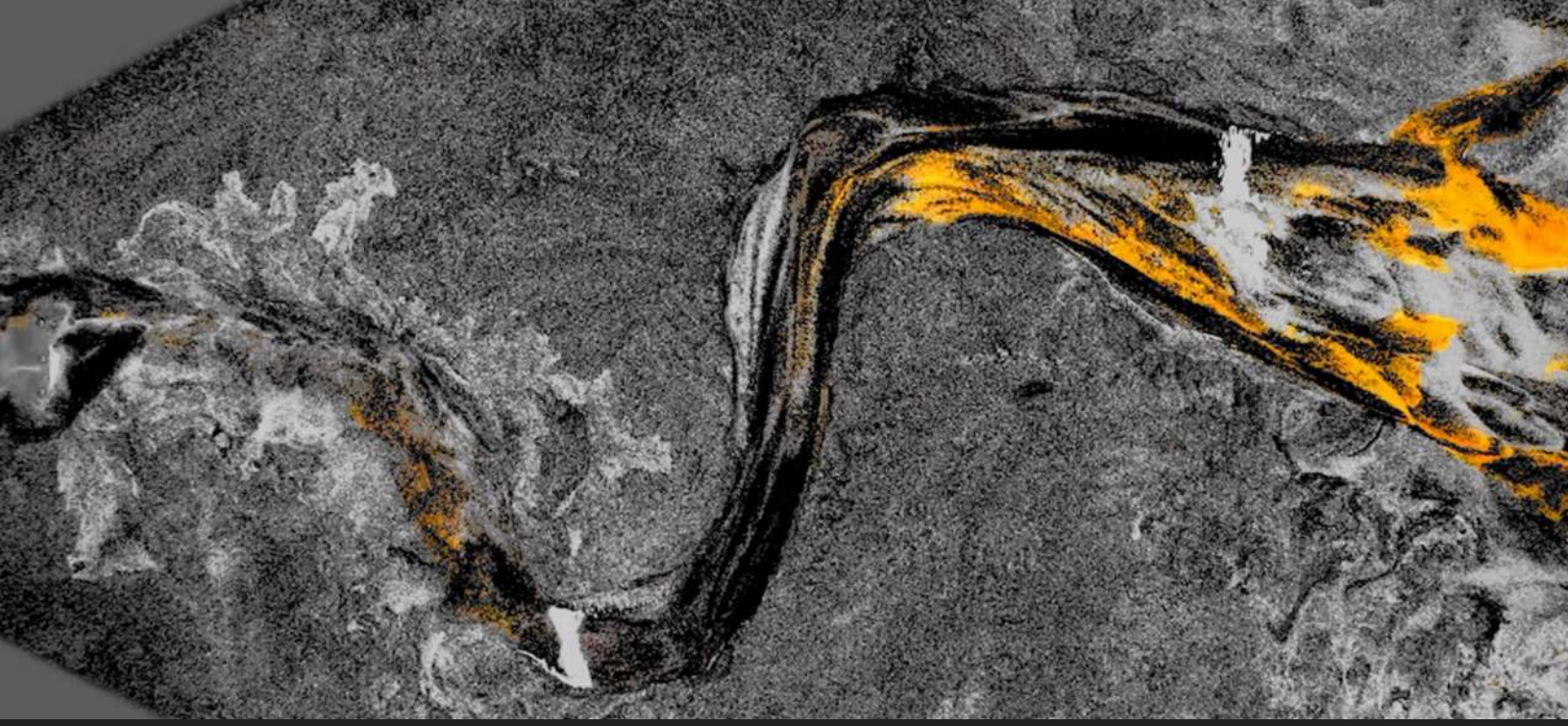


Module II: Systems, Models, Surrogates

prompts . narratives . behaviors

department of landscape architecture

LAR 7020 Foundation Studio IV . Spring 2025

Schedule

Launch: Tuesday, February 1th

Review: Thursday, March 6th

Image by Cotterman, Tse, Zhang

In Module II, you will develop an experimental and iterative methodology for testing prototypical interventions and projected scenarios.

