

Gustavo Rincon PhD Proposal Presentation

Date: March 18th, Monday @ 10:30 AM

Place: Elings 2003 , MAT Conference Room

Dissertation Committee:

JoAnn Kuchera-Morin (Co-Chair)

Marcos Novak (Co-Chair)

Marko Peljhan

Title:

Shaping Spaces - Creating New Media Architectures in Actual and Virtual Environments using Self Organizing Systems & Worldmaking Poetics

Abstract:

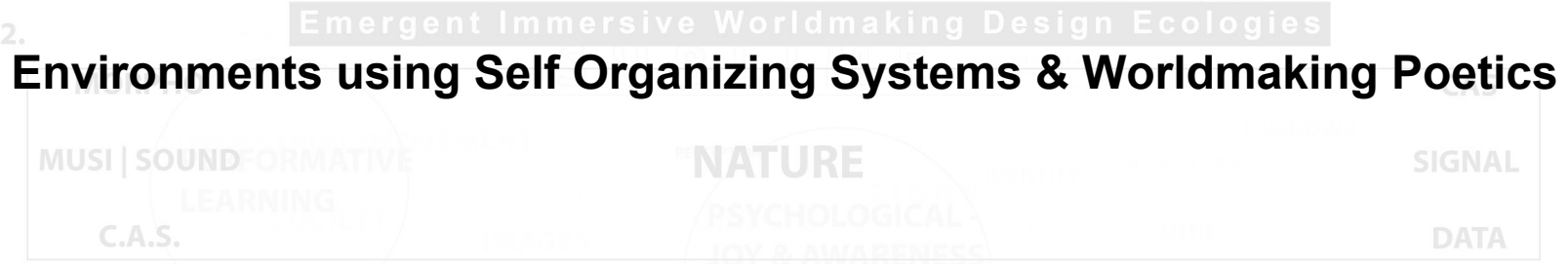
This dissertation is an investigation through practice of an architectural research framework for the conceptual media artist to use agent-based behavior as techne for generating patterns, forms, and structure that unfold emerging virtual worlds. Focusing on agent-based behaviors of Self Organizing Systems from a spatial perspective, a study of patterns and forms will be undertaken for creating generative media artworks. In a series of studies a hybrid methodology of Architectural Media ArtWorks will be presented as prototypes. The works demonstrates an exploration of space as a series of complex networks of behaviors, two dimensional studies, three dimensional object studies, and immersive spatial studies that present emergent spatial constructs.

1.

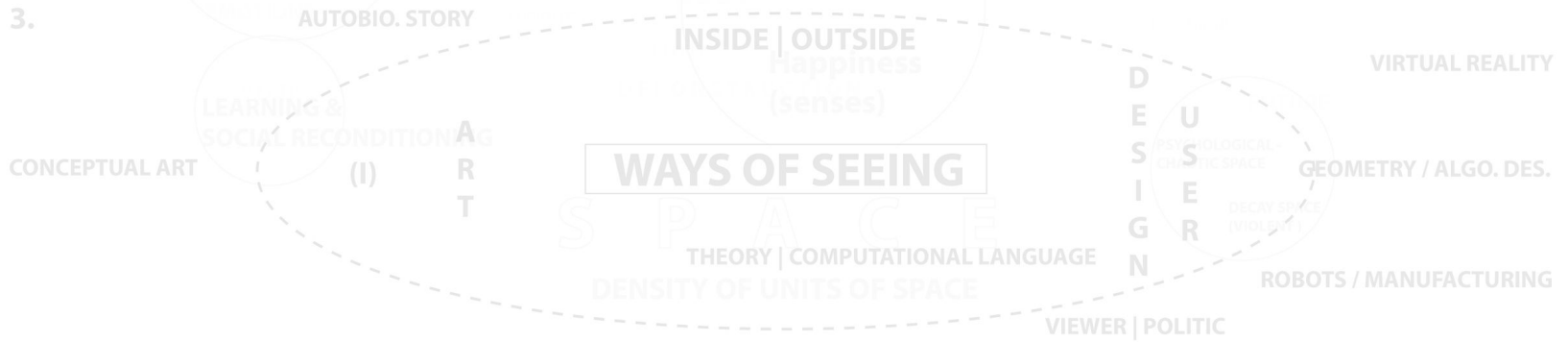


Shaping Spaces - Creating New Media Architectures in Actual and Virtual

2.



3.



Quote(s):

δοκεῖ δὲ αὐτῷ τάδε· ἀρχὰς εἶναι τῶν ὄλων ἀτόμους καὶ κενόν, τὰ δ' ἄλλα πάντα νενομίσθαι [δοξάζεσθαι].

(Diogenes Laërtius, *Democritus*, Vol. IX, 44)

The first principles of the universe are atoms and empty space; everything else is merely thought to exist. (trans. by Robert Drew Hicks 1925)

Nequeunt oculis rerum primordia cerni.

The first beginnings of things cannot be distinguished by the eye.

