered the missing link in the final programming. They have finally eliminated the pesky errors that cause the loss of control over robots. Finally, programmers do not have to worry about a single line destroying hours of work!

MAUI SATISFIED WITH ROBOT POPULATION

The robots helped the people of Maui by being our housekeepers and workers. The people of Maui are thrilled of the robots, thanks to Maui Robots Society. If you want a robot, call (808)987-6543

ROOSEVELT HIGH SCHOOL DEVELOPS NEW ROBOTS

In the year 2021, Roosevelt High School Students in Robotics has developed a nonhumanoid aerial robot especially designed as security. These special types of robots, will fly around the school, keeping track of everything happening, and reporting and stopping fights and conflicts amongst the students.

MAUI WAENA INTERMEDIATE SCHOOL BUILDS ADVANCED ROBOT

Today, Maui Waena Intermediate impressed many people today with a robot. The robot was all land, sea, and air based working with a humanoid body type. Maui Waena robotics made the robot able to swim in deep ocean and hover in the air as high as



“One of the places robots would be working is in our malls. these humanoid-like robots would act as a security force and help shoppers on where they need to go.”

a one story building. The robot could also speak and it has many characteristics similar to a human’s. The school is planning to make more robots like this one, if the school has enough money for equipment.

BREAKING NEWS!

Hawaii high school, Roosevelt creates small flying drone capable of lifting 5 times its weight. Multiple models made for different tasks.

“I was lost and standing confused unsure where the bookstore was, but out of nowhere one of those mall bots asked what was wrong. from there it got me going the right way and rolled off”

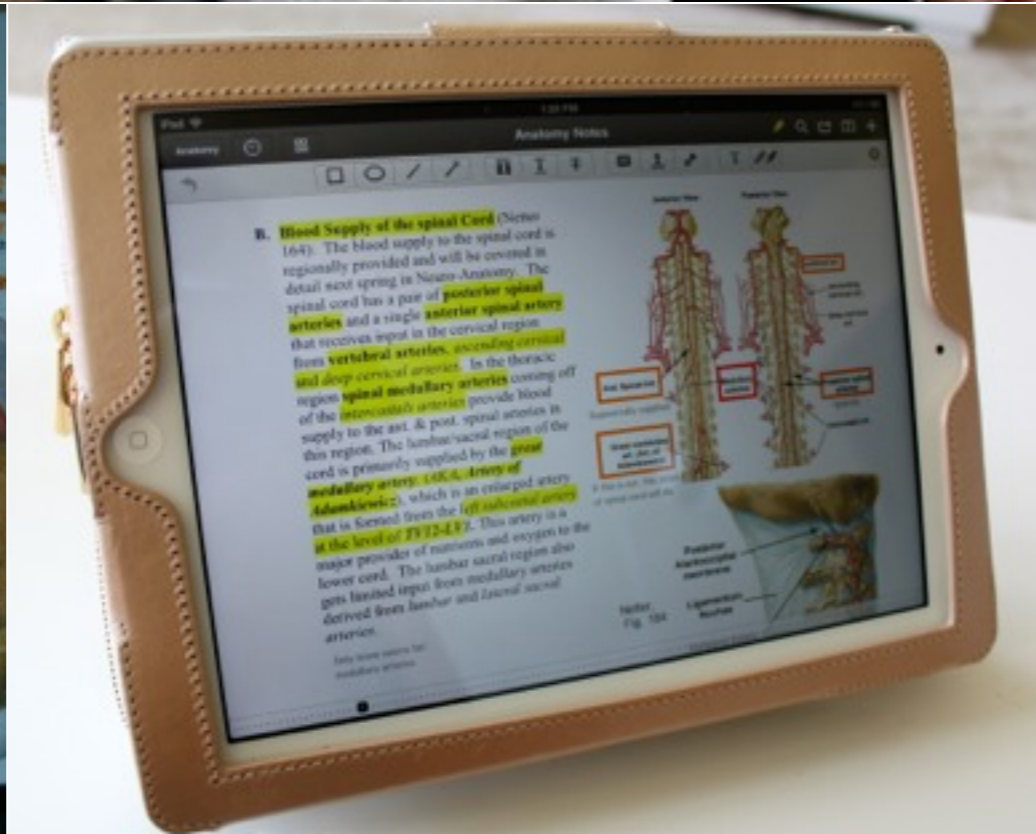
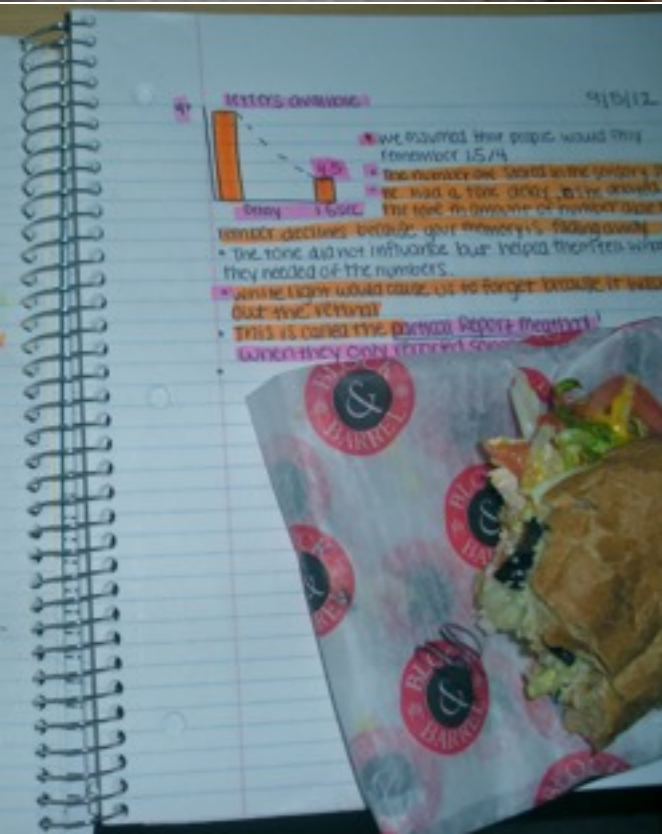


