

AUSTIN FORUM

ON TECHNOLOGY & SOCIETY

Connect. Collaborate. Contribute.™



Technology + Arts: Data, Algorithms, and Software Enable New Artistic Creativity

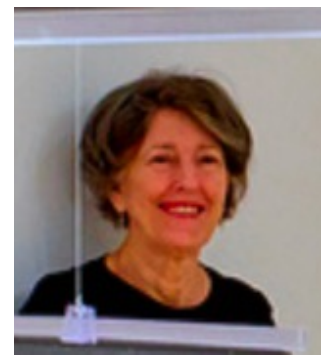
March 5, 2020

Austin Central Library



Julia Morton

Generative Art Project



Shirley Steele

Generative Art Project



James Pricer

Generative Art Project



Tyler Hobbs

Generative Art Project

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@AustinForum

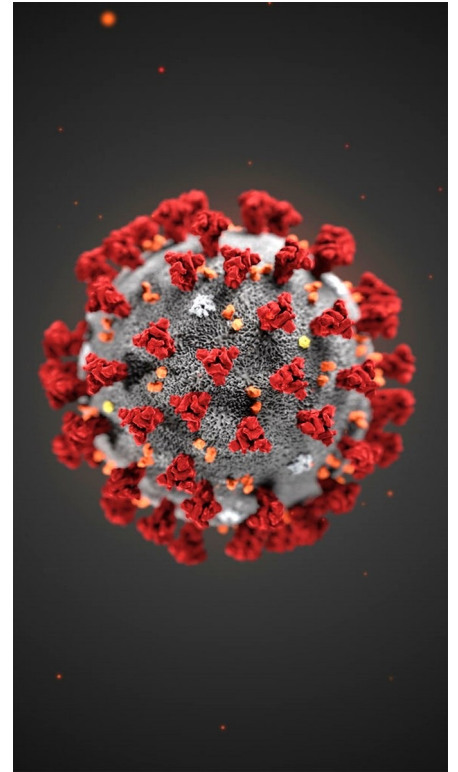
#artAF

Welcome!

First... A Quick PSA

Quick primer on Coronavirus

- A coronavirus is a virus that has spikes coming out, looking like a crown or the corona of the sun
 - There are always coronaviruses around, and people get colds or other illnesses from them each year
 - SARS (2003) and MERS (2012) were/are both caused by a coronavirus
 - This year's virus has been named "SARS-CoV-2." The disease it causes is "Covid-19"
- Covid-19 originated in China, and as of this week has affected 92K people in 71 countries
- In the US, there are just over 100 confirmed cases 6 confirmed deaths



Isn't this just like the flu?

- The major difference between the two is that we don't know as much about Covid-19, how it will mutate, nor do we have the tools to fight it (flu shot, treatment, etc.)
- This is why health officials want to contain it as much as possible, to give time to develop these tools

	Flu	Covid-19
Symptoms	Fever, cough, shortness of breath (primary)	Same
Transmission	Person to person; someone can spread before diagnosed	Same – but may also be airborne (WA state cases), still discovering
Treatment	No antibiotics, may require hospitalization; Antiviral medication may help with symptoms	No antibiotics, hospital stays tend to be longer; Antiviral medicine being tested
Vaccine	Available – but may not address the right virus	Not available yet
Mortality Rate	0.1%	2.3% (may increase or decrease, complete data not available)

Be a responsible world citizen by. .

Personal Behavior

Do not panic!

Wash hands frequently and avoid contact with your face

Use knuckles to do things like flip switches, press elevator buttons, etc

Wipe bags, phones, other items that frequently contact open surfaces

Out and About

Consider a fist-bump, elbow-touch, or bow rather than shaking hands

Masks are not helpful except for reminding you not to touch your face—leave them for health care professionals

People can be infected and not show or be sick and not have coronavirus. To be extra cautious, keep six feet distance



Preparations

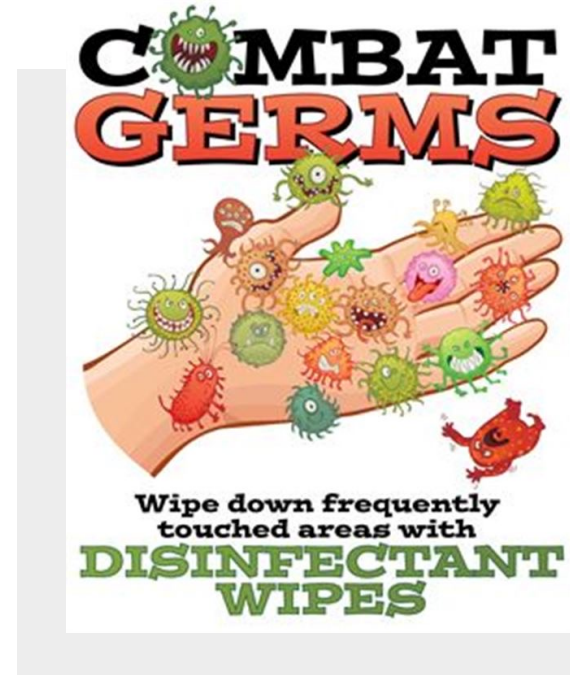
You may choose to buy food and medicine

Prepare to stay home if work or schools closes (set up telework arrangements, childcare, etc)

Prepare for cabin fever (puzzles, books, movies)

If you suspect you may have coronavirus or Covid-19

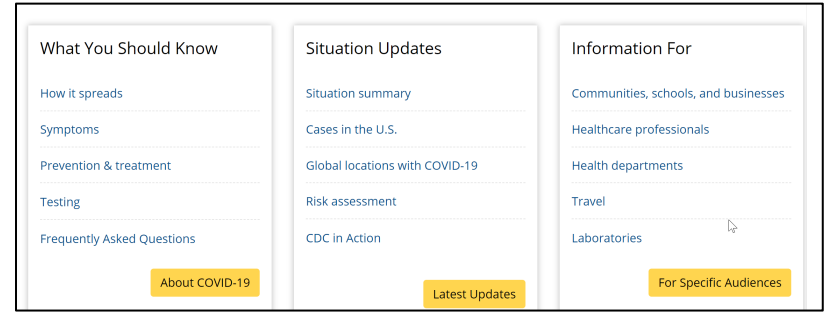
- If you have a cough, fever, symptoms of respiratory illness/shortness of breath, and have traveled to an infected area or think you have come in contact with Covid-19
 - **CALL** your healthcare provider (they will determine if you need a test, and will prepare the office if you need to come in.)
 - **READ** CDC website to get full list of precautionary measures including self-quarantining (including from pets)
 - **Continue to wash hands** and “high-touch” surfaces frequently



Stay up-to-date

- Information is evolving rapidly—stay informed, especially if you suspect your or someone you know may be infected
- Most health institutions now have a section linked on their homepages or in their FAQs dedicated to updates
 - Center for Disease Control (www.cdc.gov)
 - Austin Public Health (<http://www.austintexas.gov/COVID19>)

cdc.gov



Frequently Asked Questions

Austin Public Health has received many questions about coronavirus disease 2019 (COVID-19). As we receive questions and more information is made available, information on this page may change. *Last updated*

Q: Am I at risk for COVID-19 in Austin?

A: The overall risk of COVID-19 in the United States to the general public remains low at this time.

Welcome, Mike Ignatowski & AMD, and Michael Ward!



Mike Ignatowski
Senior Fellow, AMD



Michael Ward
Austin Urban Technology
Movement

Our Annual Partners Make This Possible!



We Are Passionate About Technology Influence & Impact on Society



Connect! Collaborate! Contribute!

Austin Forum Events: Expert Presentations to Inform & Inspire

We bring leaders, thinkers, builders, creators, and learners together to [connect, collaborate, contribute!](#)



5:15-6:15

early networking in lobby

6:15-7:45

presentation and Q&A

7:45-8:15

networking and discussion

8:15-?

discussion, drinks, and pizza at *Trifecta on 3rd*



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Join Us for Great Events in 2020!



Coming up this year:

- **Creating tech startups**
- **Tech & food**
- **Gaming**
- **AI**
- **Military/Defense Tech**
- **Smart Cities**
- **Quantum Computing**
- **and more!**

More Great Content: Austin Forum Upload & Austin Forum Update!



<https://medium.com/@AustinForum>

You can help us sustain and grow by
taking the Austin Forum 2020 Survey!

www.austinforum.org/survey

Join the Austin Forum Slack Workspace

We are excited to relaunch the Austin Forum Slack Channel!
Slack will enable us to accomplish many things, including:

- Continue and deepen the conversation after Austin Forum events
- Find new opportunities for collaboration, mentoring, working, and more
- Promote local events and relevant Tech & Society opportunities
- **Submit questions for speaker Q&A (re: your chance to win a SXSW badge!)**



Join the Austin Forum Slack Workspace

1. Go to: www.austinforum.org/slack
2. Click “Join the Slack channel”
3. Enter your email address
4. Check your email to confirm Slack invitation
5. Enter your name and click “Create Account”
6. You’re in!





Help us share the Austin Forum goodness with everyone!

Remember to tweet!
#artAF @AustinForum

Questions for speakers?
<https://www.sli.do> in browser
or download the **sli.do** app!
Use event code **#artAF**



SXSW[®]

**Use sli.do
to submit questions
and maybe win a
SXSW badge!**

To win, you must :

1. Post your *questions* in **sli.do** using event code **#artAF** , and providing your name
2. Be registered and be present
3. Follow Austin Forum on some social media (Facebook, Twitter, etc.)

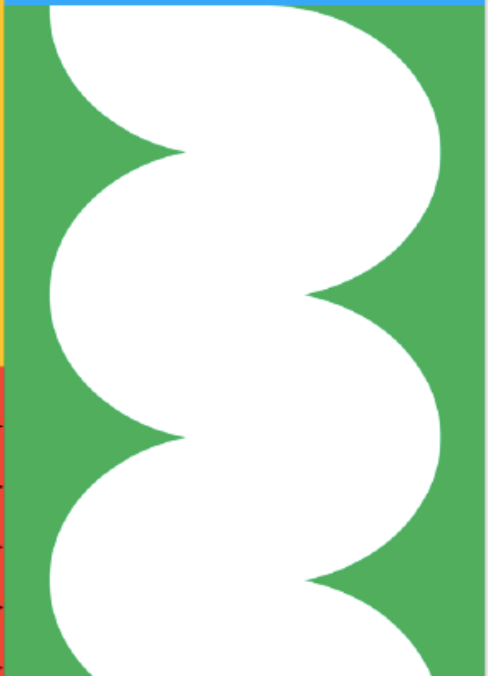
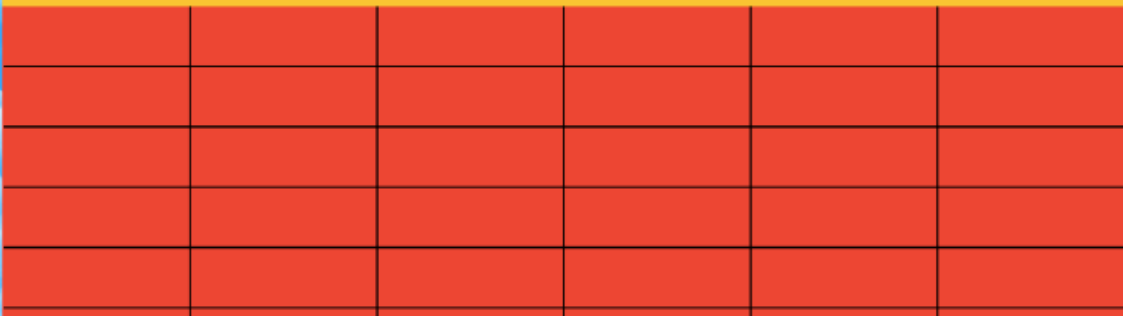
SXSW

2020



AUSTIN •

MARCH 13-22





JUST ANNOUNCED

- Conversations About America's Future with the Texas Tribune
- Comedy Festival Line
- Two new Keynotes
- More feature sessions
- Be sure to check out the full schedule at schedule.sxsw.com



SXSW ART PROGRAM

Showcases experiential and conceptual visual artworks that apply emerging technologies and immersive environments to spark discovery, inspiration, and connection.