De Rerum Natura (On the Nature of Things) by Titus Lucretius Carus

Space as a Network So could this be what space is made of? In traditional physics—and General Relativity—one doesn't think of space as being “made of” anything. ...

Stephen Wolfram, What is Spacetime, Realy? 12.02.2015

A liquid architecture, an architecture of relations, an architecture in which the final built object is wrested from an infinite continuum of possible variations by the assignment of particular values to variables that govern its internal structures. The creation of systems of relationships and the assignment of specific values becomes the foreground of the architects activity and invention.

Marcos Novak, Computational Composition in Architecture. 1988

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0.1. Terms of the Dissertation

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4.2. Prototypes: Art Object Studies - Analog to Digital

4.3. Prototypes: Virtual World(s)

4.4. New Media Architectures: Instrument Design & Engineering w/ Content

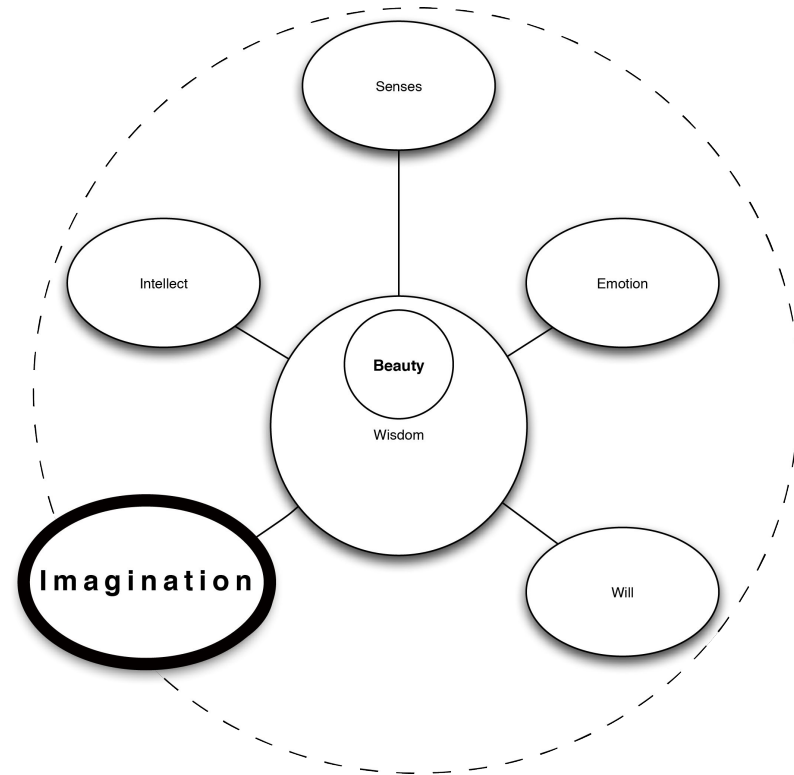
V. A New Media Architectures Installation

VI. Conclusion(s)

VII. Future Directions

Thank You!

Questions?



Marcos Novak

0. Abstract: What?

An overall description of research - (Background - Upfront: Introduction || Middle Ground: History || Foreground: Methodology & Implementation)

This dissertation is an investigation through practice of an architectural research framework for the conceptual media artist to use agent-based behavior as techne for generating patterns, forms, and structure that unfold emerging virtual worlds. Focusing on agent-based behaviors of Self organizing Systems from a spatial perspective, a study of patterns and forms will be undertaken for creating generative media artworks. In a series of studies a hybrid methodology of Architectural Media ArtWorks will be presented as prototypes. Exploring space as a series of complex networks of behaviors, two dimensional studies, three dimensional object studies, and immersive spatial studies will present emergent spatial constructs.

I. Introduction: Why? | What?

Problem Statement - (Problem Statement "Tell the story of the evolution of the research", Contributions, Background, Terminology, Motivation, Organization)

1.1. Motivation: Why?

The Field(s):

Using emergent systems to evolve our individual and societal world(s) through technology

Dissertation:

Using New Media Architectures and Self Organizing Systems in practice to conceptually frame a new area of poetics

...space and form in the areas of Architecture, Conceptual Art, and Media Arts

...the use of forms, patterns and space in engineering and sciences ...(InfoVis & SciVis)

...the use of Complex Systems in the Media Arts & Sciences

...the use of the Computational Tools (from Analog) to explore Emergent Behavior Phenomenon

...Self Organizing System Behaviors as a conceptual framework in the Media Arts & Architecture

...the creation of computational "Worlds" inspired by "Liquid Architectures" as an Information Construct

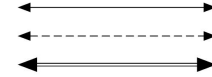
...the investigation of spatial taxonomies

...the identification of use cases for a new informational material media as a conceptual media arts framework

...the speculative evolution of a new Media Arts practice for exploring Media Art works Inspired by Science

The Structure of Art
by Jack Burnham

The Structural Matrix 57



means "taking the opposite of the coefficients"

means "taking the opposite of the joining sign"

means "taking the product of the above two equations"

Perennial Pulchritude
(Culture)

Unacceptable Relations
(Nature)

FIRE apparent in some

Surrealism,

Dadaism,

Conceptual & Ecological Art.