“I was minding my own business then one of those mall bots kept following me around, after telling it to go away a few times it told me i was a “disturbance of the wellbeing of others”...damn thing made me pay a small fine...”

In 2021, there will be robots that take notes for you while you listen to lectures. So instead of rushing or recording your professor then having to listen to it later, you can relax and just listen to the lecture. Later you can print out the notes or refer back to the online.

We could have a robot to help tourist get around Oahu. They could show the tourist around the island and drive them around safely. In addition, we could have robot translators.

We could have automated cars that drive you to where you have to go. They would





know the quickest and best route to get you to work, to school and when they complete their job, they can drive back home by themselves and know when to come back and pick you up. Also, if there are any problems, the robot can tell you exactly what the problem is and how to fix it.

“My robot takes me to work safely! I don’t have to stress about traffic or worry about other drivers. I can relax!”

“I feel like the communication between us drivers is taken away. I enjoy communication through eye contact and motions in the car. It makes me feel uncomfortable just sitting there and letting this robot do its thing.”

KING KEKAULIKE TAKES THE PRIZE

King Kekaulike took home the gold at State Robot Competition this weekend. The Naalii secured their victory with their prize robot “Heim”. The humanoid was able to sprint faster than any of

What do you think about autonomous vehicles operating on the roads of your community?



its opponents. Not only that, but the robot was able to scale a 20 foot wall without hesitation. This win will secure King Kekeaulike High School years of funding to their robotics program.

“I don’t think that technology being deployed on sacred mountains would be a very well received course of action. But I think that if it would greatly benefit the development of robotics, it should be done anyway.”

An Air drone with a smoking detector can be used to catch students in the act of smoking cigarettes or using or selling illegal drugs.

