INTRODUCTION: (Rex)

Climatological disasters are irreversible, ungovernable, and ever-lasting. With the rapid increase in Earth's surface temperature, the frequency, severity, complexity, and intensity of drought, wildfire, and glacial lake outbursts are bound to increase. They have the potential to bring destruction to other systems or themselves, as well as the potential to reveal a renewal of a new system.

MODULE 1

DROUGHT (Parker)

Images:
We define Drought as a plane of consistency since it is an entity that moves in all directions, flattening multiplicities to a single plane. Drought is the unformed, unorganized, non-stratified, or stratified body. All of its flows are subatomic and submolecular particles, pure intensities, perpetural free singularities. It is a system governed without rules, capable of deconstructing its subject and material property. Drought wanders in various directions, rather than settling permanently, seeking to capture the striated spaces and depleting them of their identity. This disaster is not bounded by space, terrain, or time. It is not bounded by political boundaries nor have social or economic consideration.

Smooth vs. Striated:
Drought operates by capturing spaces through vectors of deterritorialization in perpetual motion. There is an intensity of the battle between the two, which provides consistent variation in the landscape as it is always being manipulated. As the intensity of drought increases, the landscape transforms into a paradox to what it was before. It no longer becomes a secondary characteristic to itself but a copy in another language. As time progresses, this war machine claims space by acting as a system, a singular mass moving across the landscape. It is its own body that acts without borders, intensities that make up a large system of destruction.

Go Sketches:
The smooth vs striated is like the game of go. Its the constant battle of one space capturing the other. “Nomad space is "smooth," or open-ended. One can rise up at any point and move to any other. Its mode of distribution is the nomos: arraying oneself in an open space, as opposed to the logos of entrenching oneself in a closed space.

WILDFIRE (Sitong)

Images:
Wildfire is a movement of deterritorialization. It is an entity that engulfs other systems, a molar function that consumes the other. As this system devours a landscape, it leaves behind traces of its line of flight. These traces become a tool for renewal, an opportunity for another system to redefine the landscape. The intensity of wildfire is caused and influenced by components of other systems. These components cause the deterrortization of a landscape and give the authorization to capture spaces, allowing the ability to reform a system. Within this process, new landscapes emerge, and new systems are formed.

Smooth vs. Striated:
Wildfire structure itself as a nomadic system, continuously seeking to capture the next space. It captures space regardless of scale and bureaucracy and progressively manipulates the landscape as it advances. It will continue to grow until deferred by the reprisal of a striated system, generating a constant clash between the logos and nomos.As the wildfire intensifies, it becomes a larger body. The larger it grows, the more uncontrollable it ceases to be. The more striated space it captures, the more it defines itself as a war machine.

Go Sketches:
Wildfire is like a rhizome, a complex, nonlinear, and non-stationary decentralized network system. Each vector of deterritorialization looks for a direction of capture to move from one point to another. Intensity can be determined by materiality; the richer the landscape, the more resources it can utilize for pathways to grow. A new nomadic potential emerges that allows it to become a system of continuous variation, a war machine that never settles.

GLACIAL LAKE OUTBURSTS (Rex)

Images:
A Glacial Lake outburst is a body without organs. As a glacier begins to melt and change its form, it begins to reveal itself as an alternative identity separate from its genesis. These changes in identity separate it from its origin, and become a body unbounded as a rhizome. It is unpredictable, populated by intensities that flow in all directions. It begins to unscape the landscape, revealing what was once hidden and buried.

Smooth vs. Striated:
GLO is a war machine that is attracted by striated space while also being bounded by it. These boundaries, to an extent, govern its movement and invite it with open arms to destroy specific regions in its path. Prior to the change of materiality, it's difficult for the body to have its own line of flight because the system is striated. It is contained, yet it's constantly looking for breaking points, a release from the body. When it's released from the body, its movement becomes more dynamic, perpetual, and unpredictable, thus becoming a war machine.

Go Sketches:
Glacier lake outburst affects the larger system as a whole as well as other surrounding systems. The change in materiality reflects the change in landscape. Every vector represented on the map influences the other. These large molecules move through space, creating a shockwave-like effect on their surroundings as if the disaster causes the landscape to unzip itself and reveal its past. When this system truly becomes a body without organs, it captures the striated space perpetually and unexpectedly. It breaks down its target into fragments, carrying and using them for further destruction. It dismantles the landscape using their own components as a war machine that destroys systems with the system itself.