EARTH frequently defines the art of

Surrealism,

Dadaism,

Conceptual & Ecological Art.

Fire (prescribed)

$n(C) = n'(E)$

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EARTH (forbidden)

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AETHER

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AETHER

(C)

WATER (not prescribed)

WATER appears in much of the

twentieth centuries

twentieth centuries

twentieth centuries

twentieth centuries

twentieth centuries

twentieth centuries

twentieth centuries

twentieth centuries

twentieth centuries

C =/= E

AIR (Not Forbidden)

AIR represents all the schools of nonobjective art, Suprematism, Constructivism, de Stijl, Abstract Expressionism, Color-Field painting, Object Art, Process Art.

1.2. Problem Statement: What?

The Field(s):

The study and control of the natural phenomenon of emergent systems solving the tyranny of scales.

Dissertation:

The study of natural emergent phenomenon as a New Media Architectures conceptual framework in the exploration of Complex Systems through practice as research. (The aesthetic embodiment of an Art Object.)

... the problem of resolution

... the problem of complexity in a computational platform

... the problem of engaging emergent phenomenon as pattern

... the problem of engaging emergent phenomenon as form

... the problem of engaging emergent phenomenon as space

... the problem of engaging emergent phenomenon as “Virtual Worlds”

... the problem of engaging emergent phenomenon in “Worldmaking”

1.3. Structure of the Dissertation: Question, Process, & Solution

I. Framing Questions, Historical Background & Identification of Historical Precedents

...How can Art, Architecture and the Media Arts create new territories of artistic discovery?

...How has emergent behavior in the media arts shaped our aesthetic world(s)?

...How can agent behaviors in computational space lead to new conceptual spatial constructs?

II. Analysis and Contributions New Media Architecture's Prototype(s): Actual projects analyzing existing instrumentation and Project Solutions. Virtual World(s) as a tool for form, shape and space creation.

...The engagement of the different dimensions of form and space in virtual space

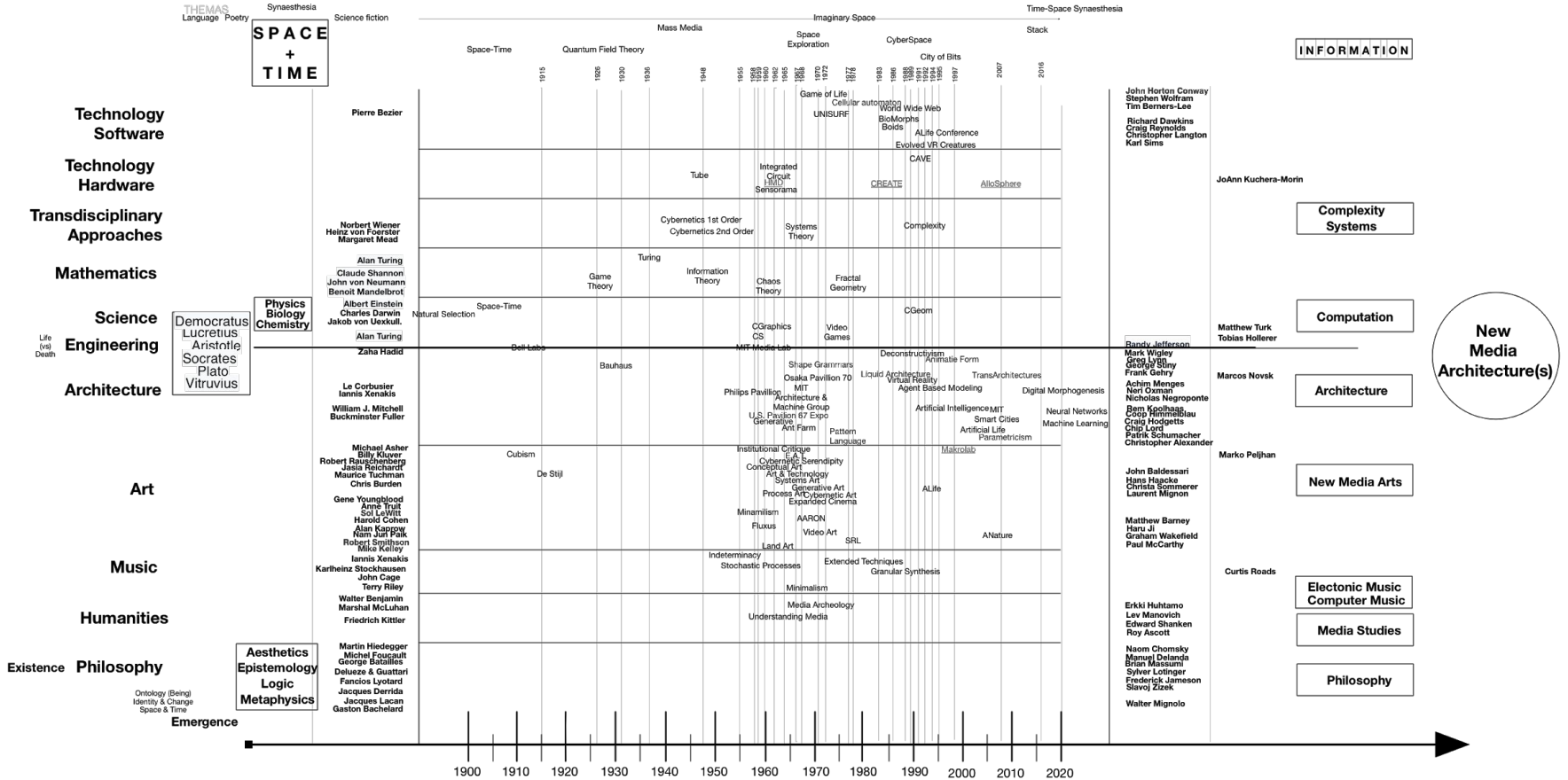
III. Contextualizing A New Media Architecture's Conceptual Framework within a Contemporary Media Arts and Architecture canons

