

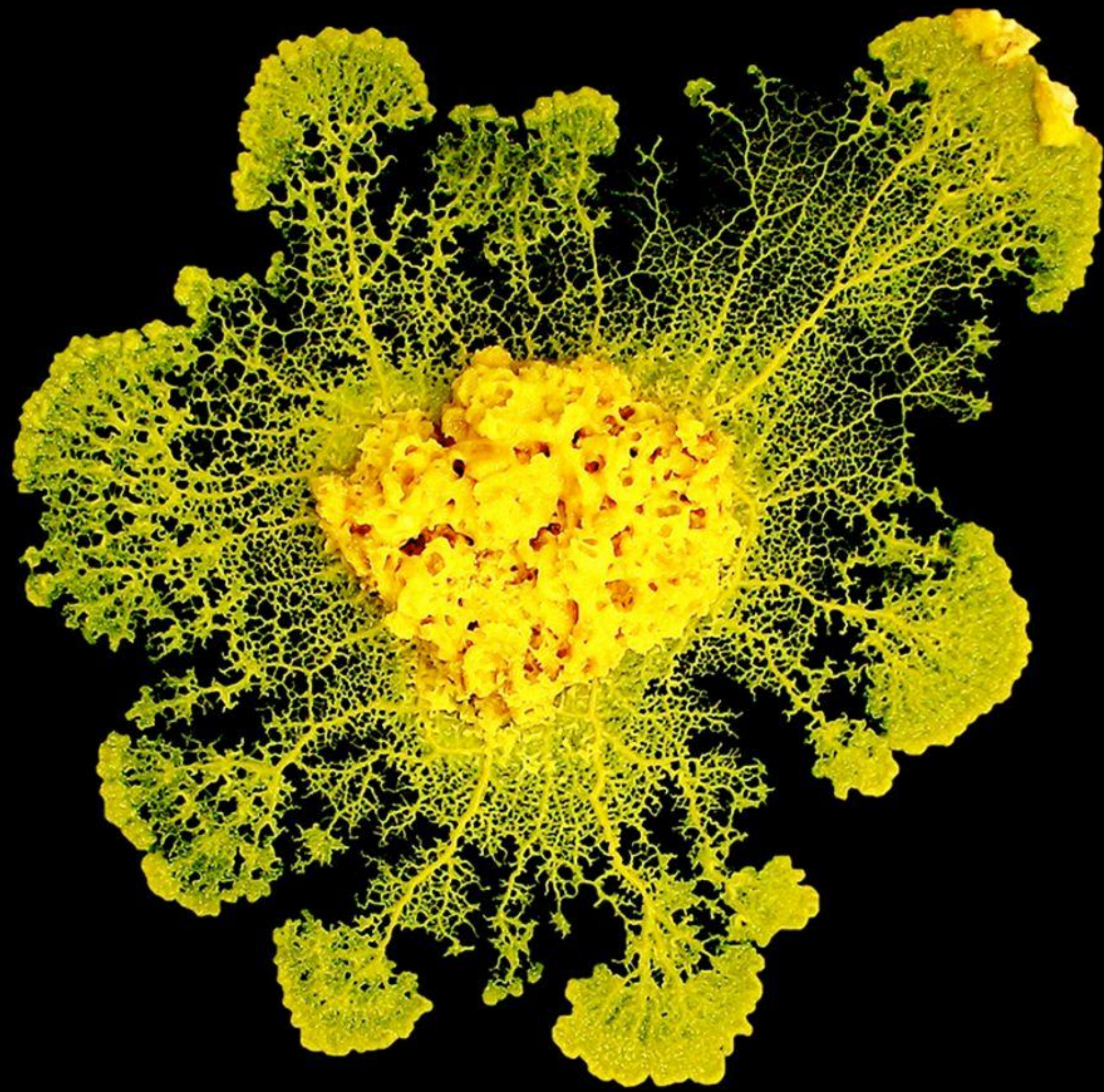


# Physarum

Slime molds for everyone!