This years program is comprised of 9 installations from 6 different countries

sxsw.com/art



FAMILY EVENTS

- Health & Wellness Expo
- SXSW Outdoor Stage At Lady Bird Lake
- Gaming Expo
- For a listing of all the free events check out sxsw.com/free

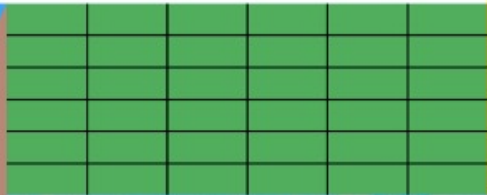
SXSW 



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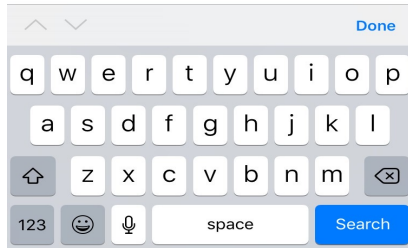
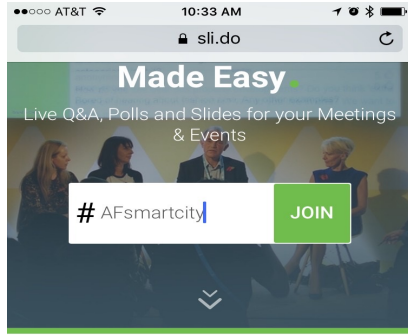
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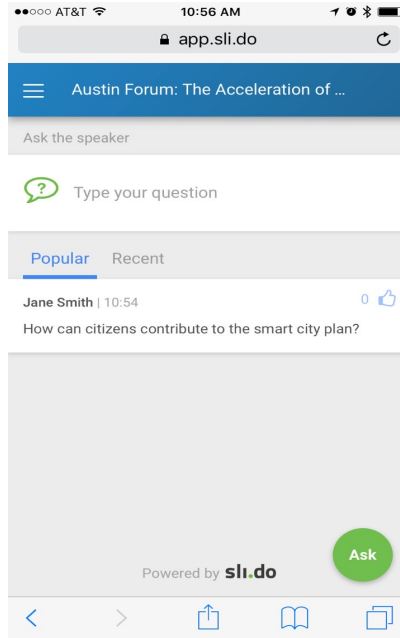
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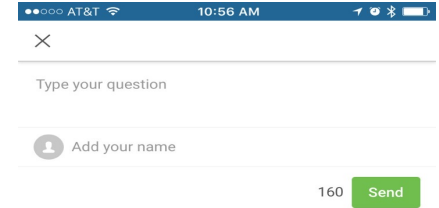
Using sli.do from your smartphone is easy!



Enter hashtag **#artAF**



Type your question/comment



Add your name

And now, our featured presentation...

Please:

- ✓ Silence your devices
- ✓ Hold conversations until the networking session
- ✓ Share key points via Twitter (**#artAF @AustinForum**)
- ✓ Share questions via Sli.do (**#artAF, and *your name***)
- ✓ Learn, think, enjoy!



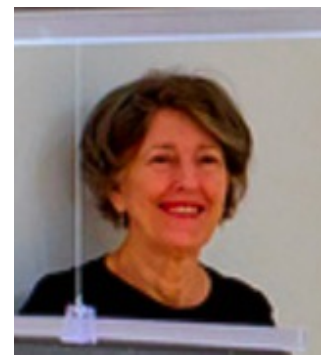
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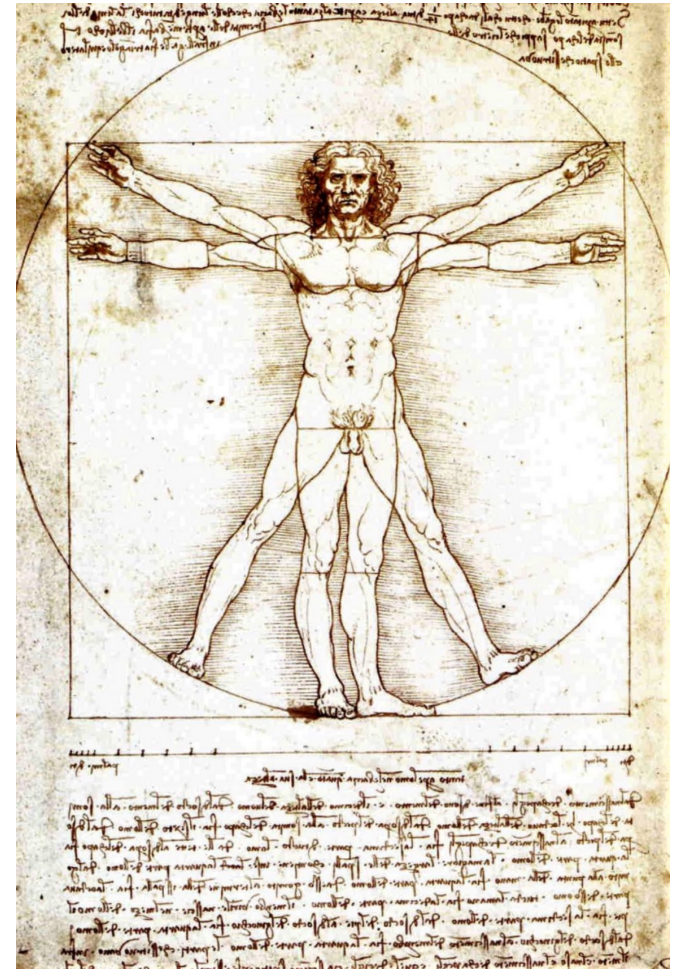
What is Art?

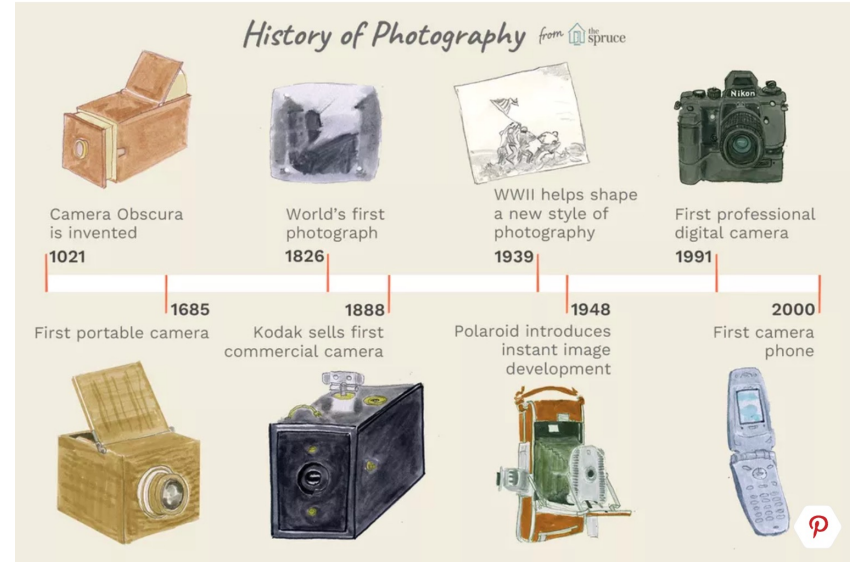


Art is Mark Making



Renaissance artists used math, chemistry, and technology.

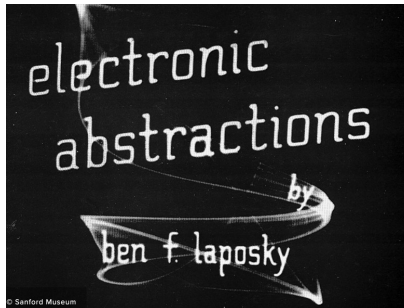
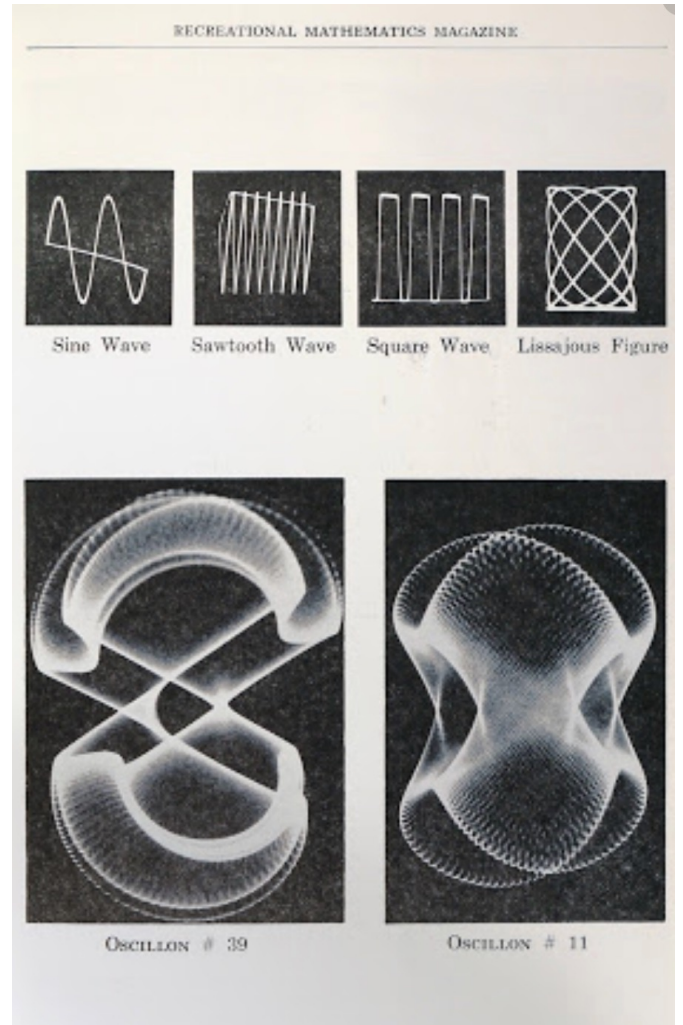
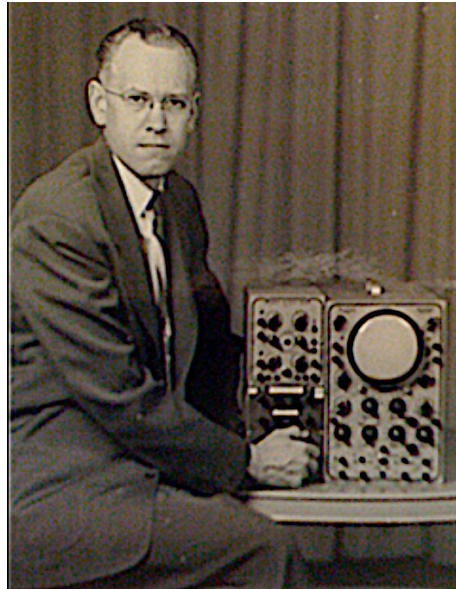
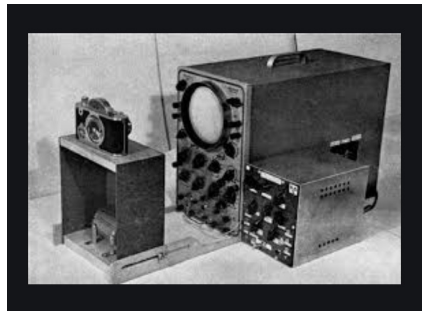
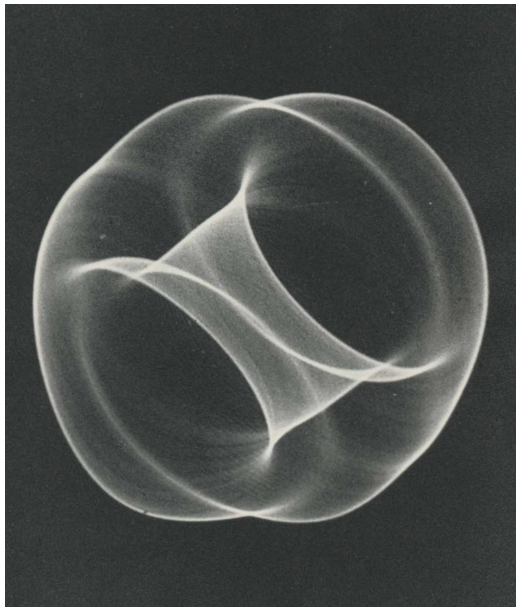