... The engagement of a new sense awareness of form and space as both information and material

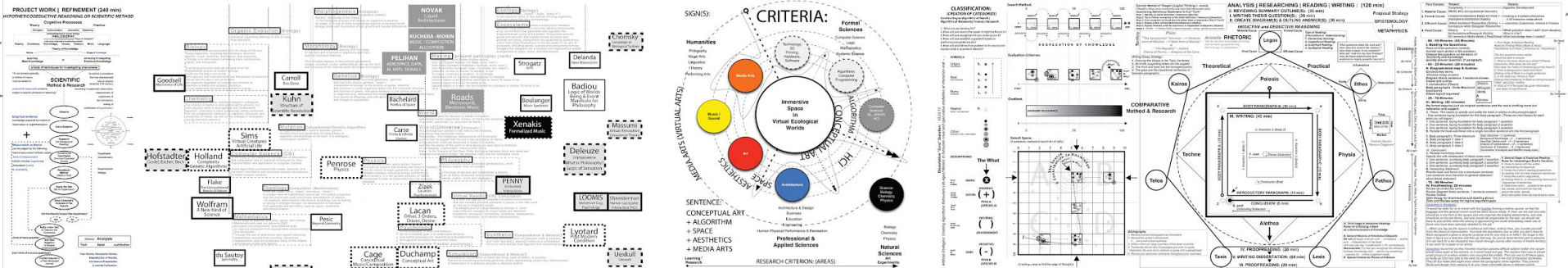
II. Historical Background: When? | Where? | How?

(Literature Review, & Precedents (Art Works, Design Works, Media Works, & Scientific Works "Complexity"))

2.1. Historical Timeline: Overview



2.2. Architecture, Arts, Media Arts & Science



Computer Science: Christopher Langton (CS) Craig Reynolds (CG) & Karl Sims (CG)

Artificial Life: Christa Sommerer & Laurent Mignonneau;

Artificial Nature: Graham and Haru

Artificial Life Experience Installation: Victoria Vesna - Bird Song & Noise Aquarium

Media Arts & Citizen Science: Marko Peljhan - MakroLab, Project Atol & Somnium;

The Compositional Process, Electronic Music ,& Immersive Environments: JK-M AlloSphere, H-L A & Etherial, Curtis

Roads - Granular Synthesis Modular Synthesis (Complex Systems with Modular Computing)

Architecture, Information Space & Virtual Reality: Marcos Novak - Liquid Architectures & transvergence