Breaking Down the Complexity . Strategy and System Diagramming

In the first exercise in this module, your team will begin to identify issues in your research that may be approached through the discipline of landscape architecture. Essential to this effort will be to examine issues at a variety of scales from the molecule to the territory, from local government to geopolitics, from the raindrop to global climate. As you define the issues you will take an open stance, this is an exercise to understand how to approach and break down complex problems and does not need to be the exact issues you will continue to work with, although it may be as well. Each project currently encompasses a multitude of issues that can be addressed, for this exercise we will take two issues and unpack them using a variety of strategies from engineering and design.

We will work together in studio to explore how to define the issue and how different approaches may yield a range of outcomes. Each team will use the list of techniques and will utilize different approaches for each issue that is identified. The outcome should then be used to illustrate and explain the issue visually.

Examples of Techniques

1. SWOT (Strengths, Weaknesses, Opportunities, Threats)
2. Input / Output
3. Scale Diagrams _ if:then
4. What does my "client / stakeholder" want or care about? … what is it they need?
5. First Principles
6. Comparative Matrix
7. Critical Success Factors
8. Systems: Point of Connection, Network Flows, Resources, Users/Uses
9. Circular Economy
10. Identify current knowledge within views or photos and mapping or aerials
11. 1:3:1 … 1 challenge, three viable options, one recommendation
12. The anti-solution approach

Each team will present their work at the start of studio on Thursday, February 13th.

Deliverables (Diagramming)

DUE Thursday February 13th, new Atlas pages containing the definition of two issues that are important to your research, at a minimum each issue should have:

- an introduction to the issue, context, variables, etc.
- a definition of the issue/problem/opportunity
- multiple slides utilizing one of the techniques to break down and define the problem
- summary of the issue, opportunities and constraints, actors, etc that come out of the techniques you utilized.

The Atlas pages should also contain a summary that compares the techniques and how you believe it effects the outcome/strategy.

The pages should primarily be visual information, diagrams, maps, and drawings with a minimal use of text.

Narrating the Opportunities. Prompts, Models, and Patterns

In the second part of this module, it is designed to introduce tools that explore image creation, pattern, and simulation. Each team has a solid base of research and has identified strategies to a range of issues. Using this as a backdrop, each team will develop a narrative that expresses a relationship between actors/agents. The relationship should be expressed in the narrative and is likely multivariate across multiple actors. The narrative will be represented through a range of outputs (video, views, measured drawings, ae rial imagery, models).

> *2.a. An account of a series of events, facts, etc., given in order and with the establishing of connections between them; a narration, a story, an account.*

2.c. In structuralist and post-structuralist theory: a representation of a history, biography, process, etc., in which a sequence of events has been constructed into a story in accordance with a particular ideology; esp. in grand narrative noun [after French grand récit] a story or representation used to give an explanatory or justificatory account of a society, period, etc.

Based on the two definitions above think of the narrative as an account that expresses a specific time period (past, present, future) and is a "representation of a history, process, …" or speculative future. Thematically the relationship expressed in the narrative should probe the question of landscape experiments broadly and answer the following questions.

- What does it mean to propose a landscape experiment?
- Are there specific goals to the experiment and how does it generate new knowledge and/or relations?
- How would an experiment change a landscape?
- In a rapidly changing landscape where is anthropogenic control necessary and when do humans relinquish their control for the autonomy of other agents/lives?
- How might control and autonomy not be framed as a binary but as a gradient or hybrid?
- What might an experimental landscape look like and who would be impacted?