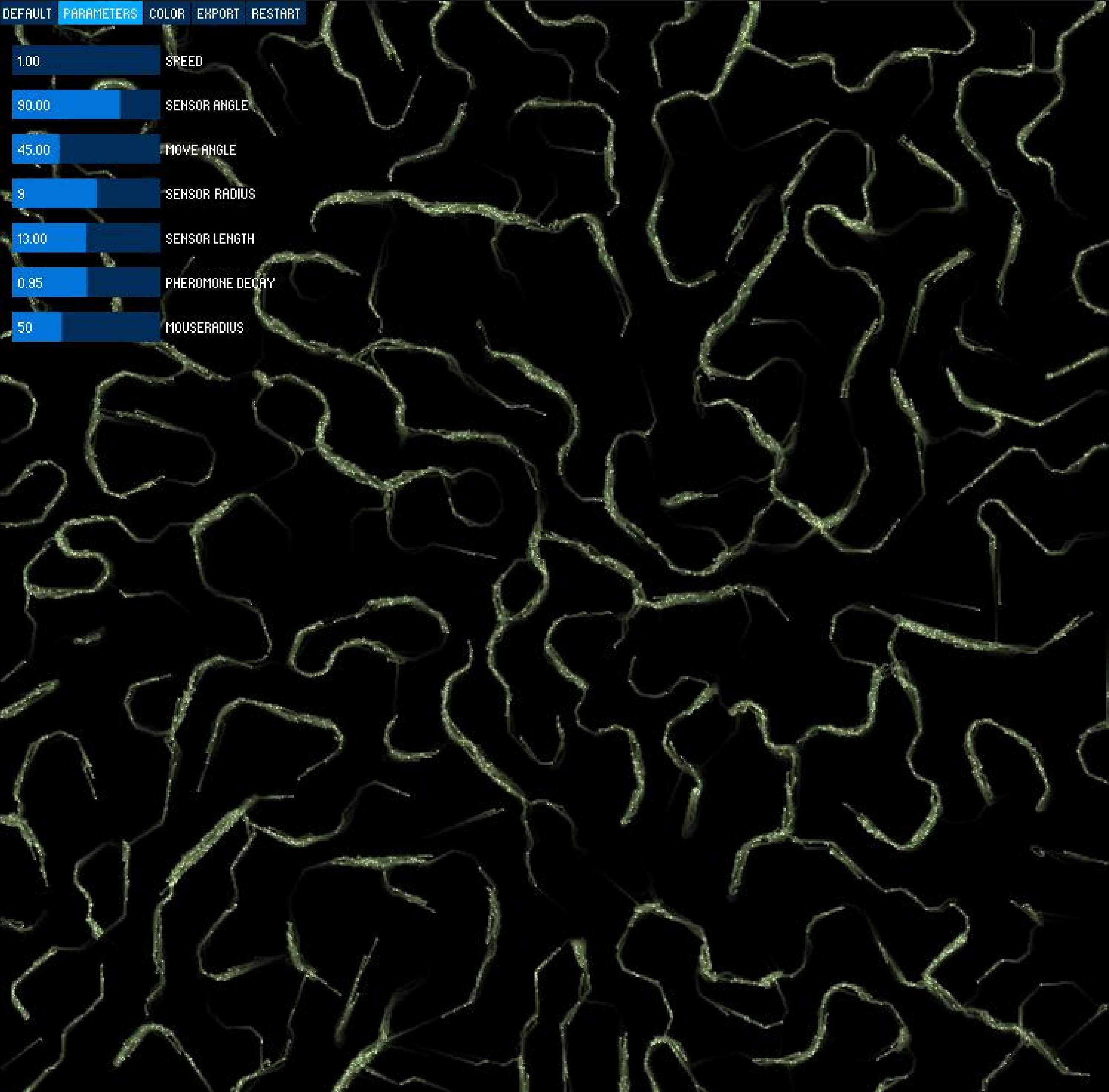
Xixi Zhou / Theodor Peifer

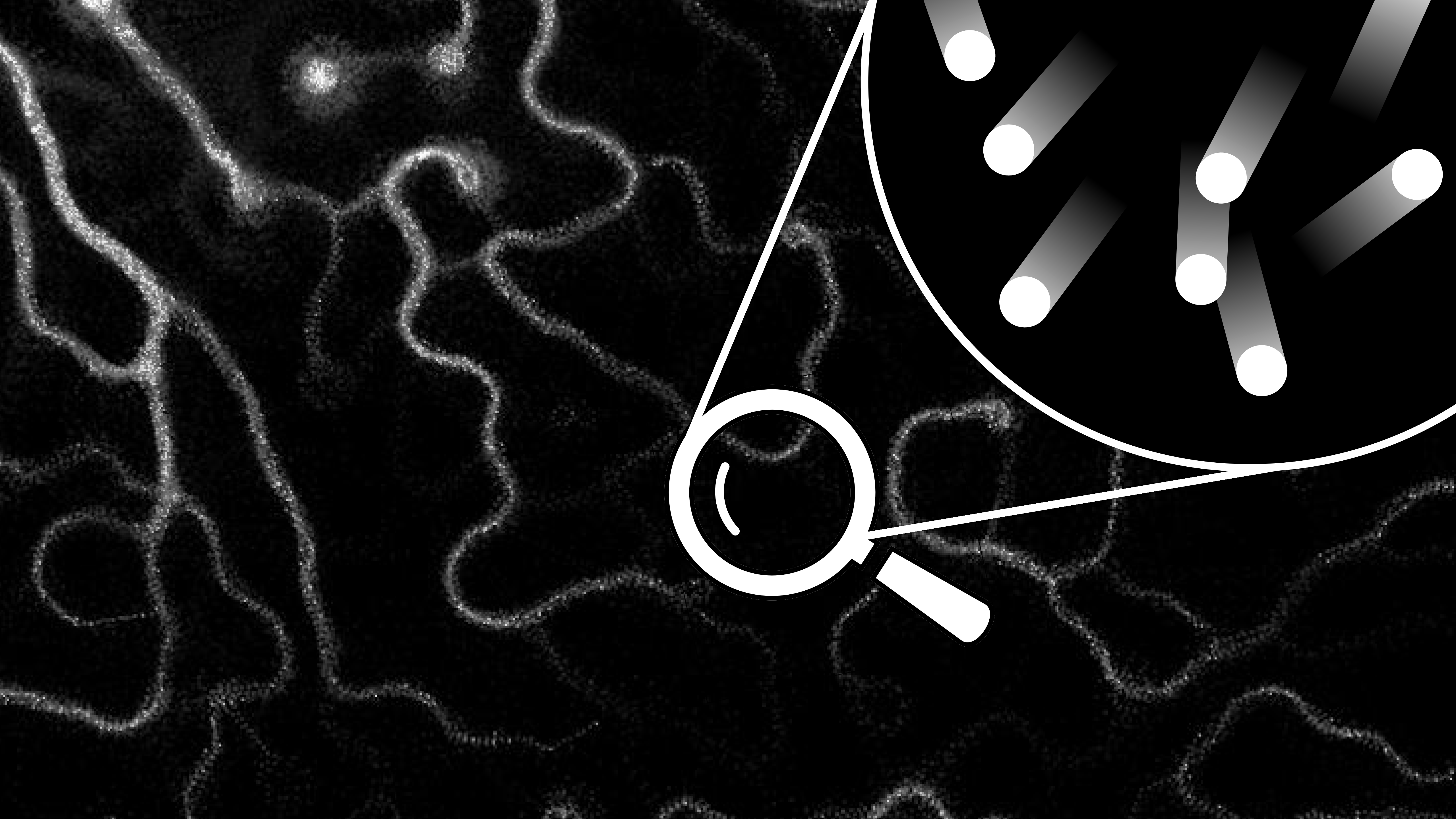




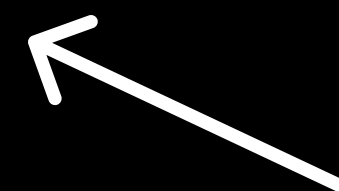
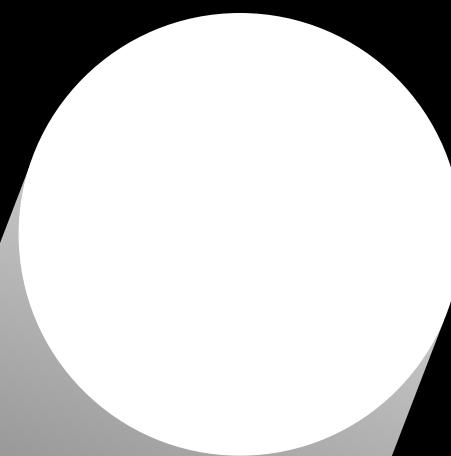