MODULE 2

Title Slide: (Parker)
To further understand the destruction of these disasters and their relationship to the city, we defined territorial boundaries that contain various scales of urban landscapes. This framework of analysis showcases how these disasters behave when deterritorializing and sieging the striated.

Drought 1: 10,000 Drawings: (Parker)
This analysis showcases how drought captures the urban landscape of Pierre, South Dakota. It defines a relationship between radiation and hydrology, breaking down the infrastructure of Pierre's water distribution system. As the heatwave of drought enters the city, perpetually moving with increasing intensity, it drains the water infrastructure from its source. These pipes begin to act as a body without organs, arteries that expand and contract to absorb and maintain substantial amounts of water flow. Surrounding bodies of water and reservoirs become alarmingly depleted, revealing new landscapes that were once hidden. The intensity of these reactions reflects the demands each portion of the city acquires, causing failures and, ultimately, a deterritorialization of hydraulic infrastructure.

Wildfire 1: 10,000 Drawings: (Sitong)
As wildfire began to capture the urban landscape of Blaine, MN, it became a war machine of continuous growth, expanding from its origin point and harvesting resources along its line of flight. This disaster is a storm of vectors that thrust out and jump from one point to the next, seeking to grow by the richness of materiality. As this body continues to grow, it leaves a trail of a new nutritious landscape that can be used to reterritorializing this urban infrastructure.

Glacial Lake Outburst 1: 10,000 Drawings: (Rex)
In order to demonstrate how the glacial lake outburst is becoming a war machine and sieging the city using its own fragments, these drawings showcase the moment of arrival, besieging, and the aftermath of the event. As it arrived at the edge of this city in Nepal, this war machine tears through the resistance of striated space. It began to move as a body without organs that snatches components from the different systems along its path and weaponizing them for capturing and reterritorializing the landscape. The fragment of the city is also being used against itself, dismantling and demolishing other components of the urban landscape. However, these weaponized pieces can also be seen as a gift. When the flooding is weakened over time, the fragments that it carried can be used as materials for reconstructing the city.

Country Scale (Parker)
These next stages of our project focuses on the analysis of the climatological disaster of drought.

To further our understanding of how drought acts as a war machine, we have continued to analyze its movement at various scales. Looking at its movement on a national scale, it has no clear indication of where it may be moving next or moving towards, acting as a body without organs. Its intensity and area of effect are unpredictable, creating a dynamic visual abstraction of its movement.

State Scale: (Parker)
Similar to our discoveries found on a national scale, a state scale shows similar dynamic gestures that are unpredictable and perpetual. More details are revealed by analyzing this smaller scale, illustrating its effect on the various bodies of water that run through the state of South Dakota. As drought intensifies, it reveals the hydraulic landscape while also depleting of its resource.

Indigenous Research:

- **Introduction (Sitong):** Researching the history of our site, we studied the architecture of indigenous tribes that once occupied this landscape. The Sioux tribe predominantly occupied the location of our site and nearby areas. They are nomadic tribes that move based on their environment and resource availability.

- **Earth (Sitong):** This tribe would build tipi in formations, and all the entrances are facing toward the east to gather energies from the morning sun. They would be dug around the tipi as a water channel and foundations.

- **Air (Rex):** Their architecture considered methods of air ventilation of, cooling, and heating in different seasons. The facades of these structures were designed to easily create openings that can be strategically placed to promote air circulation. Redirecting air flow is considered in these structures as they would create an envelope around their

tipis that would consist of a material able to block winds from areas they wanted to make habitable.

- **Water (Rex):** Each of their housing structures contained a lining that was able to direct and harvest rainwater from a slopped facade system. They would also capture water from morning dew through an exterior lining that similarly directed it into a storage system.

- **Fire (Rex):** This tribe understood the methods of being able to control and obtain heat. They would typically place fires within the interior of their homes and could contain this heat by adjusting their facade system. The system is highly adaptable depending on the season, as they would enclose their structure to contain heat during the winter and open up the structure to release heat during the summer months.

Strata Map: (Parker)

Within our first proposal of a semi-nomadic city, we began by analyzing the topography, air direction, intensity of water flow, and radiation of our site to help determine principles for multiple placements of organisms that become components of our city during different environments.