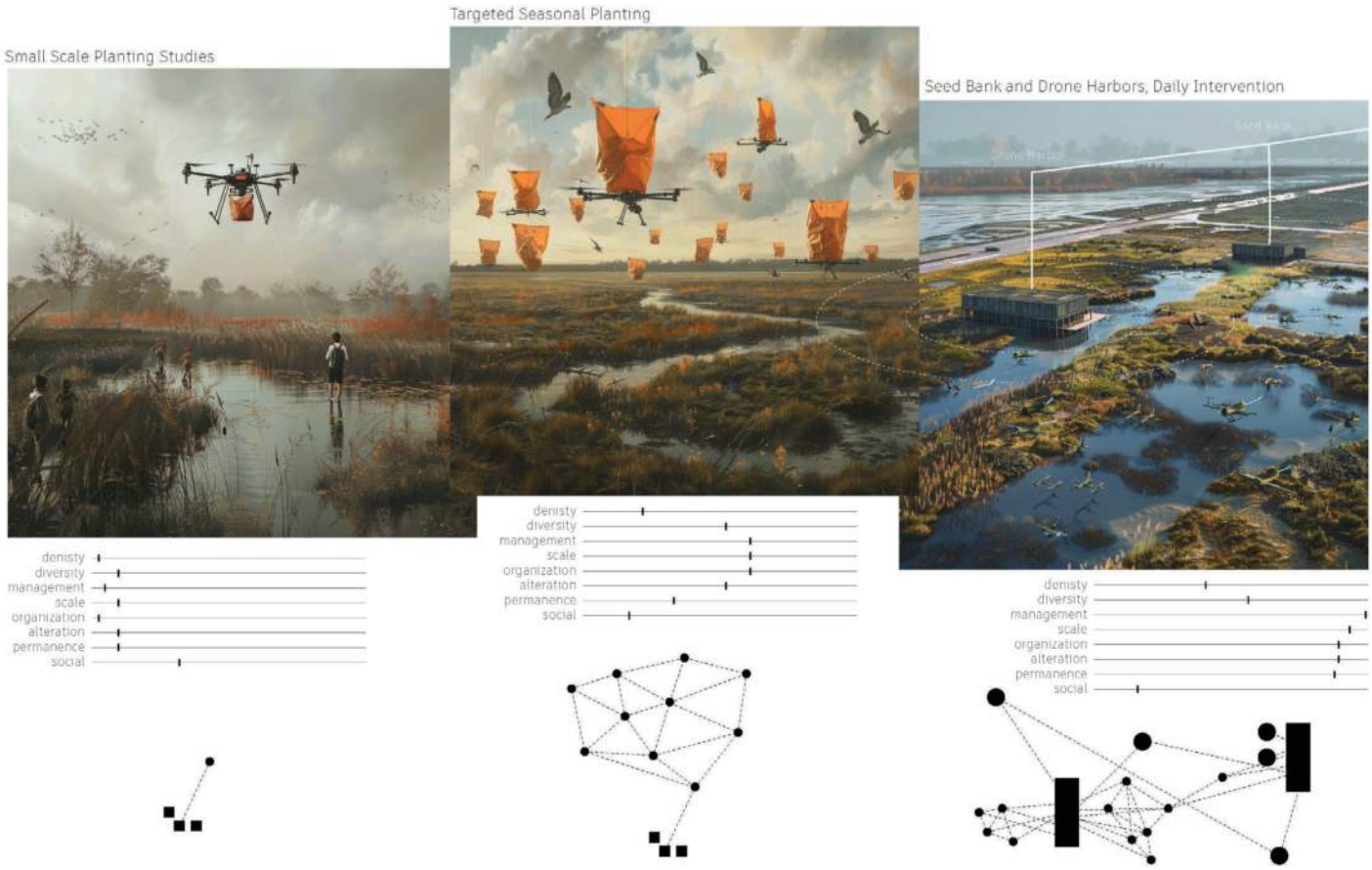


Image by Davies, Nueslein, Devine

From the syllabus:

> *The Chesapeake Bay will serve as our subject for the studio with a focus on the coastal landscapes and islands of the Pocomoke Sound. To address a dynamic and rapidly changing climate we will speculate on the role of the landscape as an experimental ground, a place for ongoing research and knowledge production. As a testing ground, the landscape will serve to produce experiments that begin to identify physiological, relational, and biochemical thresholds that drive ecological responses to climatic shifts. Within these experiments it is possible to highlight the causes and effects of species to future conditions, a precursor, a curated canary in a coal mine, that can guide the evolution of mitigation strategies. With the landscape performing as a model, it is also possible to employ physical and numerical modeling to assess effects of climate change across broader temporal scales to develop management strategies and engagement protocols. Through the production of landscapes that extend beyond the predicted and historical ranges of current environmental expressions it is possible to gauge the effectiveness of living infrastructures for climate mitigation.*

The primary tools that will be introduced are utilizing Generative AI to generate images and video. Physical simulation will be introduced using the geomorphology table for typological modeling of geomorphological tropes highlighting sediment deposition, wave generation, and river/delta formation.