Photography used chemistry and technology



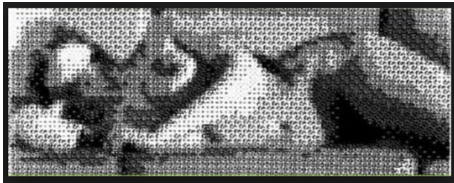
Painters adopted the aesthetics of photography



Ben Laposky circa 1950's

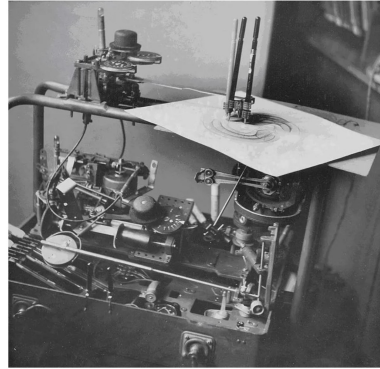


1st computer image (1957)



"Studies in Perception" computer drawn (1966)

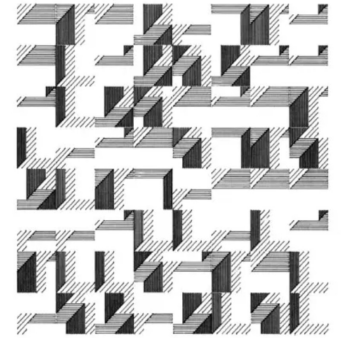
Pictures made with the Henry Drawing Machine, invented by Desmond Paul Henry, early 1960s



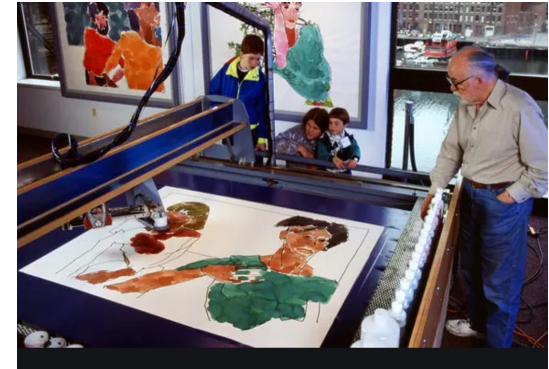
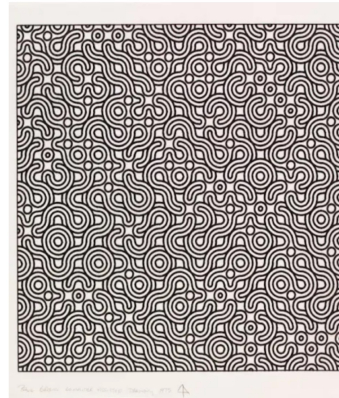
Plotter drawing from 1962



Edward Zajec: RAM compositions from 1969, done on an [IBM 1620](#)



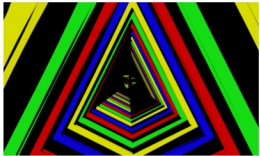
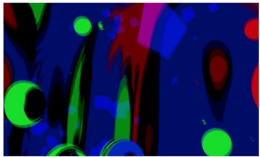
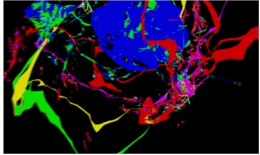
Untitled Computer Assisted Drawing, by Paul Brown, 1975



Harold Cohen, & Aaron, his Drawing Machine 1974

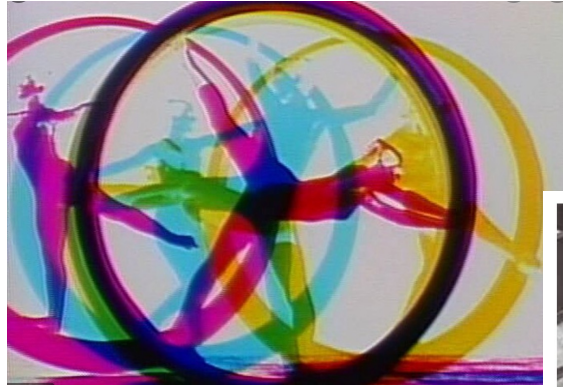


Lillian F. Schwartz - New Works

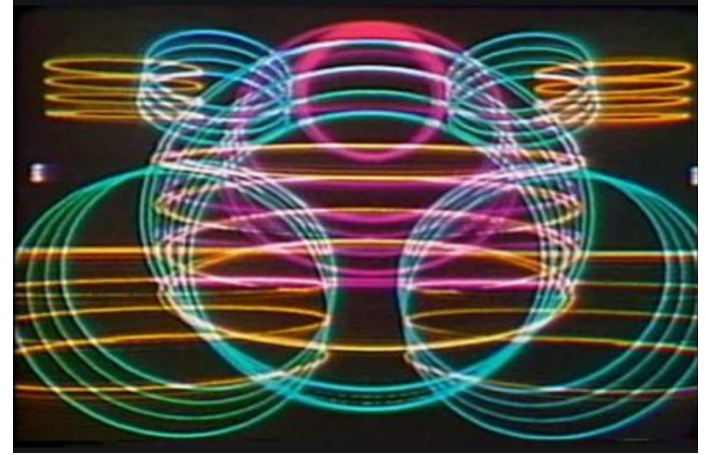


Lillian Schwartz created generative videos

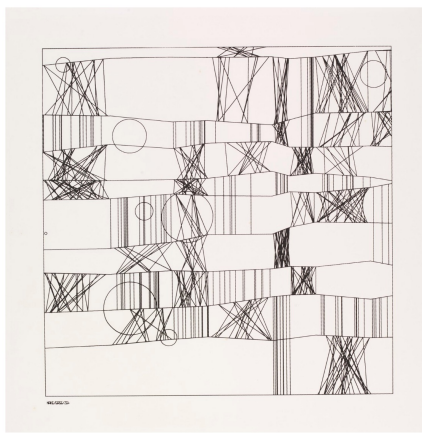
Early Works



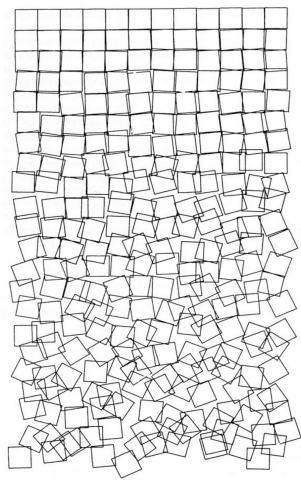
Doris Totten Chase



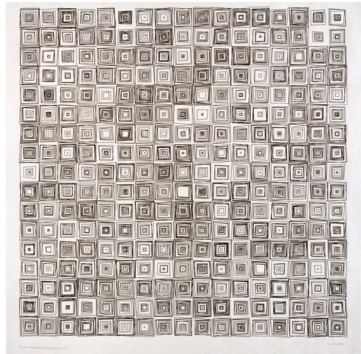
Doris Totten Chase uses projections to create videos



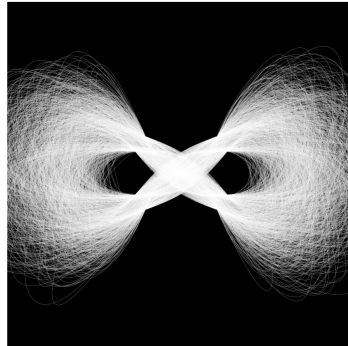
Homage to Paul Klee - Frider Nake, 1965



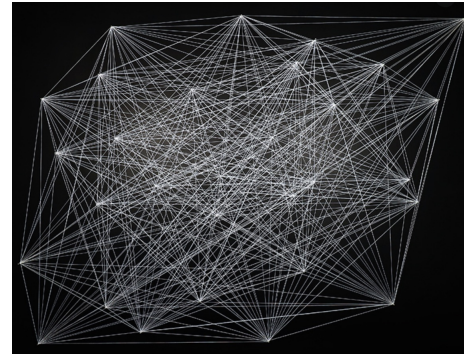
Schauer (Growth) - Georg Nake, 2008



[Grid] Andrea Vera Molinari, 1974

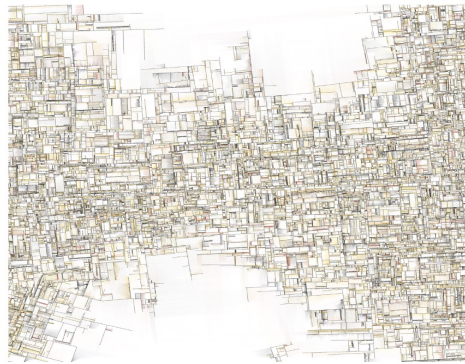


JOHN MAEDA



“computer-made”

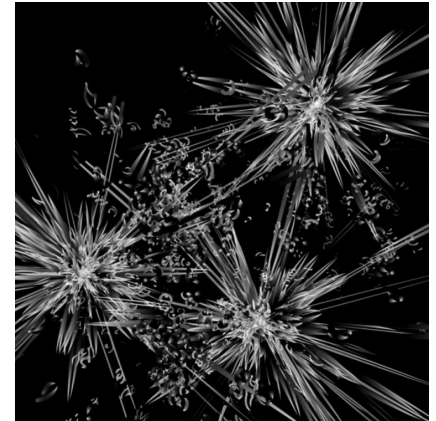
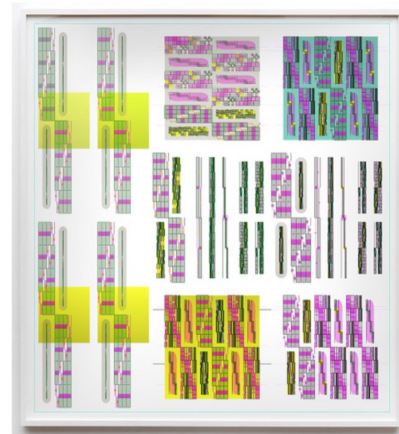
“hand-made”