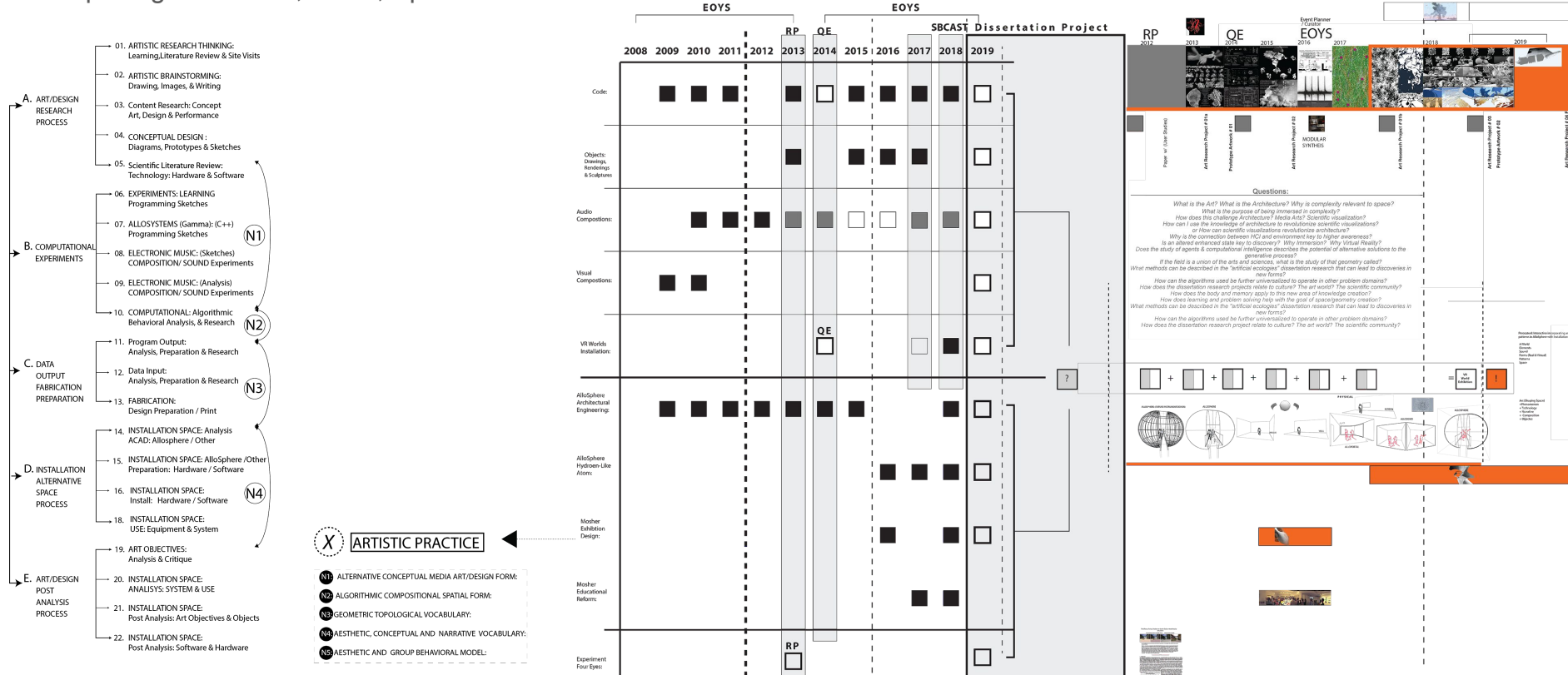
Systems Theory, & Media Arts (Machinic): Hans Haacke & Marko Peljhan

III. Methodology: How?

(Background Research, Data Analysis, & Data Use) - <https://en.wikipedia.org/wiki/Methodology>

3.2. General Methods: Virtual Worlds: Inside and Out

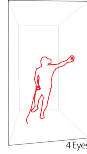
Exploring Interactive, Sonic, Spatial & Visual trends in Virtual Worlds.



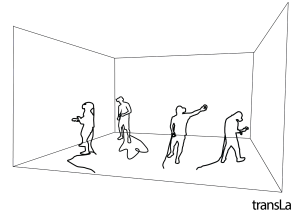
3.3. General Methods: Instrumentation Engineering & Projects

Exploring Interactive Technologies for immersive Virtual Instruments and Worlds.

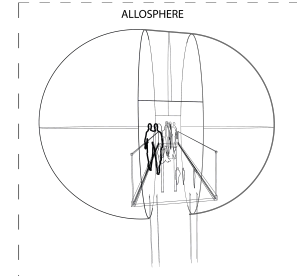
Headsets: Four Eyes User Study -



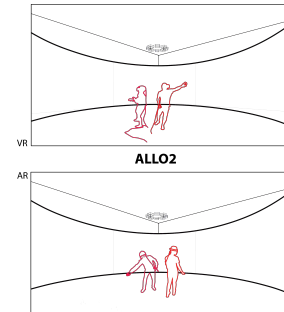
Headsets & VR Installations: transLab -



AlloSphere Instrument: Analysis, Architectural Design & Engineering -

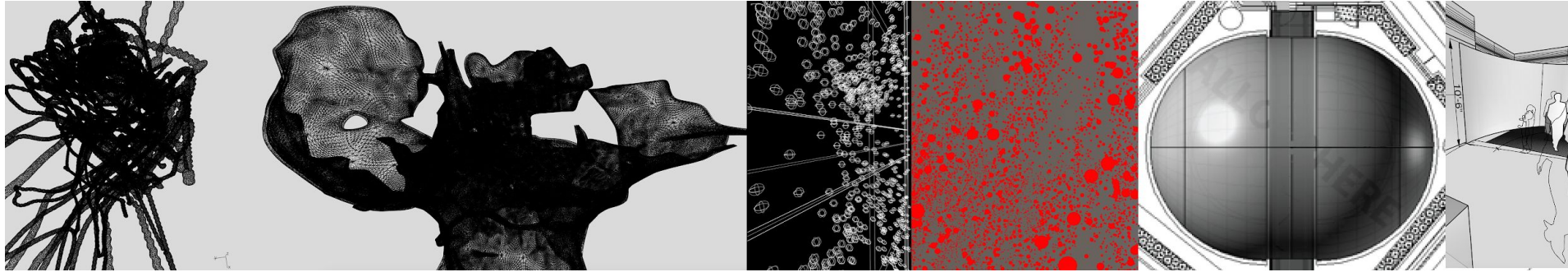


AlloSphere Immersive Art Works: JoAnn Kuchera Morin & AlloSphere Research Group -