Humanoids and drones act as service applications in Hotels. They act as tourist guides, drivers for transportation, and helpers within the hotels and resorts.

Check out these different types of robots:

[Humanoid by Boston Dynamics](#)

[Mammaloid by Boston Dynamics](#)

[Reptiloid by Massachusetts Institute of Technology](#)

[Flea-oid by Boston Dynamics](#)



The robot drivers are cheaper and easier to maintain but they put bus drivers out of work and affect the economy. People begin to protest against the Robo-Drivers, claiming that the power belongs to the people instead of the robots

Pro: Technological advances, incorporation of technology based classes in school to produce students with skills to design and create robots. High demand for the occupation will exist in Hawaii, providing the citizens with newer jobs in the manufacturing business.

“Robots could invade the Hawaiian islands: a sign of disrespect to the people of Hawai’i and to the ‘āina.”



6

THE FUTURE OF ALOHA

[MY_NAME_IS] _____.

[I_AM_THIS_OLD] _____.

[I_AM_FROM] _____ (CITY), _____ (ISLAND), Hawaii.

[MY_HAWAII] is primarily (check all that apply):

- Rural
- Urban
- Suburban
- Tourist
- Military

This chapter summarizes the document that was sent to workshop participants so that they would come prepared with content. It provides some plot elements that can help students consider the future of Hawai'i.

Introduction

This document contains information about the possible future of Hawaii. Below you will find various events described and will be asked to answer questions and provide narrative that fills in the gaps. The writing you will have to do is of various types that ranges from journalism to first-person accounts and slogans. Unless you are totally inspired, your narrative writing will not exceed 600 words, excluding some short lists or single-sentence answers. You will also have to do some thinking about the impact of technology and science on our environment, especially as we confront the effects of climate change and accelerating technological capacities.

We will be using Photoshop to do some image processing, and iBooks Author to integrate text and image. We will also be using

some of iBooks Authors' testing features to build quizzes that readers will take. If time permits we will include some 3D modeling as well. The more prepared you are when you come to the workshop, the more time we will have to explore the advanced features that iBooks Author makes available.

The end result will be a collaborative text that explores this possible future of Hawaii from each of your perspectives. You will all be answering the same questions, but from different vantage points that are based on where in the state you live, your lifestyle and your interests.

Sustainable and Renewable Civilization

The following points of fiction are provided to help you add additional layers of detail to your work.

Come prepared to discuss the pros and cons of the following points:

- ⦿ High capacity batteries developed in China come into common household usage. Hawaii begins exporting solar-charged batteries to China in exchange for steep discounts.
- ⦿ In the spring of 2018, the island of Maui reduces energy imports significantly by setting up an effective sun harvesting system on the Lahaina side of the island.
- ⦿ Housing costs on O'ahu continue to skyrocket, pricing many everyday people out of the market for home ownership.
- ⦿ The cost of tuition for UH Mānoa continues to increase, putting pressure on those who can attend. UH Hilo begins to take up some of the slack thanks to military and corporate support in the areas of astronomy and robotics.

◉ Oil doesn't get any cheaper and alternative fuels are still slow to reach the market. As a result, prices of goods imported to Hawaii continue to increase. People are upset that they can't lead the same lifestyle as their friends, family and fellow-citizens on the US continent.

◉ The military commitment to Hawaii shifts to possible confrontations with China, space-based electronic warfare and surveillance. Fewer active duty soldiers are in Hawaii, replaced by a smaller number of software engineers and equipment operators. A good deal of military activity is managed remotely, and the bulk of the attention is now going to the Big Island. This downsizing affects the O'ahu economy.

◉ Development of additional telescopes on Mauna Kea is directly challenged by Hawaiian activists who occupy the mountaintop and disrupt scientific activities.

◉ Molokai absolutely refuses to be the battery for O'ahu.

◉ The island of Lanai becomes wholly dependent on the exclusive billionaire's retreat built by its owner Larry Ellison. Rumors circulate that various genetic agricultural experiments are being carried out there without regulation or oversight.