JARED TARBELL



Horatio Gonzalez-Rivera



Casey Reas – the co-creator of Processing

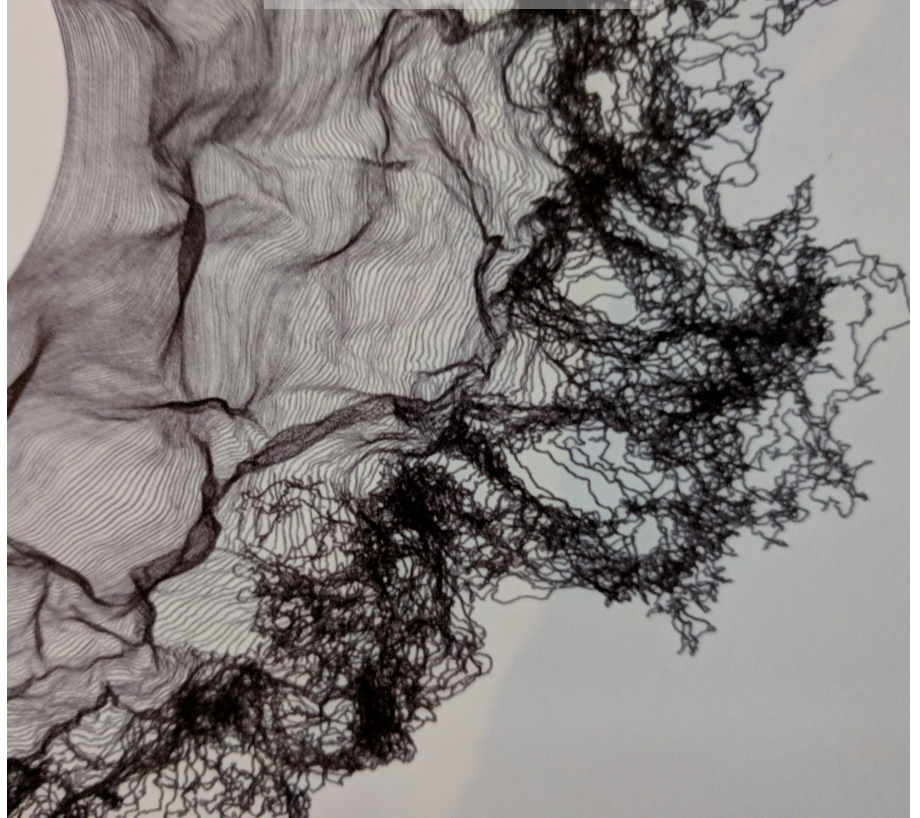
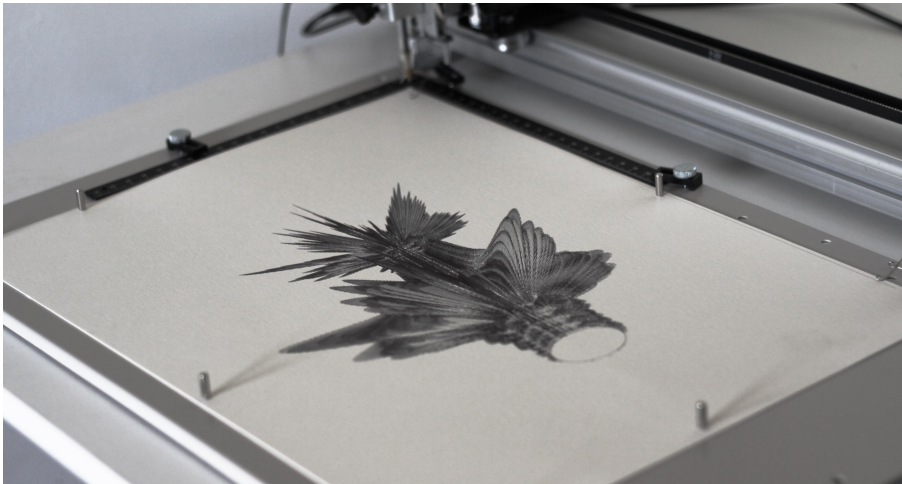
Art made using Processing software

Alba
Corral





Simon
Russell





Leo
Bleicher



THE TWO CULTURES, RECONSIDERED





ALGOL 68

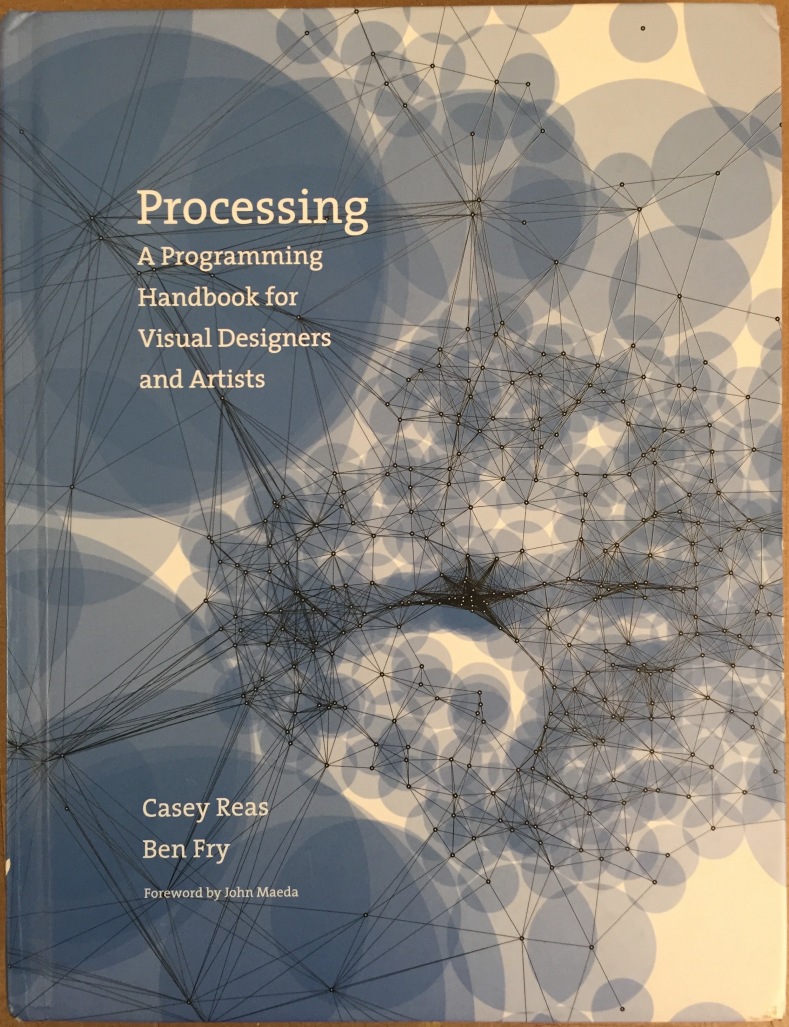
ALGOL 68

THE GREAT WALL

THE GREAT WALL







Processing

A Programming
Handbook for
Visual Designers
and Artists

Casey Reas
Ben Fry

Foreword by John Maeda

IRA GREENBERG

CREATE CODE
ART, VISUALIZATIONS,
AND INTERACTIVE
APPLICATIONS WITH THIS
POWERFUL YET SIMPLE
COMPUTER LANGUAGE
AND PROGRAMMING
ENVIRONMENT.

Foreword by Keith Peters

LEARN HOW TO
CODE 2D AND 3D
ANIMATION, PIXEL-
LEVEL IMAGING, MOTION
EFFECTS, AND PHYSICS
SIMULATIONS.

Processing

Creative Coding and Computational Art

friendsof
DESIGNER TO DESIGNER™
an Apress® company

TAKE A CREATIVE
AND FUN APPROACH
TO LEARNING
CREATIVE COMPUTER
PROGRAMMING.

Inventions in technology & science drive innovation in art

- Art reveals its underlying technology and science
- Art is a catalyst for conversation and further inspiration



```
main()  
{  
    printf("hello, world\n");  
}
```

Bria Kemp

program text somewhere, compile it successfully, where your output went. With these mechanic thing else is comparatively easy.

In C, the program to print "hello, world" is

```
main()
{
    printf("hello, world\n");
}
```

Just how to run this program depends on a specific example, on the UNIX operating source program in a file whose name ends i




```

void setup() {
    size(1152, 1584);    // 16" x 22"

    // CREATE EMOJI OBJECTS
    emo = new Emoji(800, 800);

    // CREATE & INITIALIZE OBJECT ARRAYS
    for(int i = 0; i < balloon.length; i++) {
        balloon[i] = new Here(color(random(255), random(255), random(255)), 30);
    }
    for(int i = 0; i < run.length; i++) {
        run[i] = new Run(color(255), random(10,80));
    }
    for(int i = 0; i < wifi.length; i++) {
        wifi[i] = new Wifi();
    }
    for(int i = 0; i < power.length; i++) {
        power[i] = new PowerUp();
    }

    // CREATE READER
    reader = createReader ("Nepali.txt");

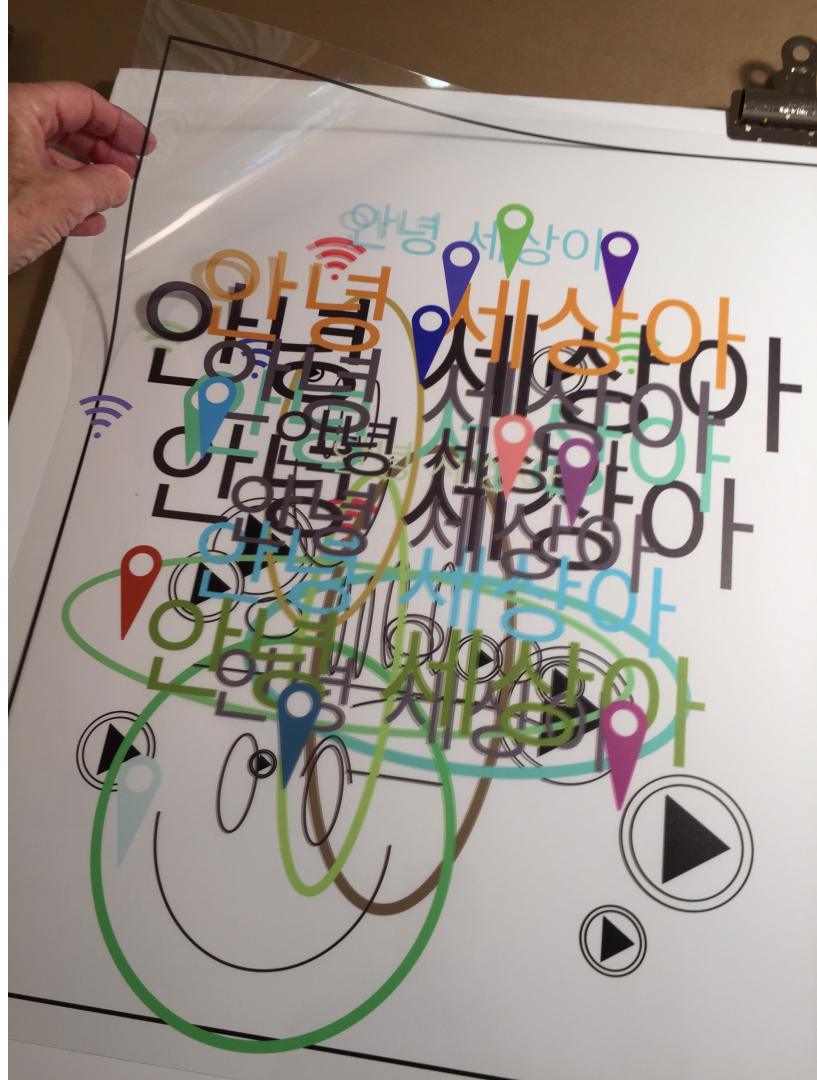
    // CREATE FONT
    f = createFont("ArialMT-60.vlw", 100);    // IGNORE THIS

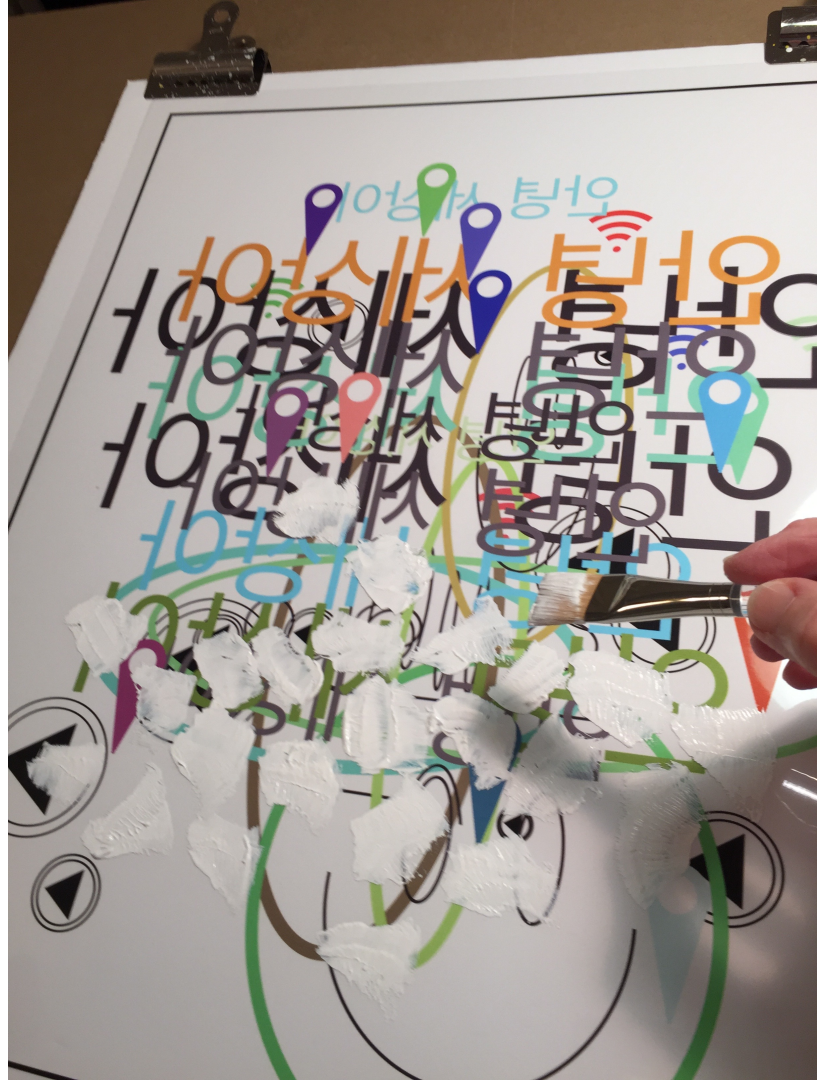
    String id =
    str(month())+"_"+str(day())+"_"+str(hour())+"_"+str(minute())+"_"+str(second());
    beginRecord(PDF, "Nepali_22x16_" +id+".pdf");    // START RECORDING PDF

    background(255);

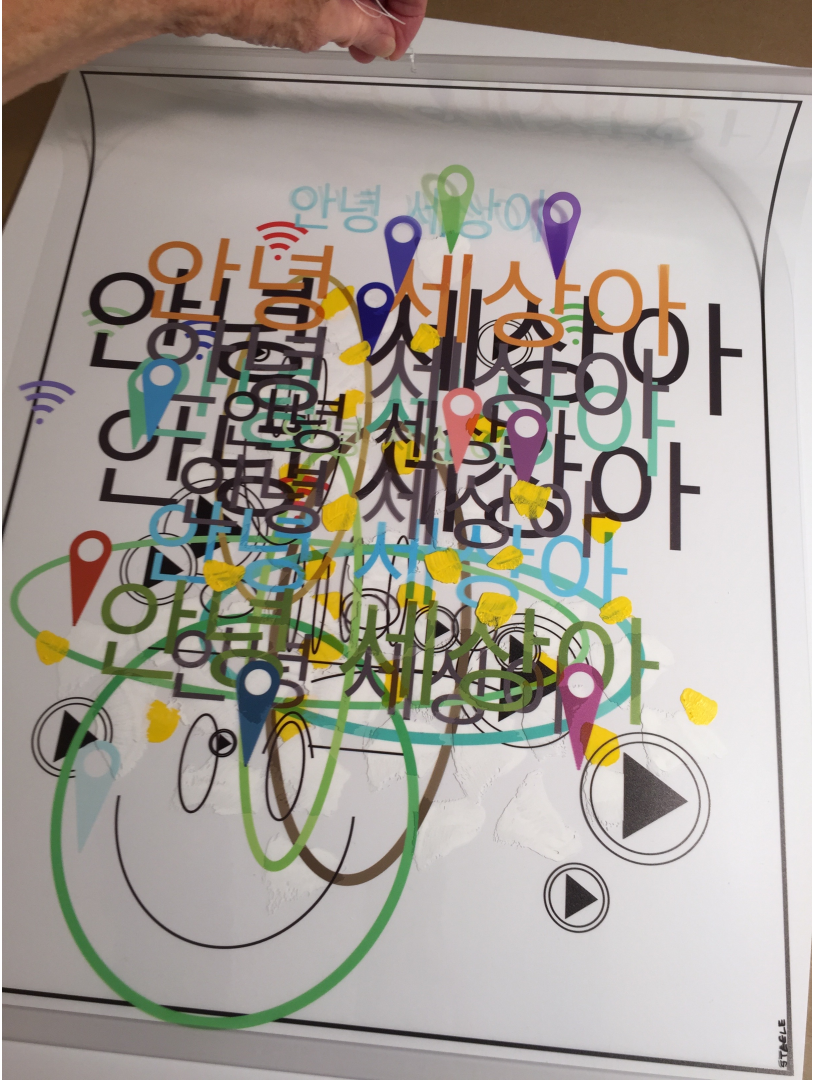
    // DRAW BORDER
    stroke(0);
    strokeWeight(5);
    noFill();
    margin = width*0.04;
    rect(0+margin, 0+margin, width-(margin*2), height-(margin*2));
}