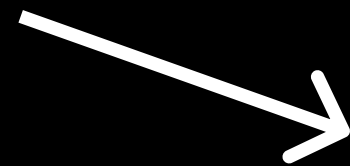


DEFAULT PARAMETERS COLOR EXPORT RESTART

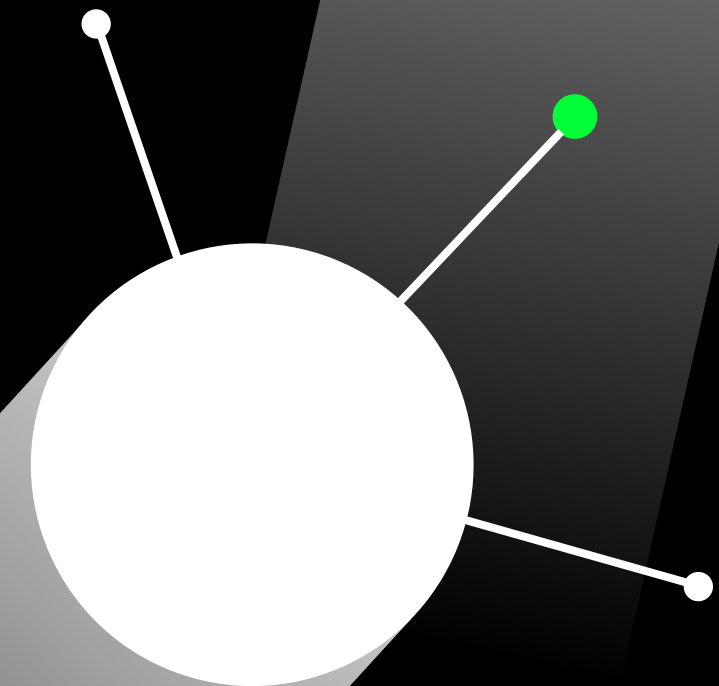
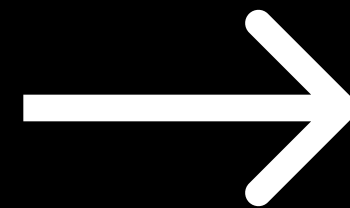
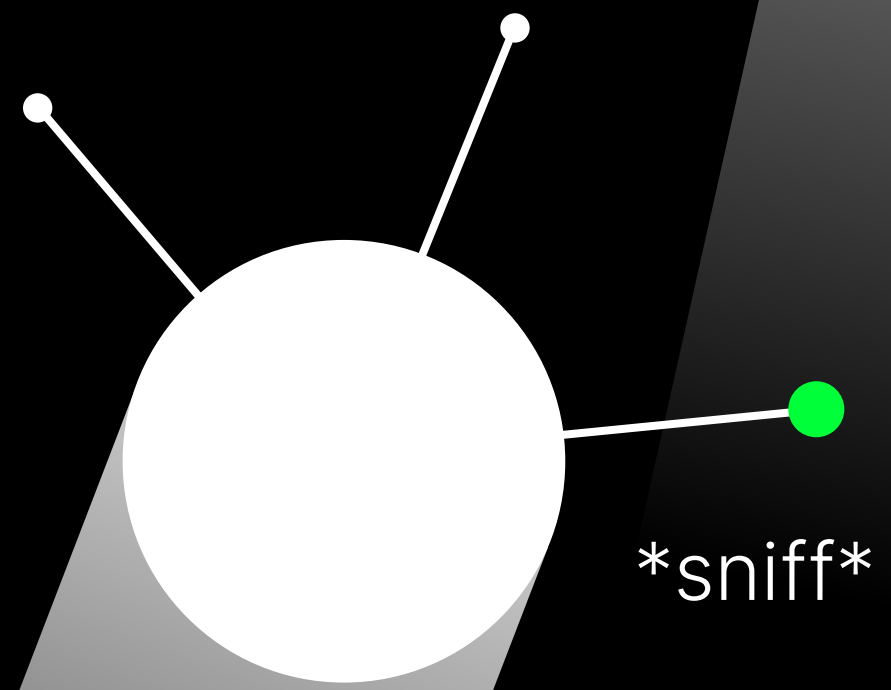