IV. Projects:

4.1. Prototypes: Algorithm, Analysis & Research



I. Flocking and Swarming Behaviors - Movement Trails

II. Flocking & Swarming Behaviors with Objects - Dispersal Group Movements

III. Flocking & Swarming Behaviors with 3 Species in Reactive Natural Environment + Generational

IV. Virtual Worlds Series: Self Organizing Flocking Behaviors In Virtual World Construct

V. Immersive Instrumentation (Architectural Engineering, Design & Fabrication)

4.2. Projects: Art Object Studies - AnalogDigital Data to Object



I. Self Organizing Systems + Flocking & Swarming 1D Sonic Studies -

Concerts: Gamma Compositions

Installation - Untitled: Quails & Studies: Colony Collapse Prototype

II. Flocking & Swarming System 2D Drawing:

Exhibition: Colony Collapse

Exhibition: Liberty...

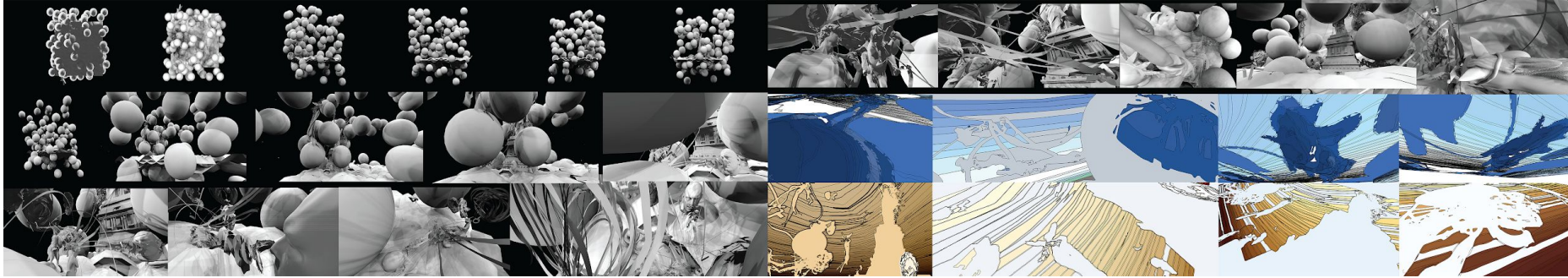
III. Self Organizing Systems + Flocking and Swarming System 3D Objects: Current - Alma

Exhibitions: Trails... , Flower.. & Liberty...

IV. Hydrogen-like Atom - Installation: (Artists: JK-M, Lance Putnam & Lucca Pelitti)+AlloSphere Research Group

Quantum Forms and Etherial

4.3. Projects: A New Media Architectures of Virtual World(s) Installations



Virtual Worlds I.

Flocking Sphere Clouds (Prototype)

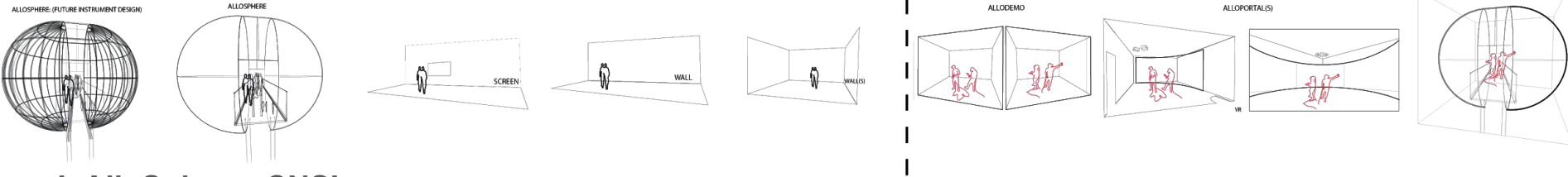
Virtual Worlds II.

Liberty Prototypes and Collaborative Installation ... (Exhibited)

Virtual Worlds III. (In_Progress)

Title: La Poesia de Lagrimas de alegria para la Evolucion de Alma... (In Progress)

4.4. New Media Architectures: Instrument Design & Engineering w/ Content



I. AlloSphere: CNSI

ACAD of Instrument

Infrastructure: Projectors (2 Iterations), Audio(Speaker Layout), Control Room, & Phase Space Wiring

Content: CNM - The Body - Demo: Animation & Software

Publications: Computers and Graphics & IEEE Computer Graphics and Applications

II. Four Eyes Lab: The Effects of Visual Realism on Search Tasks in Mixed Reality Simulation

VR Portable Instrument & Data Representation

Publication: IEEE 2013 - Cha Lee, Gustavo A. Rincon, Greg Meyer, Tobias Hollerer, and Doug A. Bowman