```









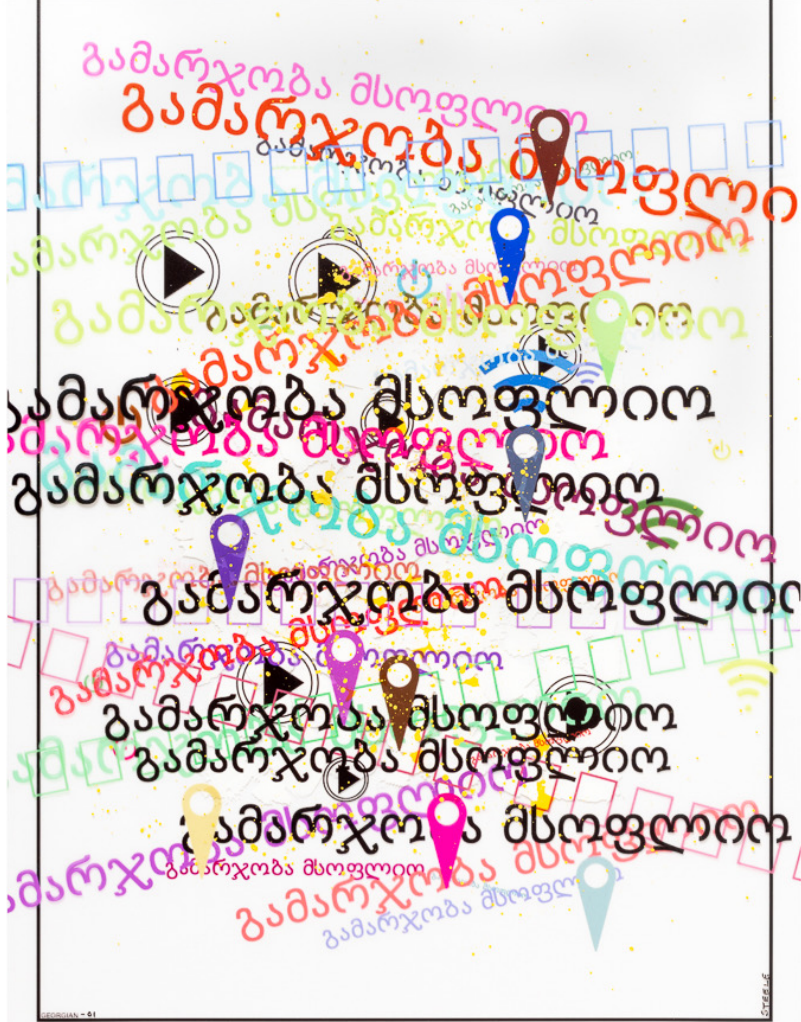
















नमस्ते दुनिया

नमस्ते दुनिया

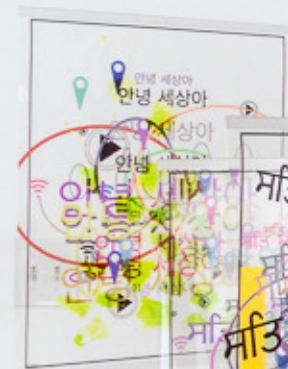
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नमस्ते दुनिया

नमस्ते दुनिया





Generative Art Project

AI + Art



Data Portraits

I create Data Portraits

- Historical perspective
 - My history
 - Art history
- My process
- Examples of my artwork



Data Portraits

- Many generative artists were not schooled in fine art

How did I get here?

- Clinical Psychologist
- Complex mergers and acquisitions software
- Data Mining – massively parallel processing big data
- Data Scientist – NSA, DoD, Walmart, Citigroup
- Technology was $\frac{1}{2}$ the work, creativity was $\frac{1}{2}$ the work

Generative Art Project

AI + Art



Representation
al



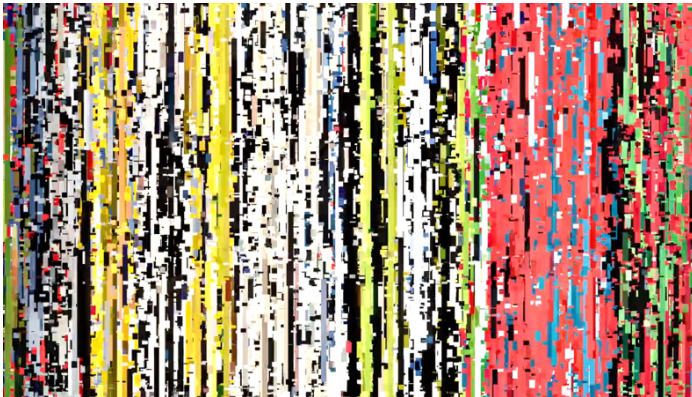
Abstract

Data Portraits

Two previous art movements that are considered antithetical to one another

Generative Art Project

AI + Art

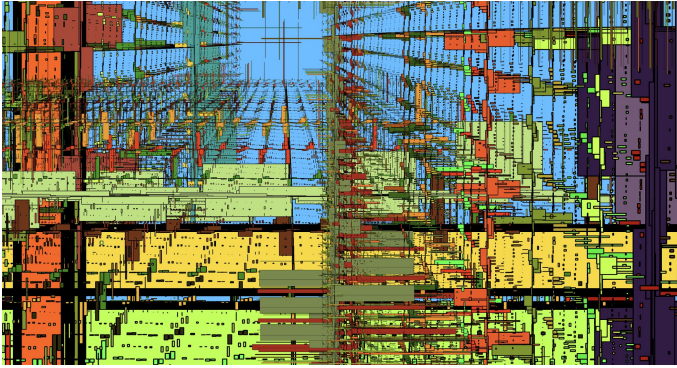


Data Portraits

My art is Representational Abstraction

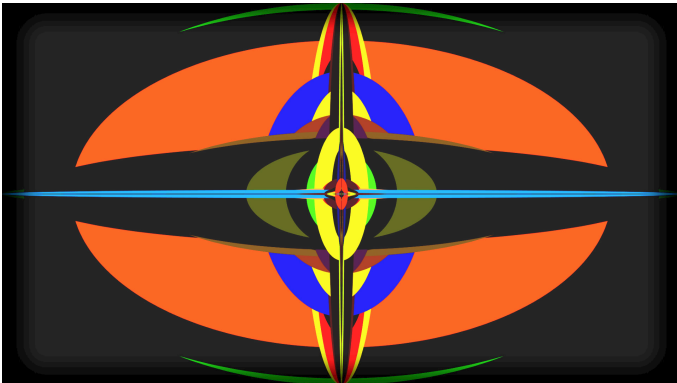
- *Merger of representational and abstract art*
- How? – by *merging technology and art*

Data Portraits



- ***My art is Representational***

- DNA *data represents* the person.
- CERN *data represent* and *are* the muons, boson, etc.