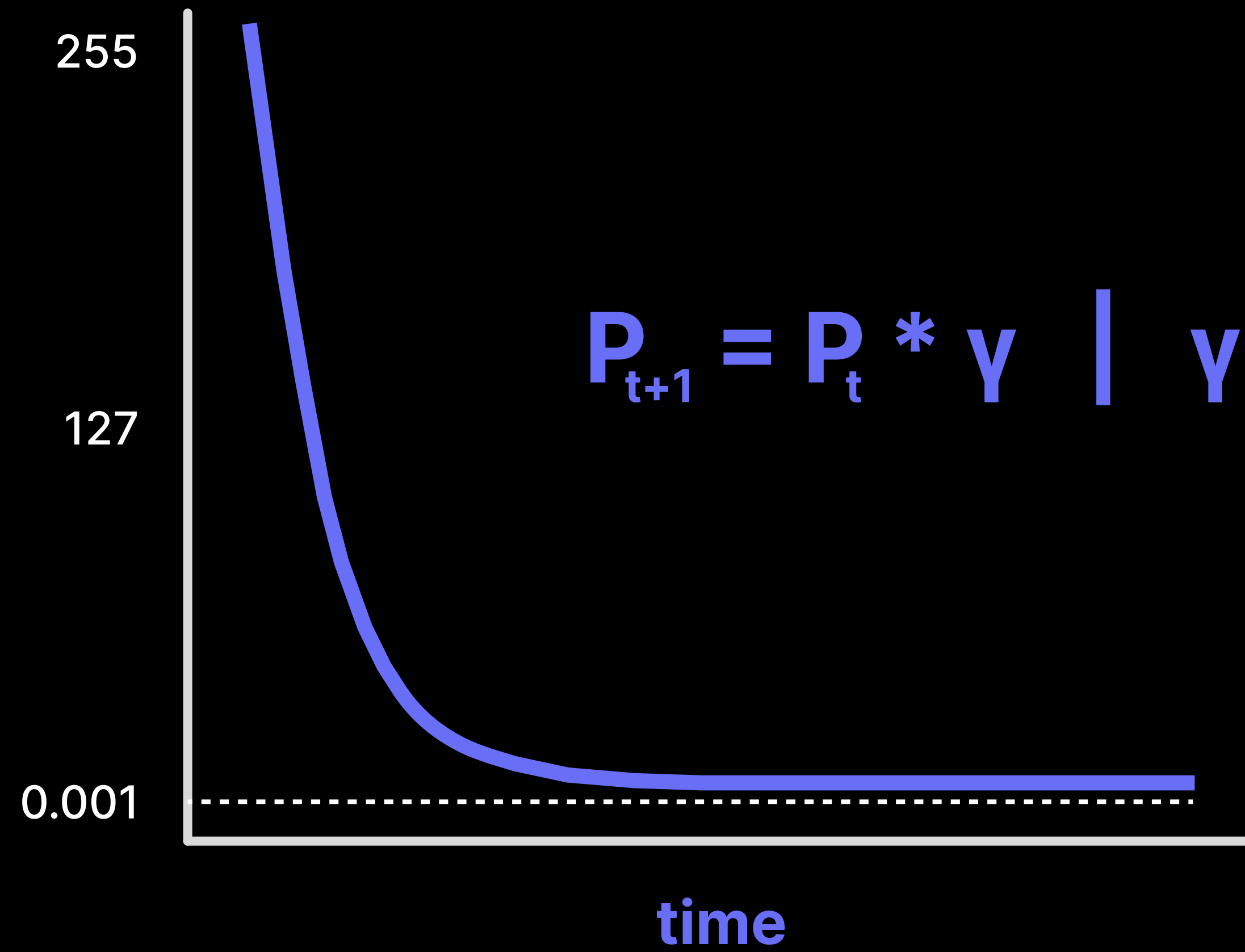
cell



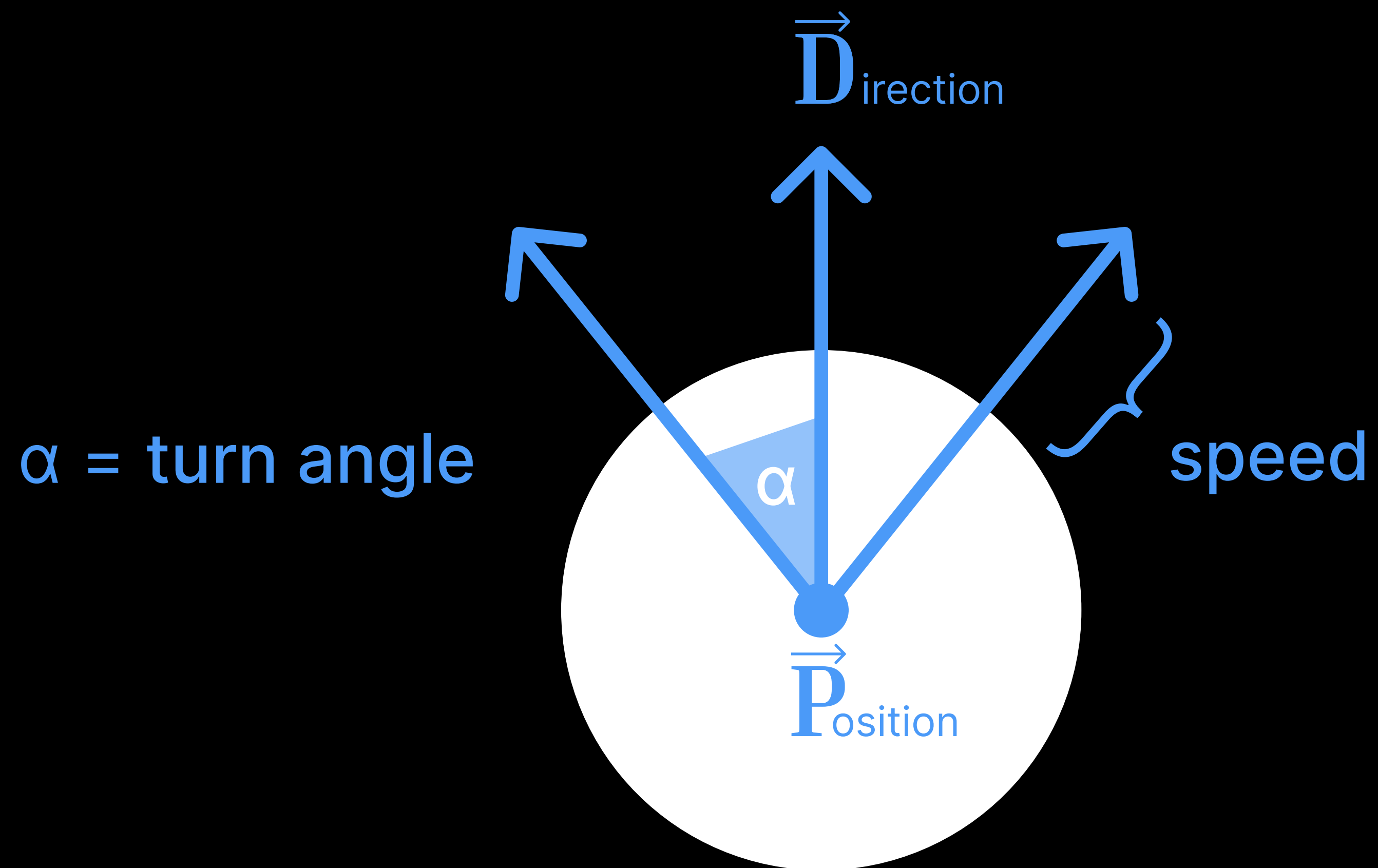
pheromone trail



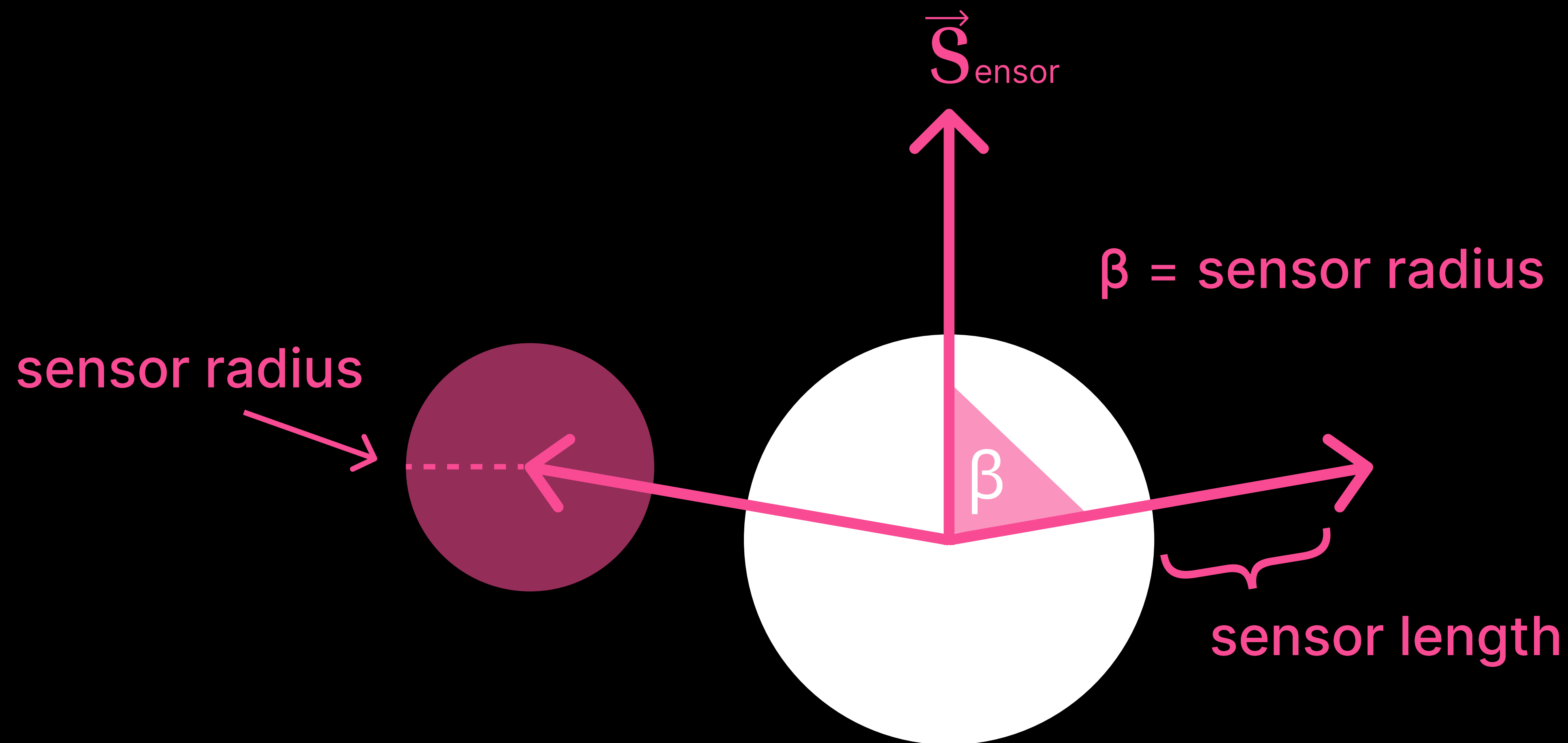
pheromone  
intensity

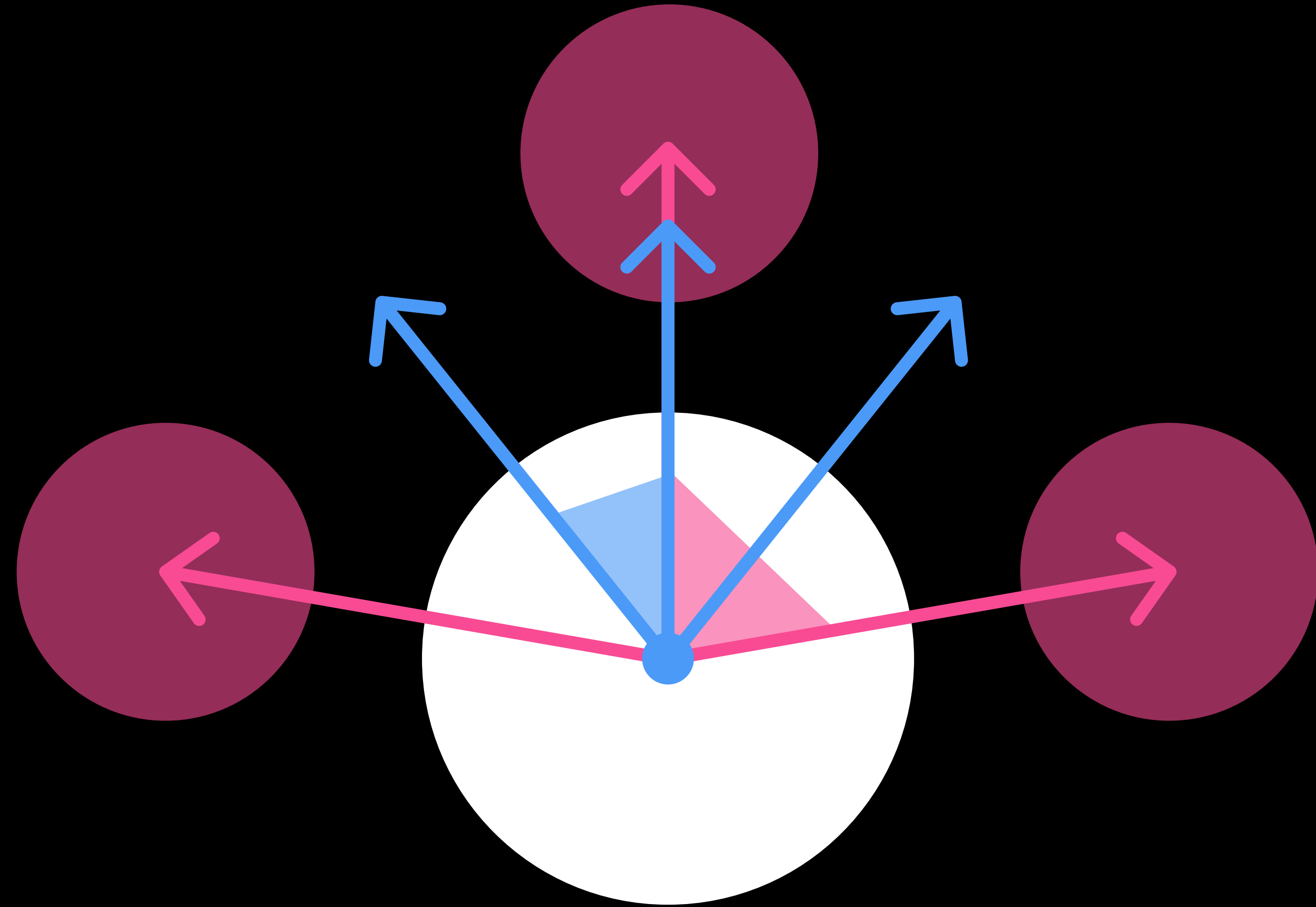


$$P_{t+1} = P_t * \gamma \quad | \quad \gamma \approx 0.95$$









cellPositions = { Vec(x, y), Vec(x, y), ... Vec(x, y) }

cellDirections = { Vec(x, y), Vec(x, y), ... Vec(x, y) }

pheromones =

	1	2	3	...	...	...	WIDTH
1	$a_{11}$	$a_{12}$	$a_{13}$	...	...	...	$a_{1n}$
2	$a_{21}$	$a_{22}$	$a_{23}$	...	...	...	$a_{2n}$
3	$a_{31}$	$a_{32}$	$a_{33}$	...	...	...	$a_{3n}$
...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...
...	...	...	...	...	...	...	...
HEIGHT	$a_{m1}$	$a_{m2}$	$a_{m3}$	...	...	...	$a_{mn}$

DEFAULT	PARAMETERS	COLOR	EXPORT	RESTART
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DEFAULT PARAMETERS **COLOR** EXPORT RESTART



Color gradient visualization showing a spectrum from blue to red/purple.

DEFAULT PARAMETERS COLOR **EXPORT** RESTART

EXPORT

SELECT FOLDER

DEFAULT PARAMETERS COLOR **EXPORT** RESTART

SPAWN IN CIRCLE?