Embedded in this module is an exercise in how we attribute the outcomes of Generative AI models. Each team is asked to create a way of citing their work that recognizes the essential elements necessary to attribute a Generative AI model. Is it possible to extend or modify existing citation formats? Keep in mind that it will be important to recognize the tool and its authors/developers as well as the intellectual property of images/content that trained the model.



Image by Neal, Hubbard, Werman

Modeling Procedures

We are referring to this as the live model. This term is simply to emphasize that it is a model, a medium that has some theoretical relationship to your landscape, and that it is live, or responsive (it is not necessary that it be three-dimensional, though it will necessarily involve time). You can interact with it and it will behave, not necessarily in a preordained or already-predicted way (if you already could predict its behavior due to other means, then it is only a demonstration, a rhetorical device not useful for experimentation). These models may not look anything like the image of your landscape. Think of these as landscape prototypes, similar to your landscape through affinity with a key process, part, material, or effect.

Development of the live models should consider not just the techniques, concepts (such as scale), and apparatus used in the creation of the model, but also how the results and insight of this work is represented, analyzed, and linked to conventional modes of landscape architectural work such as section drawings, maps, modes of fieldwork, etc or used to engage others (it has an audience). The live model should function as a design tool that helps you test, observe, and record landscape effects. These can be systemic, temporal, material, aesthetic, or a hybrid undertaking. It is critical that you think carefully about intentions (not necessarily causes) and effects.

This mode of working has a long history in the design fields, proving effective for some of the most significant work in the history of landscape, architecture, and civil engineering. Live models have a lot in common with what Catherine Dee describes simply as drawing. It enables play, probing, and simulation as described by Matthijs Kouw. One of the reasons that live modeling employed as a design tool is not always practiced despite being proven is that it is slow. It takes a lot of time, and so when objectives and questions can be similarly pursued and curiosities satisfied through faster modes such as a section, it is usually not a good choice. However, slowness can be its own value, forcing the designers to work in intuitive and inquisitive ways that use logics other than deduction. Fundamental characteristics of landscape such as gravity, time, and water that can get assumed away or taken for granted in other, faster modes, can be made immanent in a live model, present in a design process, bringing basic and surprising revelations.

Site is very often important in landscape design, and it is in this project. However, you should consider the model its own site, not an analog of a "real" site in the world. Your model has its own logic, history, and epistemology and need not be analogous to some place in the Chesapeake Bay. It should, however, have certain affinities that enable you to draw relevant insight into the material, aesthetic, historical, ecological functions, forms, processes, and qualities of a landscape in the Bay that you care about.

In developing module II, you must consider not only your live model but the way you will interact with it, observe the effects of these interactions, and record your observations and the questions that arise. Your recordings should build on the skills you have gained in other course work, including measured drawings, calculations, video and animations, and point clouds. You must create these representations from your work with the live model to analyze them, make them meaningful, and articulate how you will link up these insights to conventional modes of landscape architecture design work. For instance, you might work on the water table, creating a fluid topography that you capture with video and at critical junctures you might drain the table and do photogrammetry to create a point cloud that you analyze for slope or elevation. Finally, you should also

consider how others will engage it. Will your audience interact with the model itself, or with the representations produced from it? What do you hope they might get from it? Who is your audience, and how does the model communicate with them?

Be careful in your default assumptions, such as which concepts are appropriate (scale, for instance, may not be) and use abstraction to focus on specific aspects or phenomenon of your landscape. Always ask "how can this model let me understand effects?" In other words, the intent of the live model is not so much to create a descriptive simulation (though that is one possible path) but rather to provoke speculation and ideation as well as creating a compelling format for communicating novel ideas and complex strategies.

That said, your chosen live modeling approach should be understood within a broader context which is aware of the history and past applications of this technique (precedent models), pros/cons (successes and failures of this technique), and novel approaches. Namely:

- What questions are being asked, and how are they tested via the modeling strategy?
- How do certain techniques focus the outcomes, and how do others expand outcomes?
- How does the model compliment your prior work and other modes of work?
- How are you engaging the model, producing and recording differences or effects?
- What representations are you making from the model to subject to analysis and make meaningful as part of a larger study.
- What range of modifications do the prototypes test? What is the scale, scope, complexity of the modifications?