- ***My Art is an Abstraction*** of the data using technology and process

Generative Art Project

AI + Art

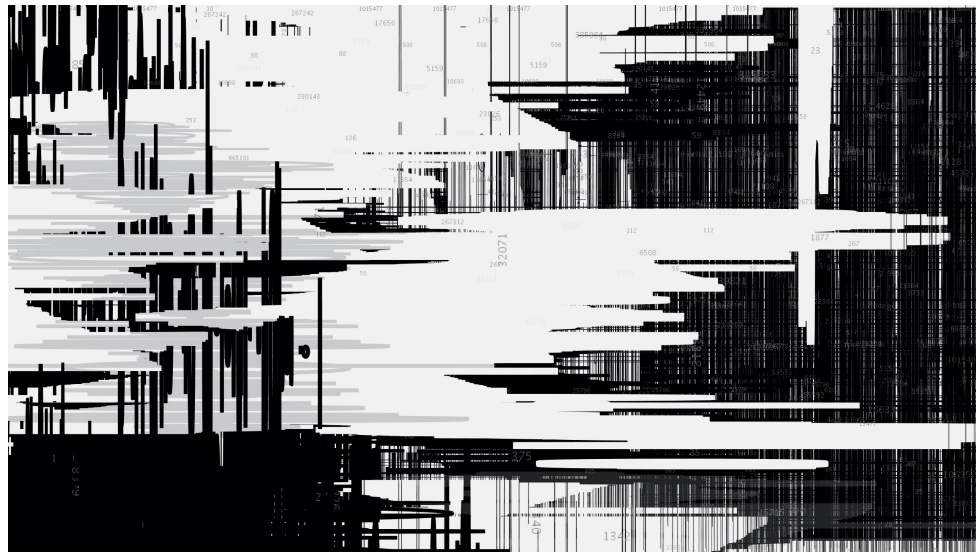


Data Portraits

The Process for Commissioned Portraits

- Interviewing – 2 to 3 hours
- Acquiring the data
- Data Mining + Data AI
- Coding
- Creating the video & prints

Data Portraits



Examples of human data for portraits

- DNA
- Fitbit/watch trackers – sleep, steps, vitals
- Weblogs
- Google Maps longitude and latitude
- Sequenced stomach microbiome bacteria
- MRIs and fMRIs
- Digital Calendars
- Blood tests
- Galvanic skin response (GSR)

Generative Art Project

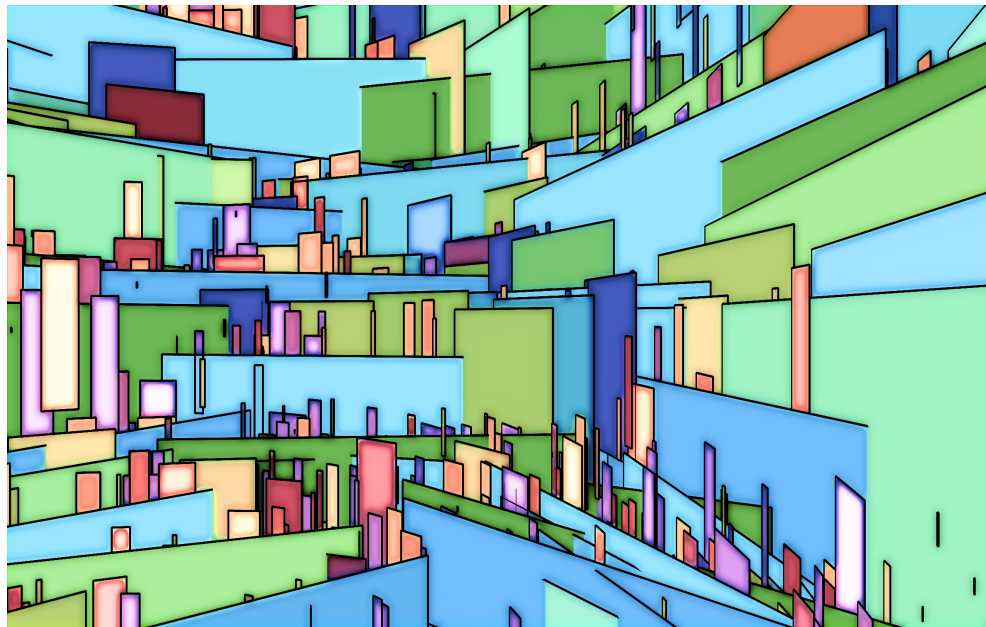
AI + Art

CC	4	190862103	rs610005
AA	4	190862126	rs6100044
TT	4	190872778	rs6100022
AA	4	190880409	rs6099997
GG	4	190891703	rs6099964
CC	4	190903688	rs6099952
AA	4	190915650	rs6099949
AA	4	190920523	rs6099903
CC	4	190922257	rs6099886
CC	4	190925357	rs6099874
GG	4	190936728	rs6099854
GG	4	190939665	rs6099847
CC	4	190963766	rs6099840
AG	5	27564	rs6099823
CT	5	38139	rs6099816
CT	5	48534	rs6099810
AG	5	58298	rs6099795
TT	5	81437	rs6099789
CT	5	90199	rs6099772
CC	5	93580	rs6099755
GG	5	99784	rs6099719
TT	5	107190	rs6099703
GG	5	111163	rs6099675
GG	5	112712	rs6099674
TT	5	113577	rs6099671
CC	5	114071	rs6099656
TT	5	118163	rs6099650
TT	5	118406	rs6099647
GG	5	140636	rs6099642
CT	5	141659	rs6099626
GG	5	143197	rs6099617
GG	5	143534	rs6099613
GG	5	156287	rs6099582

Data Portraits

Example Data - DNA

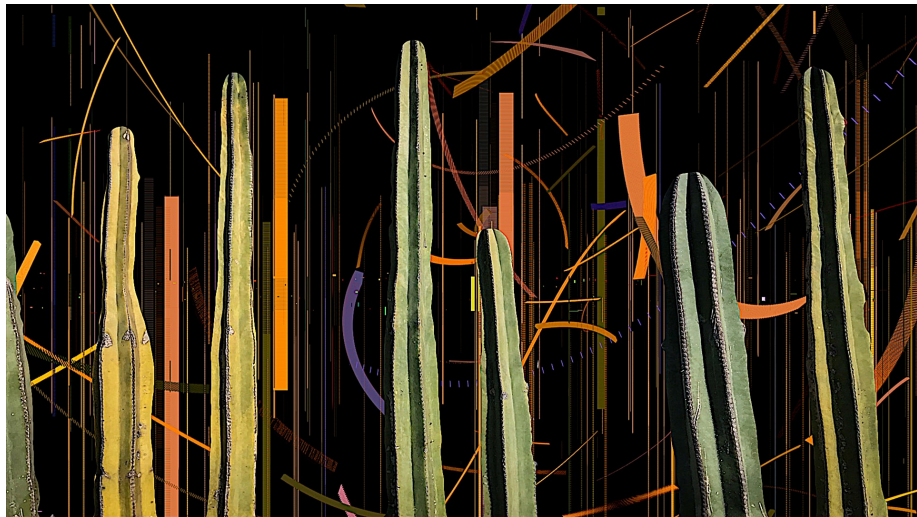
1. nucleobases
2. chromosome number
3. chromosome location
4. unique row number assigned



Data Portraits

Example Code

```
if (frameCount > 80) {  
  push();  
  rotateZ(PI/4);  
  strokeWeight(5);  
  fill (x3, x10, x21);  
  ellipse(r1  
    , constrain(tan(x1), 0, height/2) + 500  
    , constrain(x5, 0, height/2) + frameCount  
    , constrain(tan(x9), 0, height/2) - frameCount);  
  pop();
```

Data Portraits

Data + Code + Creativity

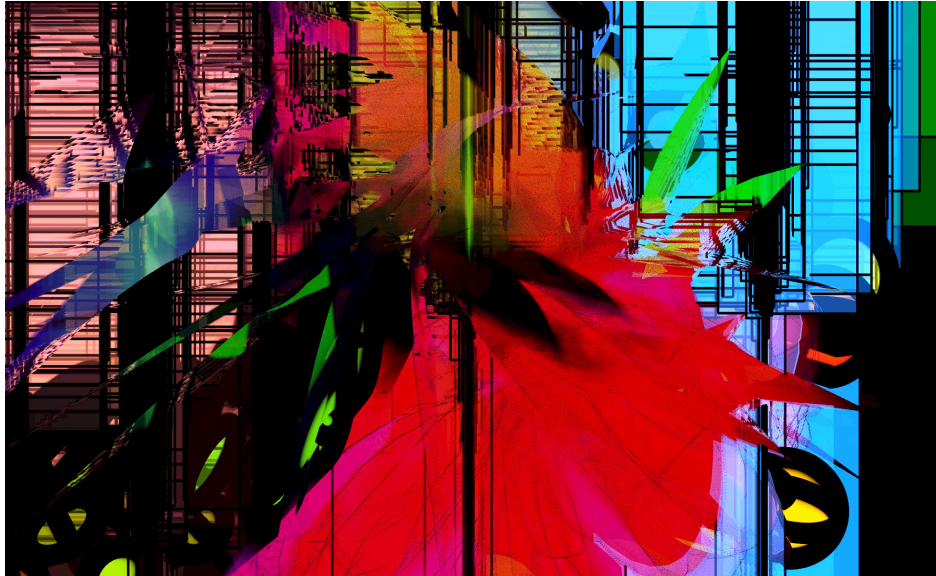
- Computational art requires as much creativity as painting, sculpting, etc.
- Innovation in computational art requires artists to be technical.
- Innovation in science requires technologists to be creative.
- All the artwork you have or will see tonight requires $\frac{1}{2}$ tech and $\frac{1}{2}$ art.
- **Great tools do not insure great art.**

Data Portraits

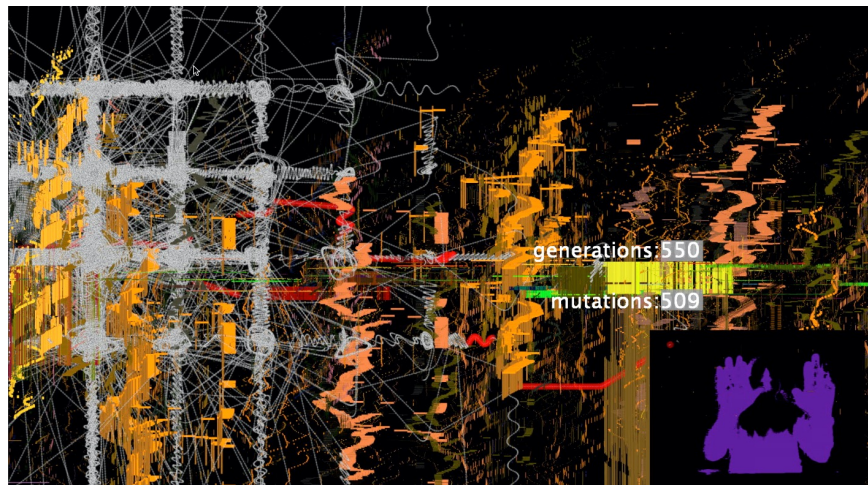
Example data portrait

Mining my DNA data I created a self-portrait
with audio created using Artificial Intelligence

The piece was acquired by the Stedelijk Museum,
Breda, The Netherlands



Data Portraits



Data, hardware, and software are *not my tools*
they are my *technical and aesthetic collaborators*.

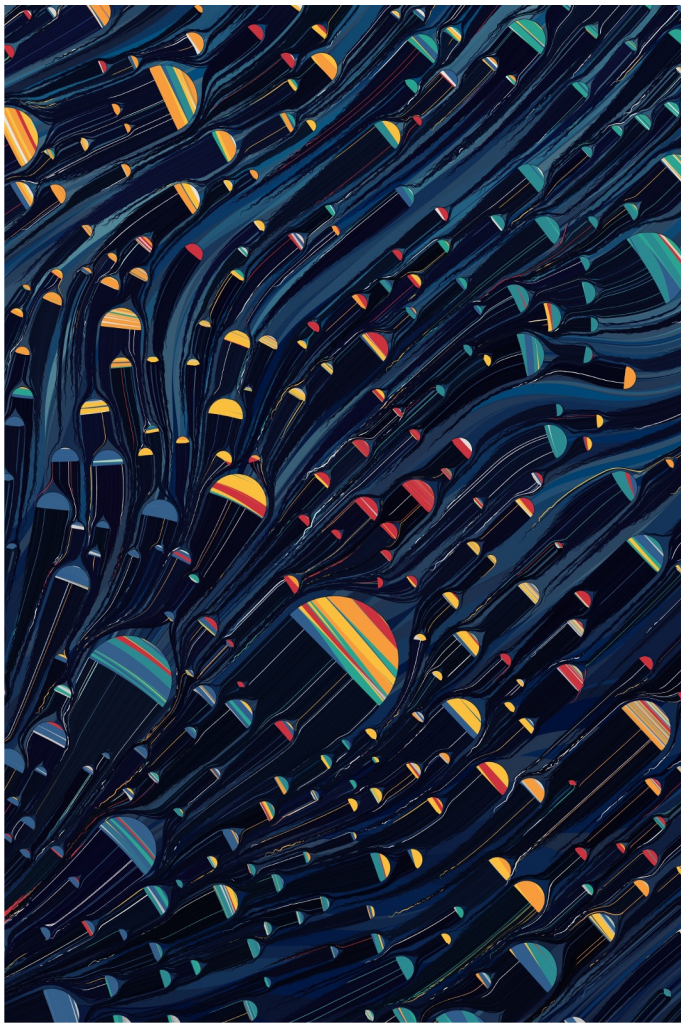
My work is a merging of *technology* and *art*.