Fire: (Parker)
The organisms incorporate ideologies from our research and systems that could allow for nomadic movement. Our fire organisms expand and contract depending on the season and changes in radiation. The main structure is connected to a large floating device that controls the amount of radiation they want to harvest. During the summer months, our fire organisms would expand to provide shade and reduce the amount of radiation they require. As it shifts to the colder winter months, the floating structures shrink and contract to allow more sunlight and radiation to be gathered.

Water: (Sitong)
Our water organisms are nomadic structures that harvest rainwater and morning dew through a series of curved surfaces. They provide secondary protection from harsh winds, and curve based on predominant wind flows of each season. They are placed along areas of high water flow where water could naturally flow towards.

Earth: (Sitong)
Our earth organisms are static structures that call back to the practice of indigenous tribes digging and creating mounts for water storage and transportation. The channels created from these mounts as well as the central mound fill with water that were harvested from our water organisms. As these organisms grow in scale, they can store more quantities of water and create a network of channels that transport water in the city.

Air (Rex):
The design of our air organisms creates a static system consisting of coniferous and deciduous trees that redirect airflow and adapts to seasonal changes. The coniferous trees maintain their density during colder months, and the deciduous trees maintain their density in foliage during warmer months. The organisms create assemblies of a ventilation system that creates wind blockages and forms breezy corridors to promote air circulation.

36” x 36” (Rex):
These initial iterations demonstrate the integration of these static and nomadic organisms in a semi-nomadic city. The organization of these organisms helps reduce radiation and allows cold air to breeze through the city. In the winter formation, these organisms work together as a system to reduce the amount of cold winds passing through. These organisms are performing a dance that tests how they could mount and demount their city to be able to adapt to a larger migration path that follows seasonal drought intensities.

MODULE 3

Title slide: (Parker)
Moving into the next phase, we aimed to achieve true nomadism by applying these principles of placements along a larger migration path. We defined four of many sites along a path that is formed by seasonal change, radiation intensity, and magnitude of water flow. Along this path we have detailed how our organisms would arrive, settle, and depart.

Summer city and path: (Rex)
The path begins in Pierre City, South Dakota, where the nomads would gather materials from their surroundings and prepare for their migration. This site is located next to the Missouri River, surrounded by mountainous terrain. Our organisms are placed in a tight circular grid that revolves around a creek linked to the river. Water can be quickly distributed within this close grid. The floating structures of our fire organisms expand during these warmer months, merging together to create a large shaded settlement. Air flow is redirected through breezy corridors placed parallel to the southern summer winds, creating areas of high wind intensity to cool down the city.

Fall city and path: (Sitong)
Transitioning into the fall season, the city is migrating in an effort to avoid higher degrees of drought intensity and seek areas of high water flow. As they settle, they create their city grid from their point of arrival in a semi-circular formation. The organisms are placed tighter along the lake for easy water access and spread out as they expand outwards. The floating structures begin to shrink in size as temperature decreases to allow for more radiation to be absorbed. The cool North East wind is redirected or blocked by the ventilation assembly our air organisms to reduce wind intensity.

Winter city and Path: (Parker)
As temperature drops and drought severity increases, the city is compelled to move to a new location along the path consisting of high water flow. The half-circular city grid is influenced by the topography of the site and revolves around a large body of water. As winter freezes the surface of the water, the nomads can obtain resources for food through ice fishing and collect water by constructing ice mounds. In an effort to block cold northern winds, natural vegetation is planted perpendicularly, reducing airflow. To allow large amounts of radiation to be absorbed, the floating structures within the city would shrink in size.

Spring City and Path: (Rex)
As nature begins to revive after the winter months and become relieved from drought, the city loops back towards its origin point and seeks areas of lower levels of water flow. Winds coming from the southwest are recirculated to create a comfortable breeze. The grid revolves around both sides of the river, manipulated by topography in a circular formation. As temperature rises, the floating structures slowly expand to block the increasing intensity of radiation.

Final path slides: (Sitong)
This is a path that is influenced by seasonal drought, a continuous cycle of this nomadic city. Within each pass through this cycle, they have the opportunity to continue to refine, develop, and expand the sites they have established, creating a series of conditional cities.