◉ The economy of the US continent fails to significantly improve during the latter half of the 21st century's second decade. Fewer tourists come from the US... attention turns to Asia again.

◉ **YOU MAKE UP A SIGNIFICANT EVENT**

◉ **YOU MAKE UP A SIGNIFICANT EVENT**

Ecology and Development

1. Stormageddon 2024

In the summer of 2024 a series of hurricanes and severe storms struck the Hawaiian island chains. The effects were so severe and disruptive that locals called that season "Stormageddon."

➡ Using the facts above, write a 200 word journalism-style account of [MY_STORM_NAME] making landfall and the results of its impact.

[MY_STORM_NAME] is _____.

This storm made landfall at this location _____.

This storm made landfall on [MONTH] _____ / [DAY] _____ / 2024 at [TIME] _____.

The worst aspect of this storm was _____.

Your account should focus on the details of a group of people who were sufficiently prepared for this storm, and describe at least two significant ways their advance preparation helped them to survive and help others.

➡ Find six images that represent the kind of extreme weather we might experience during Stormageddon. These can be post-event images, meteorological data, satellite imagery, or images from actual storms. We will use these images to illustrate this section of the story.

2. Pele's Great Awakening 2026

In the fall of 2026 Pele, along with many of her brothers and sisters along the Ring of Fire, had her Great Awakening. The most powerful

expressions of this eruption cycle wouldn't taper off until 2029. Upshot: effects of global warming are offset by decrease in sunlight reaching Earth's surface.

➔ Write a 200 word first-person, eye witness account of one of her eruptions, from the perspective of where you live in the state. Of course this will differ depending on where you're from, so take distance into account. Also, imagine what you will be doing in 2026—this is a projection of your own life. You may need to do some visual and technical research on volcanic eruptions.

This account must reference at least two of the following effects of volcanic eruption: *vog*, *ash clouds*, *lava bombs*, *earthquakes*, *lava flows*, *tsunami*.

➔ Take a photograph in [I_AM_FROM / MY_HAWAII] that could be used to illustrate this account. You will be using Photoshop to create a composite image that adds the appropriate volcano-related content to this image.

3. Exodus 2027

Consider your life now, and where you expect to be in 2027. Would the circumstances of Stormageddon and Pele's Awakening drive you or your family to leave Hawaii? If you remained behind what do you think your greatest challenges would be? If you did leave, how do you think you would feel? Carefully consider the answers you provided for [MY_HAWAII] above, and take them into account when deciding whether to make the Exodus or become one of the Remained.

➔ Write a short, strongly declarative piece in 3 sentences.

⦿ What role do you think the military would play in maintaining order in Hawaii?

⦿ What do you think would happen to tourism in the wake of such events?

⦿ Do you think that the State and Federal government will be in a position to help you if these events were to occur?

Robotics

To aid in conceiving of the future regarding robotics in Hawai'i, watch these clips as an introduction.

Google just bought Boston Dynamics, a US company that specializes in advanced robotics for the military:

<http://www.youtube.com/watch?v=2jvLaY6ubc>

<http://www.youtube.com/watch?v=wE3fmFTtP9g>

<http://www.youtube.com/watch?v=6b4ZZQkcNEo>

<http://www.youtube.com/watch?v=SD6Okylclb8>

Meanwhile, in Japan:

<http://www.youtube.com/watch?v=yND4k4NM0qU>

http://www.youtube.com/watch?v=BmgIbk_Op64

And in the Weird:

<http://www.youtube.com/watch?v=wR0AllwEgSE>

<http://www.youtube.com/watch?v=vCrN47cOmHQ>

<http://www.youtube.com/watch?v=nFW1I2c57d8>

Blurred lines:

<http://www.youtube.com/watch?v=HedXMbvabbk>

<http://www.youtube.com/watch?v=wctyAWw8STQ>

<http://www.youtube.com/watch?v=eNG1nza1ktc>

<http://www.youtube.com/watch?v=8cJv4O2zEOw>

1. *Ascendance*

By 2021, the popularity of land, sea, and air robotics programs, working with humanoid and non-humanoid body types, skyrockets in Hawaii schools.