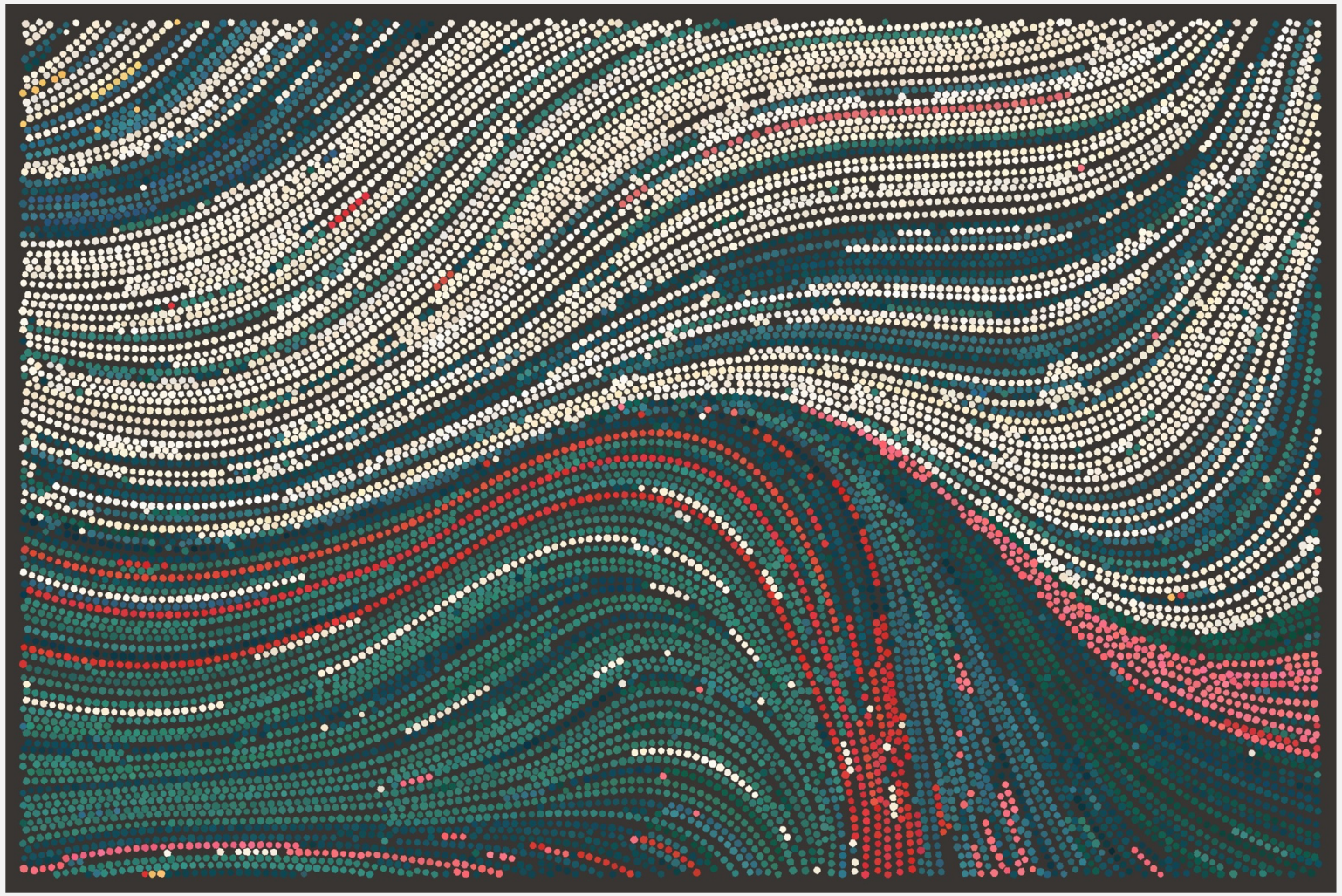
My art is *Representational Abstraction*.

Generative Art Project

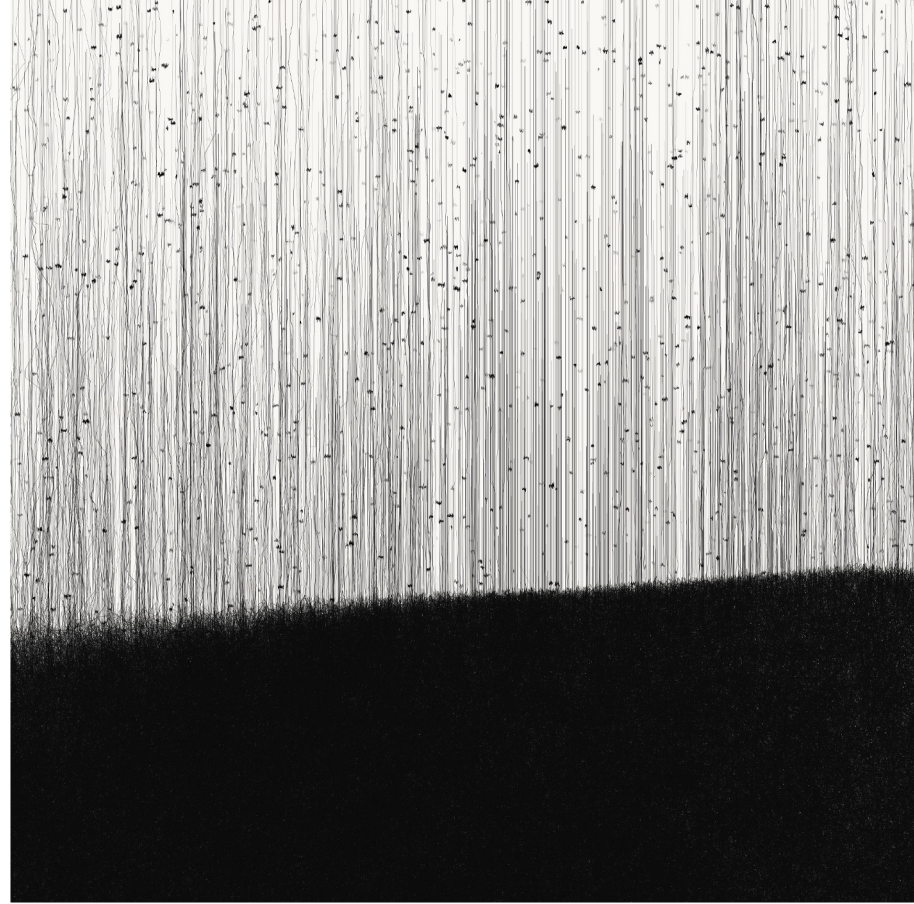
AI + Art

Thank You !