EAFW Matrix: (Parker)
As these organisms overlap, they create explosions of connections, creating a complex matrix that continues to embrace oncoming waves of drought.

> **Earth and Earth: (Parker)**
> When earth mounds collide, their inner ring merge into channels creating a larger system of water storage.
>
> **Earth and Air: (Parker)**
> As mounds and trees collide, they form hydraulic infrastructure that is able to filter water while continuing to alter and block wind directions.
>
> **Earth and Water: (Parker)**
> Our water organisms merge with the earth mounds to create a larger system of water storage, a series of reservoirs within the city.
>
> **Earth and Fire: (Rex)**
> Water is able to be transported along with the city as it migrates when earth and fire organisms merge, creating water tanks that are carried by the floating structures. They become a seasonal timer, lifting out of the ground, indicating the cities phase of departure.

Air and Air: (Rex)
When our air organism is combined, our ventilation assembly is improved by multiplying the mass of the structure, becoming more efficient in reducing and redirecting airflow.

Fire and Air: (Rex)
Airflow is further addressed within the facade of our fire structures that is created by the combination with our air organisms. When the trees are within close proximity, the fire structure reaches out to form a partition, opened against wind flow.

Water and Air: (Rex)
The sheets of our water organisms expand outwards, wrapping around trees within close proximity, creating a microclimate that enhances their growth and protects them from various conditions.

Fire and Fire: (Sitong)
Depending on seasonal radiation changes, as the floating structures within our fire organisms expand and merge, they combine and increase in surface area, thus increasing blockage from radiation.

Fire and Water: (Sitong)
When the floating structures merge with the sheets of the water organisms, the sheets would be lifted up, creating passageways that increase circulation and airflow throughout the city.

Water and Water: (Sitong)
Systems of our water structure combine through an organic connection that increases the surface area of the water that's able to be harvested.

Axonometric / Sectional Territorialization:

Summer: (Parker)

Zooming into our summer city, all of the organisms clash together, creating a complex matrix of connections. This is displaying how the city would react to disaster and perform a dance that embraces the drought condition. All the organisms are working together to create a system focused on hydrology and the reduction of radiation.

(Rex)
Our summer city contains an underground water filtration system that can distribute water throughout the city. This section shows how water being stored within the reservoirs is dispersed, creating series of wells within the fire structures for easy water access. The density of the city determines the amount of sunlight able to enter, creating shading and protecting the community below.

(Sitong)

We imagine these nomadic structures traveling across a drought intense terrain by having their structures fold up and be carried by floating devices. People can pull and guide these structures, leaving a trail behind as they travel. They would follow the trails left behind from previous cycles, leading them towards the city. Once they arrive, the floating devices help drop the structures into the ground and unfold them into living quarters. As they continue to settle, they create a shaded atmosphere, diffusing light through cavities within a veil towering over the city.

Winter: (Parker)

Our developed winter city creates a system that absorbs radiation by expanding the city grid and reducing the size of the floating structures. It reduces cold winds by placing natural vegetation that can maintain its density during winter months, and water organisms perpendicular to air flow. These semi-transparent sheets create a skin and a protective barrier around the city, reducing damage from environmental conditons and glare from the sun. The frozen body of water is utilized for harvesting food resources through ice fishing.

(Rex)

As one approaches the city, they are greeted by a grided arrangement of structures. The snow reveals the trails of the migration, serving as guidance and encourages the expansion of joining nomads. The interior of the city contains large open spaces, creating atmospheres of vast thresholds. As the city continues to grow, it will continue to expand in this manner, becoming resilient to seasonal and drought intensities.

Animation (model images):

(Sitong)

Climatological disasters are irreversible processes, multi-scale atmospheric phenomena that can affect our environment intra-seasonally unbounded by time. As global temperatures rise, the frequency, severity, complexity, and intensity of drought are expected to increase.

(Parker)

Our proposal responds to varying degrees of radiation through nomadic notions of creating routes of established settlement patterns dependent upon the intensity of drought through different seasons. Our city creates a complex matrix in a disastrous landscape, a performative dance that uses hydrologic infrastructures to achieve a post-disaster city resilient to climate change. A city can become a body with organs, disposed of stratification, formed by assemblies of various systems. It becomes a diversity that sails within a plane of consistency, unraveling the landscape, creating cavities of sanctuary.