III. AlloSphere: Installations & New Instrument

AlloPortal - UCSB MAT 2809 + Headset Integration

Exhibitions: MOXI Museum - HLA

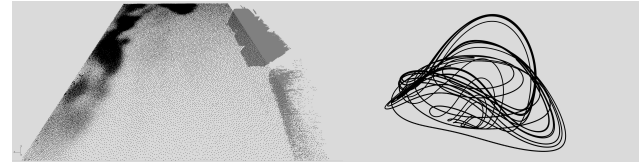
Conferences: ISEA 2017 - Manisalez & ACM-MM 2017 - Computer History Museum

V. A New Media Architectures Installation

I. A Virtual World(s) Exploration of New Media Architectures:

Transvergence Research Group

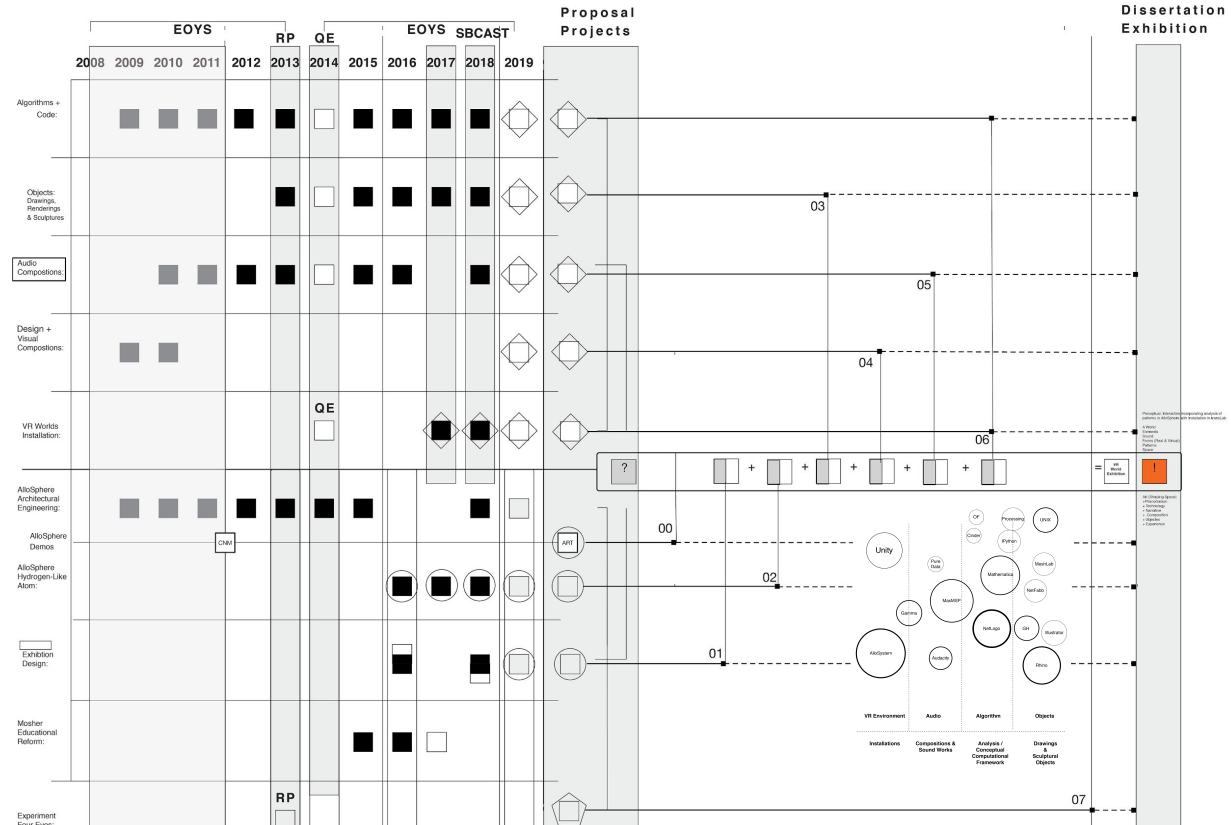
Title: **La Poesia de Lagrimas de Alegria para la Evolucion de Alma**