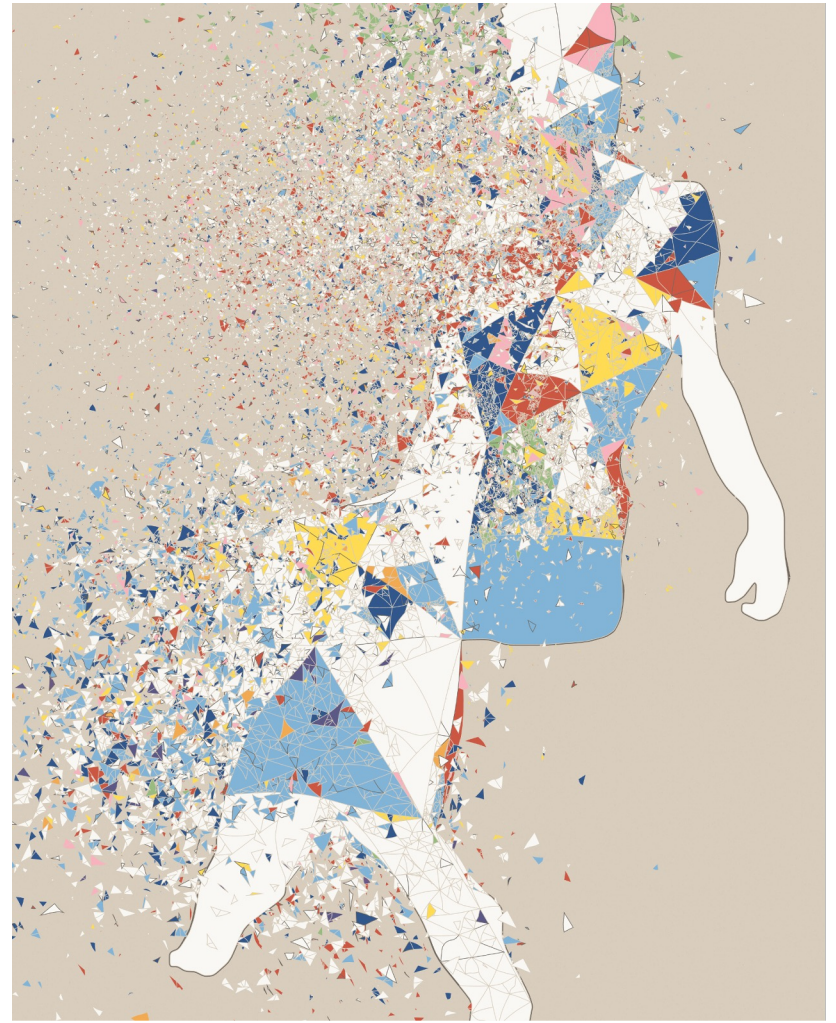


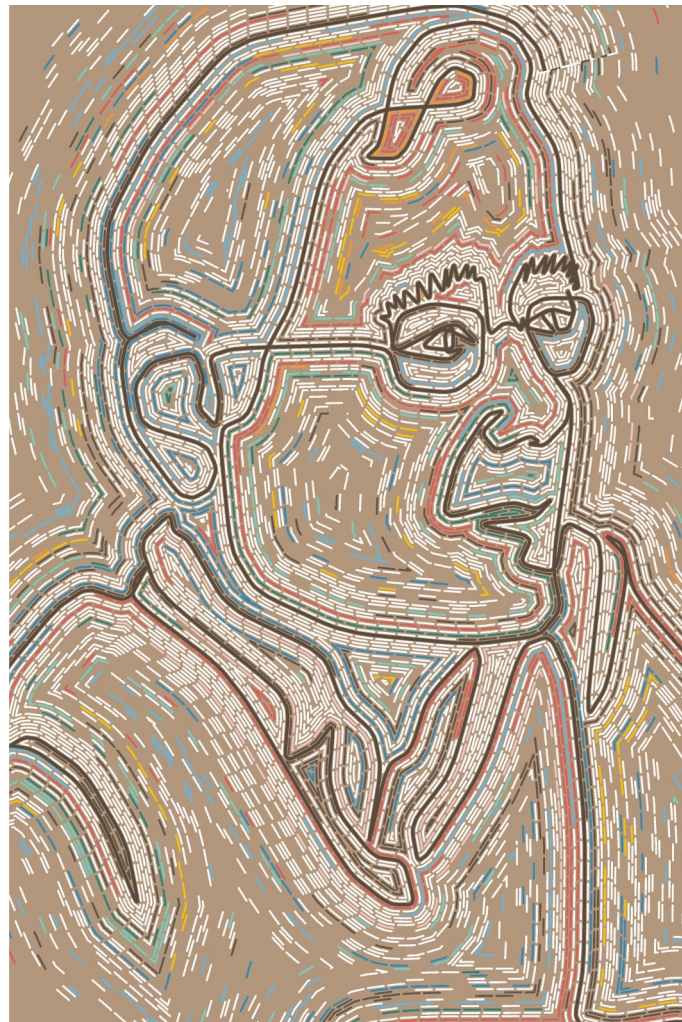


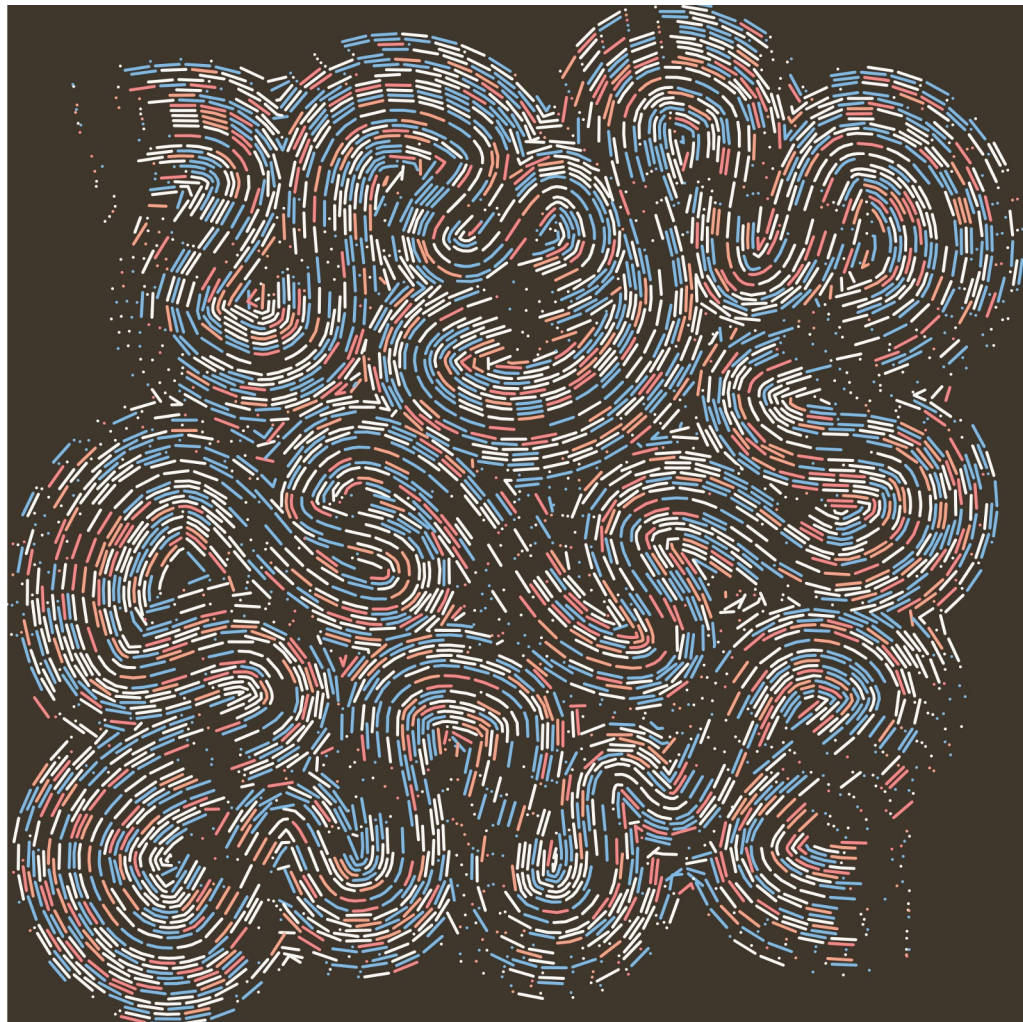
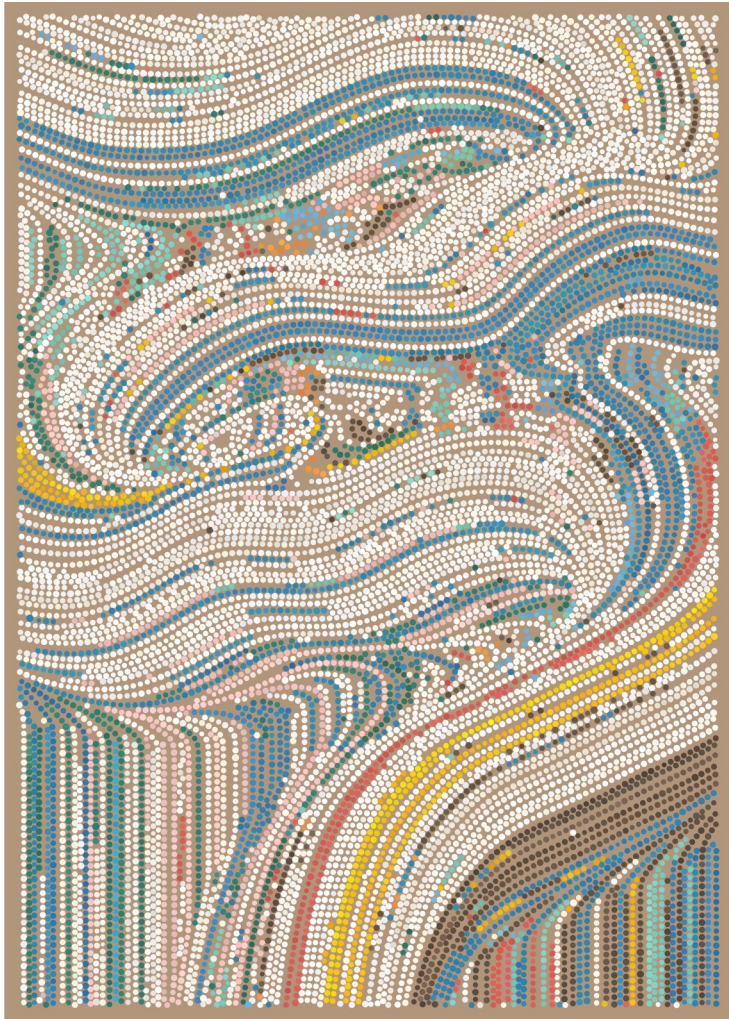


WHERE IS IT HEADED?

MERGING THE OLD AND NEW



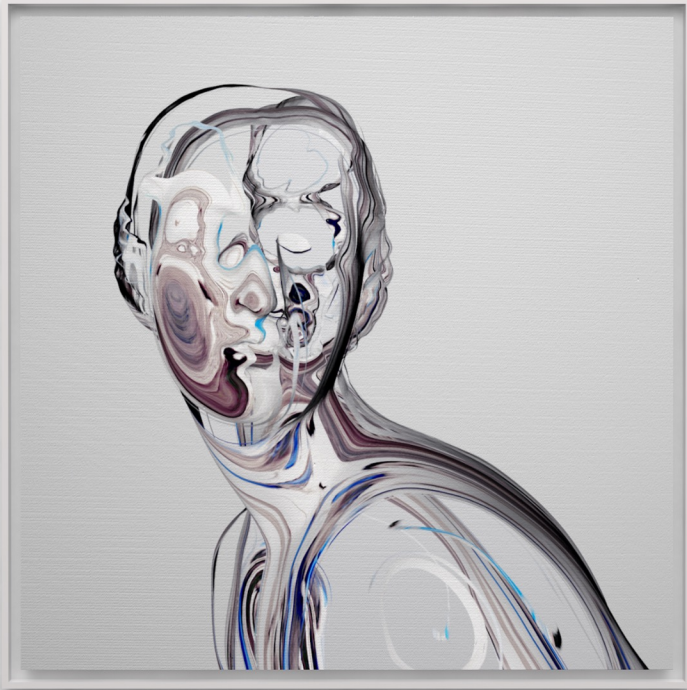








HELENA
SARIN



SOUGWEN
CHUNG



ROBBIE
BARRAT

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New Technology solves problems
New Art thinks originally

Together
Tech and art create inspired solutions

Action – learn tech, see art, be curious

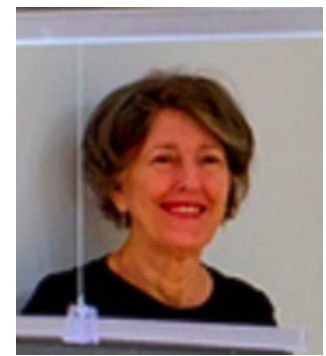
Q&A for
Technology + Arts: Data, Algorithms, and
Software Enable New Artistic Creativity



Moderator: Liz Whittington
Art Program Curator at SXSW
Executive Producer at
HOPE Events & HOPE Campaign



Julia Morton
Generative Art Project



Shirley Steele
Generative Art Project



James Pricer
Generative Art Project



Tyler Hobbs
Generative Art Project

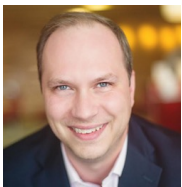
SXSW[®] ↓

And now, for the winning question,
and a free badge to SXSW 2020...

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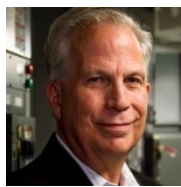
Jared Carl
Nvidia



Kirk Cesari
SetterRoche, LLP



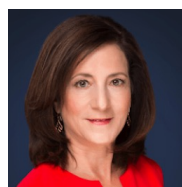
Kuan Collins
SAIC



Brad Englert
*Brad Englert
Advisory*



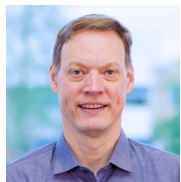
Hugh Forrest
SXSW



Sherri Greenberg
LBJ School



Amber Gunst
*Austin Technology
Council*



Eric Hennehoefer
Arm



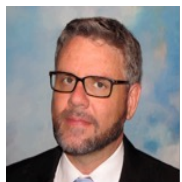
Mike Ignatowski
Senior Fellow,
AMD



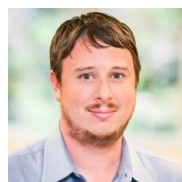
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*Atchley &
Associates*



Mitch Jacobson
*Austin
Technology
Incubator*



Karl Popham
Austin Energy



Matt Sanchez
CognitiveScale



Marie Todd
Slalom Consulting



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ON TECHNOLOGY & SOCIETY

@AustinForum

#artAF

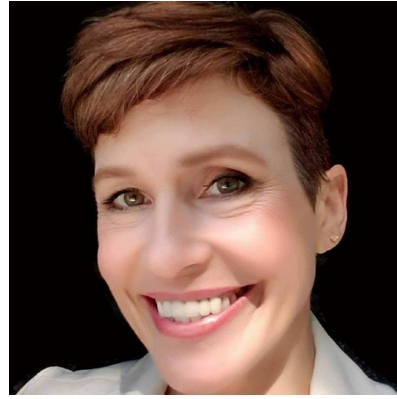
The AF Team



Jay Boisseau
Executive Director



Jessica Sager
Managing Director



Vanessa Burnette
Event Manager



John Lockman
Tech Guru

And thank you to tonight's volunteers!

Help Others Get Access to Internet Resources: Donate Your Devices to **Austin Pathways!**



Austin Pathways will provide them to deserving Austinites!

The Austin Forum will transfer donations *every month!*

- ✓ Kids can do their homework at home
- ✓ Parents/families can take the Digital Census
- ✓ can check their child's progress online
- ✓ Families can fully participate in the #SmartCity



We collected 250+ devices 2018-19—We want to surpass that in 2020!

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- Step #1 Go to www.amplifyatx.org
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Providing scholarships to eligible residents who are living in HACA's public housing communities and participants of its Housing Choice Voucher program.

[#RockAmplify](#) [#AmplifyAustinPathways](#)
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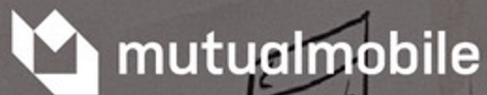
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March 16th
2pm

Accenture Austin
319 Congress Ave, Ste. 300
RSVP: bit.ly/ATA-March16



Event space donated by:



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We'll talk here until 8:15pm, then continue at **Trifecta on 3rd**



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