Live Modeling Techniques

The following list of live modeling techniques is meant to be suggestive rather than restrictive. Groups may work with one or more techniques from this list or develop their own hybrid or alternate techniques. Think carefully about your medium, the role of devices that register and that change things.

- Digital projection (e.g. projecting maps and animations onto the physical model)
- Sculpting (taking away)
- Aggregating (piling up small things according to the flow of some other medium or logic)
- Printing (applying a medium to a surface through a device)
- Tectonic modeling (this is close to typical architectural modeling, when large parts come together to form a unified figure); rib models are a good example
- Sensing (attaching sensors to the model and testing in different environments/simulations), visualization of data
- Stop-motion photography (using the model as the basis for analog stop-motion animation)
- Casting (creating a negative form in another medium that is easier to work)
- Chemical processes (Burning, acid etching, compound reactions, etc.)

- Physical processes (Etching, carving, weathering, decay, etc.)
- Hydrological drawing (e.g. working with water or other fluids to test various landforming operations)

Deliverables (Review and Atlas Update)

The description of each deliverable outlined below is intended as a general guideline—the specific format and contents of each deliverable should be developed in teams during desk crits. The following list of deliverables outlines minimum requirements for satisfactory completion of this module. Additional output is strongly encouraged.

- Precedent analysis of (3) live models in a design field; format to the Atlas pages
- Technical documentation of modeling process, an "instructional guide" using diagrams to document techniques, including process photos; format to Atlas Pages
- Representations of intervention prototypes (5-10 of each), including some form of qualitative or quantitative analysis; should include technical drawings/diagrams and site drawings (plans/sections) illustrating how the prototype engages the landscape/site
- Speculative drawings of landscape alterations in plan and section for at least (3) situations within your site and/or in the Chesapeake Bay.
- A visual narrative that explores an approach to landscape experiments.
- Incorporation of content into an updated version of the Atlas

Objectives

1. Break down complex landscape issues into component parts using various analytical techniques such as SWOT, input/output diagrams, and system mapping.
2. Understand how different scales—molecular to territorial, local to geopolitical—interact within a landscape context.
3. To become familiar with Generative AI Tools and physical simulation.
4. Create hybrid representations that incorporate Generative AI tools with known workflows.
5. Develop an understanding of landscape experiments as highly specific interventions and as extensible typologies simultaneously.
6. Explain an approach to landscape experiments as a visual narrative.
7. Use live modeling techniques to test, observe, and analyze landscape processes and interventions.
8. Evaluate and compare different modeling techniques for their effectiveness in representing and analyzing landscape dynamics.

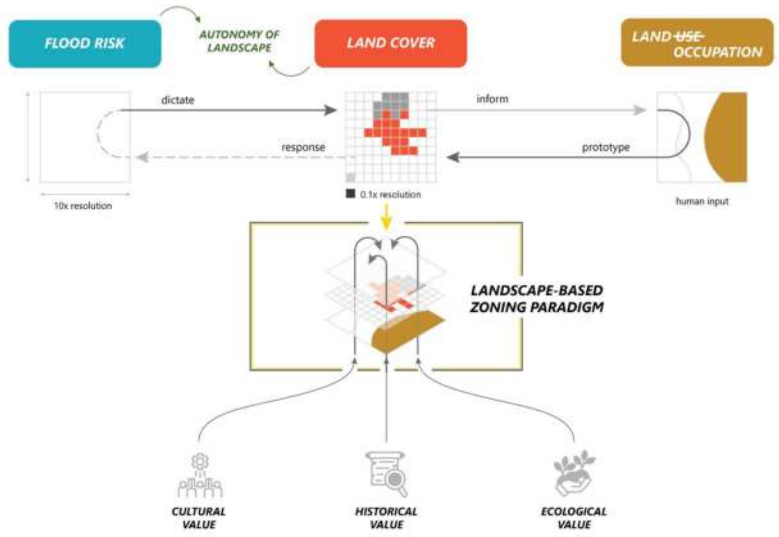


Image by Fong, Velazquez, MacNelly

Module II Schedule

Wk05	*2/11*	*T*	*1230-1700*	*Module II Introduction* *Workshop: System Diagrams*
Wk05	*2/13*	*Th*	*1230-1700*	*Lecture: On Models* *Workshop: Geomorphology Table Primer*
Wk06	*2/18*	*T*	*1230-1700*	*Machine Learning and AI Lecture* *Workshop: Generative AI Tools*
Wk06	*2/20*	*Th*	*1230-1700*	*Pin-up (peer review)*
Wk07	*2/25*	*T*	*1230-1700*	*Desk Crits*
Wk07	*2/27*	*Th*	*1230-1330*	*Hindle Lecture: Patents and Innovation*
			1330-1700	*Desk Crits*
Wk08	*3/04*	*T*	*1230-1700*	*Desk Crits*
Wk08	*3/06*	*Th*	*1230-1700*	*Module II Review*