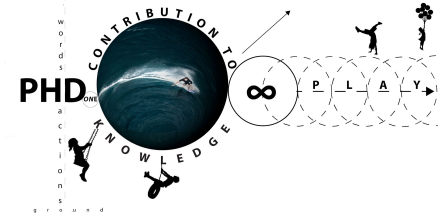
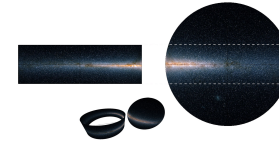
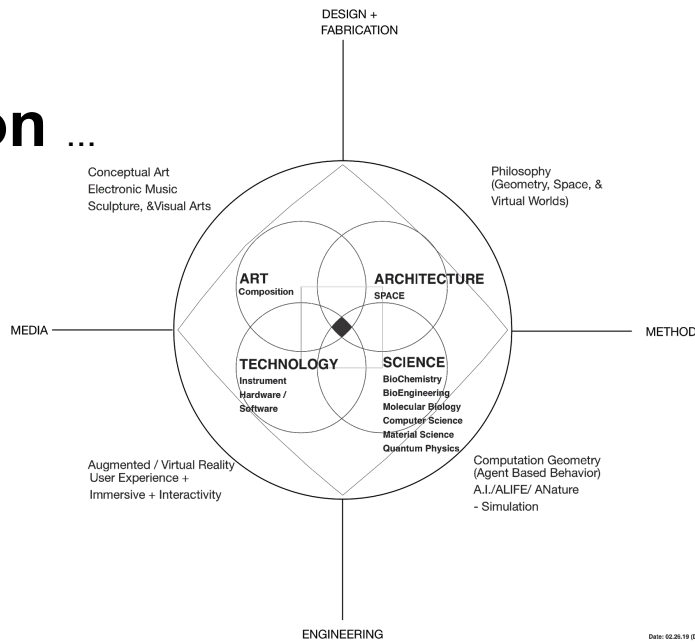
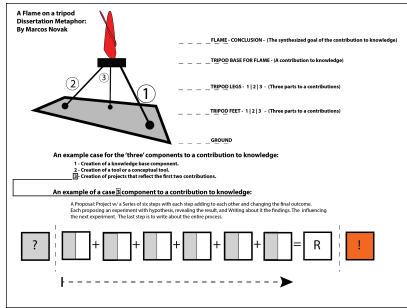
II. A Collaborative Media Art Work including New Media Architectures:

AlloSphere Research Group

Title: **Etherial: Dr. JoAnn Kuchera-Morin, Andres Cabrera, Kenny Kim & G. Rincon**



VI. Conclusion ...



Conclusion:

Investigating Design Models of Immersive Artistic Worlds: Algorithmic Strategies for Artistic, Ecologically Expressive Spatial Compositions

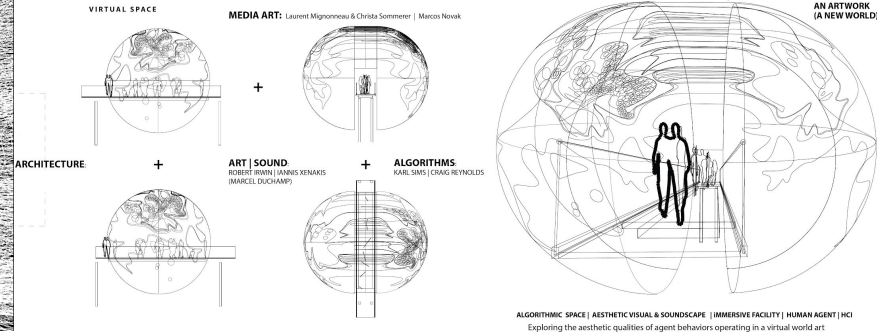
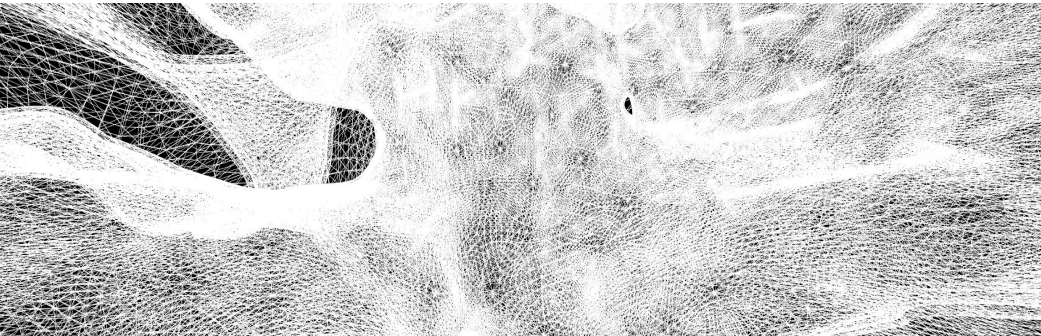
Date: 02.26.19 (DP - Revision)

...this dissertation is the study of formalizing a new media architecture for citizen scientist(s) as Media Artists that use Architecture, Engineering, Media (Arts) and Sciences simultaneous.

Contribution(s):

Creation of a new conceptual framework incorporating Complex Systems and Information Theory
 Creation of an identifying timeline tracing the movement from analog to digital of New Media Architectures
 Advancing New Media Architectures as practice based research in the Media Arts & Architecture
 Identifying project based use cases for New Media Architectures for engineers & scientists & citizen

VII. Future Directions ...



A Creation of a New Media Architecture combining AI and AN in Generative Form finding in Social Worldsmaking

A Creation of a New Media Architecture of Scientific Visualization

A Creation of a A New Media Architectures Pattern Language

An Exploration of Time–space synaesthesia as Immersive Narrative

Agent Based Machine Learning Modeling traversing Quantum forms

A New Media Architectures repository of Historical Timeline with Works

A Creation of a New Media Architecture Toolkit

Thank You!

Committee:

JoAnn Kuchera-Morin (Co-Chair)

Marcos Novak (Co-Chair)

Marko Peljhan



The MAT community, The AlloSphere Research Group, & The Transvergence Research Group

Special thanks to all who extended countless kindnesses and inspired me through the years.

Question(s) ?