Come prepared to discuss and answer the following questions:

Which type of robot do you think will be the most popular for students in the future to experiment with?

Which school do you think will get to work with the most advanced robot types?

➔ Write a headline and five sentence lead paragraph describing something amazing that your school accomplishes with robotics in 2021. Be sure to specify whether the robot is land, sea, or air based, and whether it is humanoid or non-humanoid.

2. *Everyday Life*

By 2021 robots are a common part of everyday life all over Hawaii.

➔ List seven areas of life where robots will play a significant role in future local life, assuming advances are made in the technology featured in the videos above.

Hawaii probably won't be a robot manufacturing site in the future because it's just too expensive to ship things here. However, we get pretty good at designing and programming them. The geological di-

versity of the Big Island makes a great training ground for robots that are used for off-planet exploration, search and rescue, disaster response, surveillance, and warfare. Robotics eclipses astronomy. Both volcanoes are literally crawling with robots at all times, operated by local teams, international research corporations, and the US military.

Write a short reflective piece about the indigenous Hawaiian reaction to this technology being deployed on mountains that they consider to be sacred.

3. *Drone Wars*

In fall 2023 people in Hawaii are bitterly divided by the pro/no-bot issue. There are great advantages to the popularization of automated, remote controlled and autonomous robotic systems being deployed in Hawaii.

➔ People can order food, groceries, clothing, etc. online and have it delivered to their doorsteps via robot.

➔ Robots help drive an agricultural resurgence by working in the fields.

➔ Robots aid in the rapid construction of housing on O'ahu in particular.

various ecological research and restoration projects on and around the other islands.

➔ Hawaii's aerial tours have been completely displaced by sea, air and land robots that offer high definition 3D video broadcasts to tourists who can even pay extra to control them themselves.

➔ Kids use drones to paint graffiti murals remotely!

- ➔ Some people have self-driving cars.

Referring to the points listed above, OR to the seven areas of life you identified in Everyday Life section above:

- ➔ Record a short audio clip recounting a positive example or encounter.
- ➔ Record a short audio clip recounting a negative example or encounter.

In both cases, make it casual, as if you were just discussing a rumor or a story someone else told you with a friend.

In both cases, the person telling the story should be using their very best pidgin so that it really sounds like its coming from Hawaii.

Advanced Social Studies Scenario

Though not addressed in the examples documented in this text, these questions can be used to help students reflect on issues that specifically relate to the intersection of Hawaiian culture and values and contemporary technology and development.

1. Native Intelligence

Based on your personal understanding of indigenous Hawaiian knowledge (whatever extent that may be), reflect on how this knowledge might be used to deal with the challenges of Stormageddon, Pele's Awakening, and Exodus. Is there anything that an application of indigenous knowledge can do now to mitigate the effects of this possible future?

- ➔ Write a short, 200 word, reflective piece.

2. Tragedy

A tragedy occurs: an indigenous Hawaiian is killed by a robot on a restricted Big Island testing ground. It is unclear if the death was caused by a loss of control on the part of the robot's human operator, or if the robot was making its own decisions at the time.

- ➔ What was this Hawaiian's name?
- ➔ What kind of robot was this?
- ➔ What was he or she doing when the event occurred?
- ➔ What was the robot doing when the event occurred?
- ➔ Where did the incident occur?

As a result of this event, pro- and no-robot parties evolve in Hawaii. Confrontations between local people and police or private security occur frequently on the Big Island, but protests pop up all over the state.

- ➔ Take a picture in your neighborhood or school that can be used as the background for a good composite.
- ➔ Find images of people from Hawaii protesting. Make sure that the background can be easily removed in Photoshop.
- ➔ Design two protest signs with appropriate slogans and graphics. One should be "pro-bot" and the other should be "no-bot."