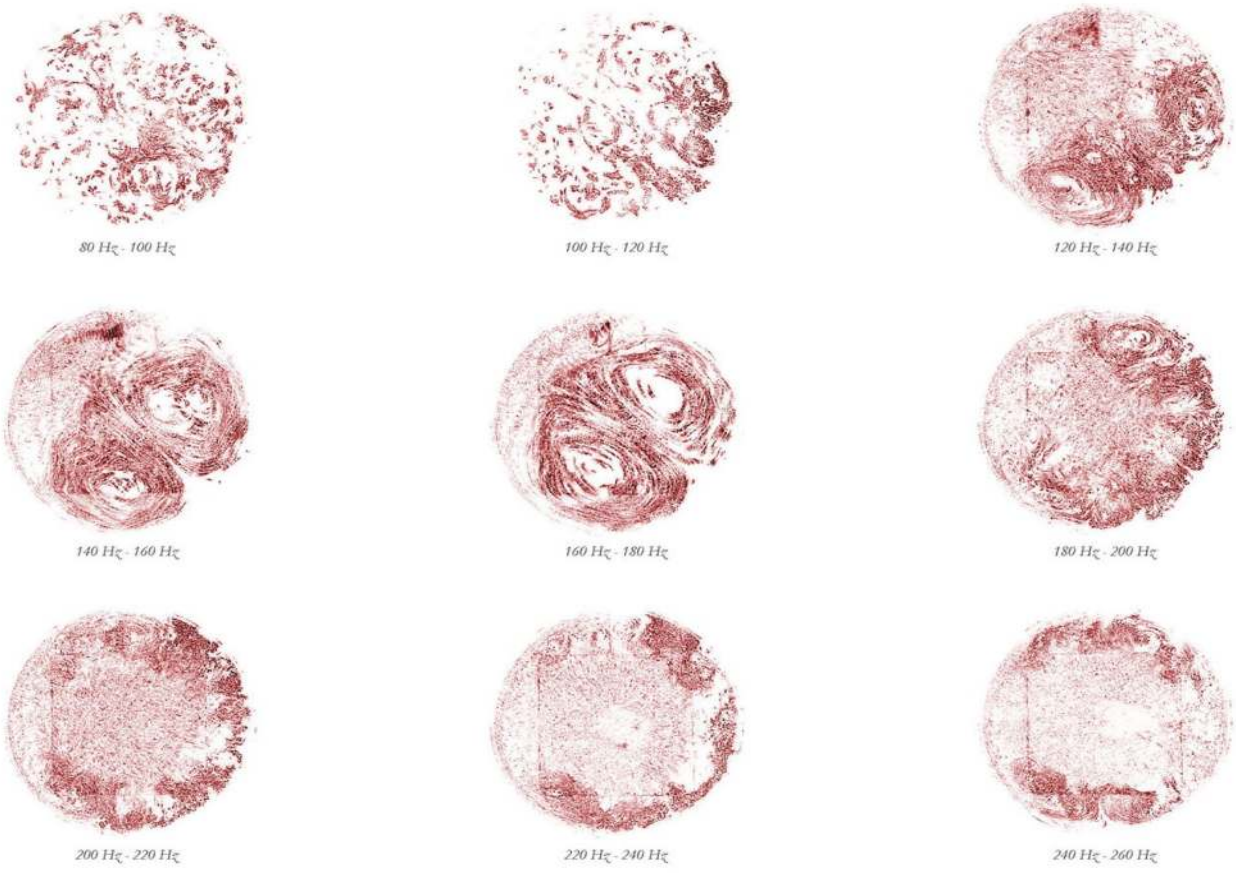


Image by Ricardo Jnani Gonzales and Bradley Cantrell

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