200 SPAWN RADIUS

0 SPAWN INNER RADIUS

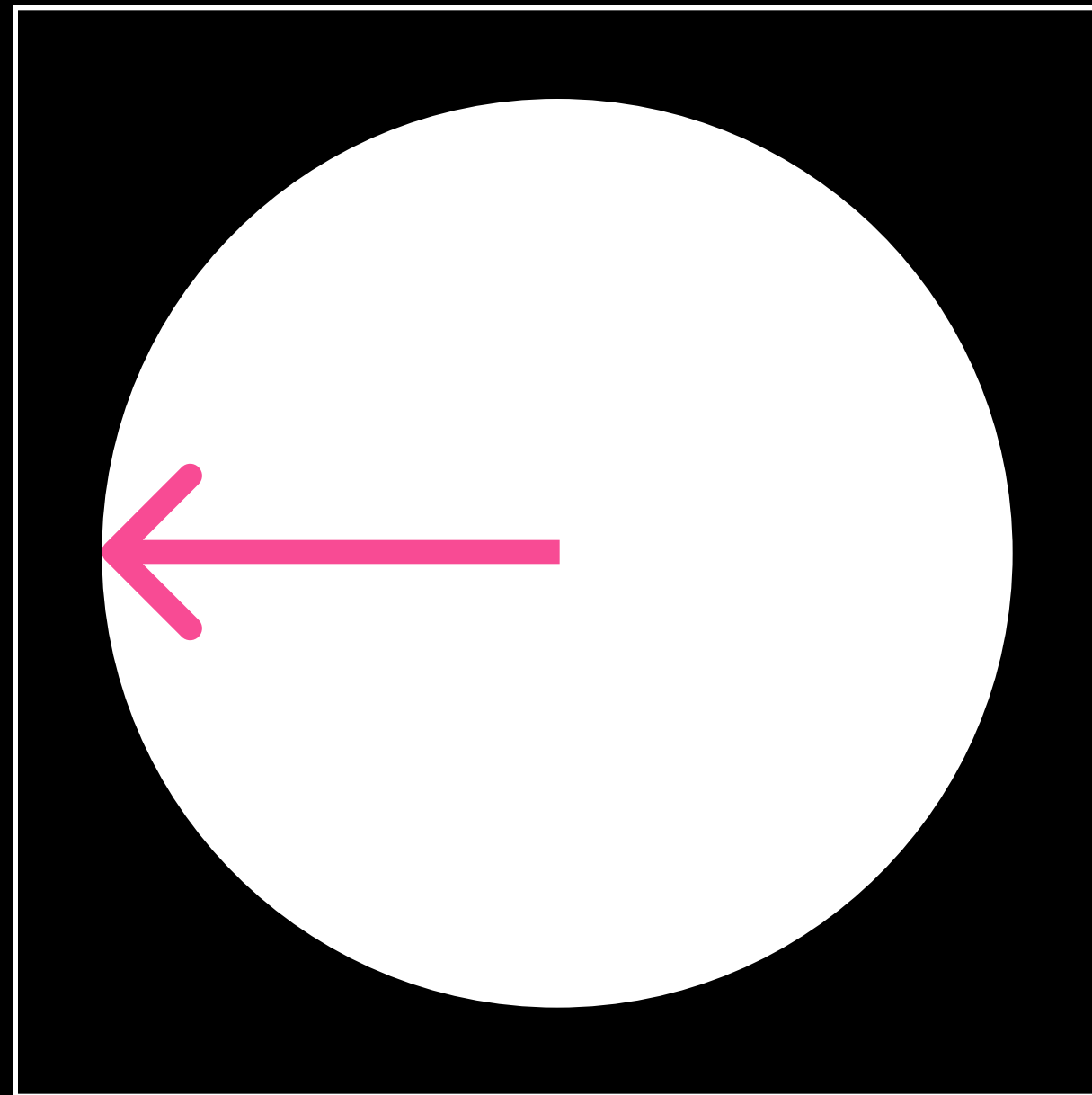
INIT. DIRECTION ('RANDOM', 'CENTER', 'OUT')

CELL AMOUNT (MAX. 250K)

RESTART

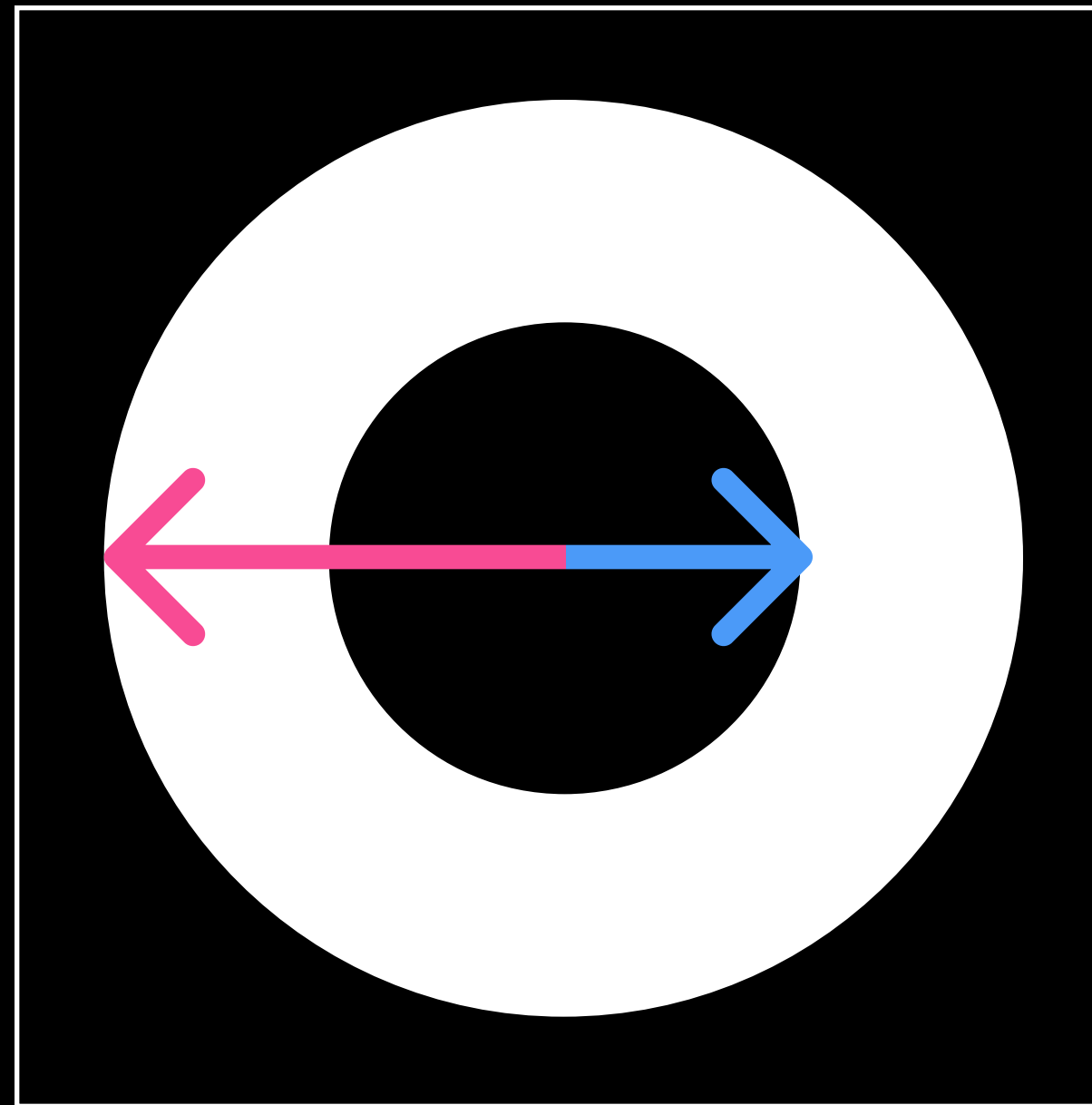
## initial spawn formation:

canvas



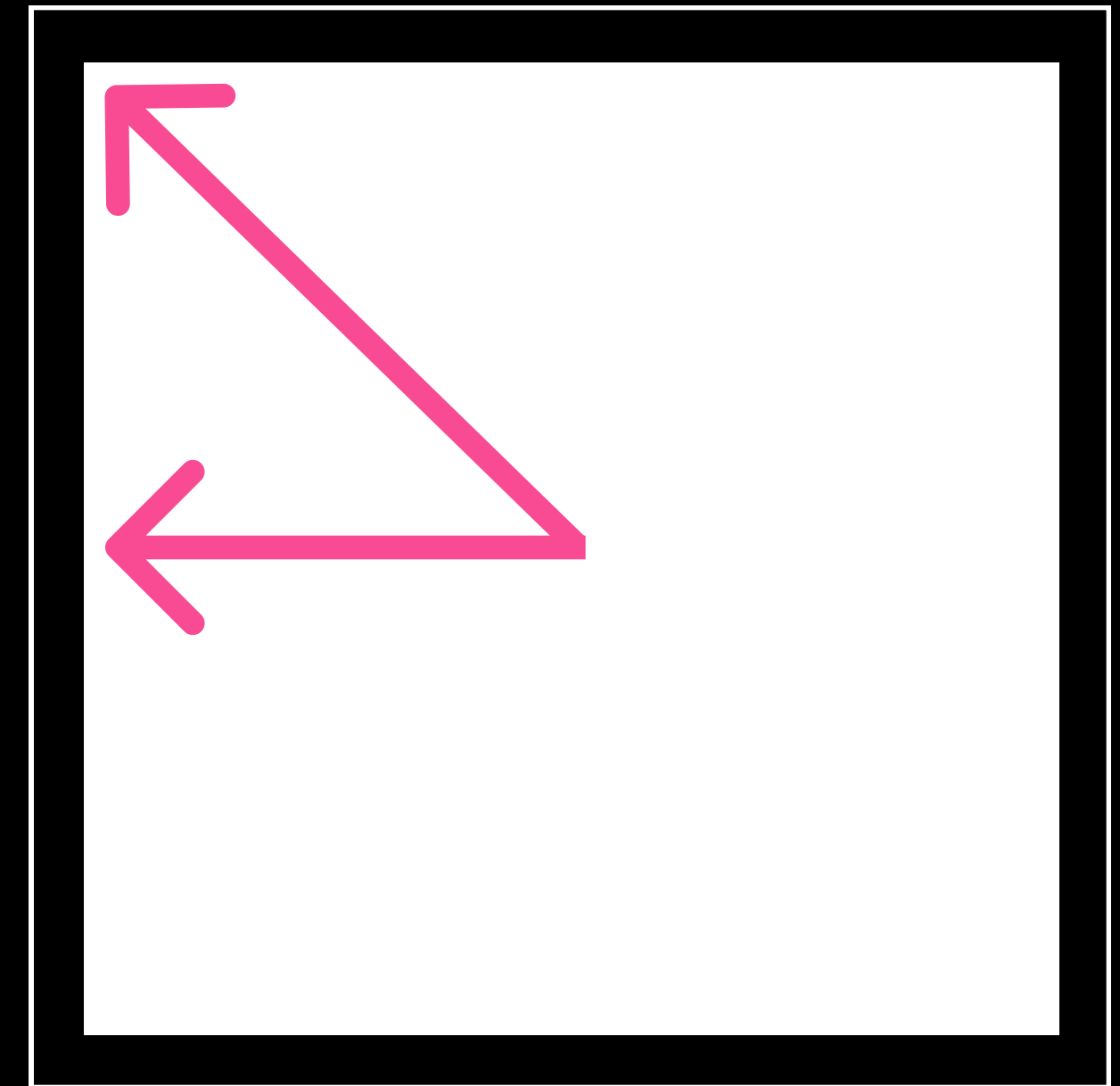
spawn radius

canvas



spawn radius  
inner radius

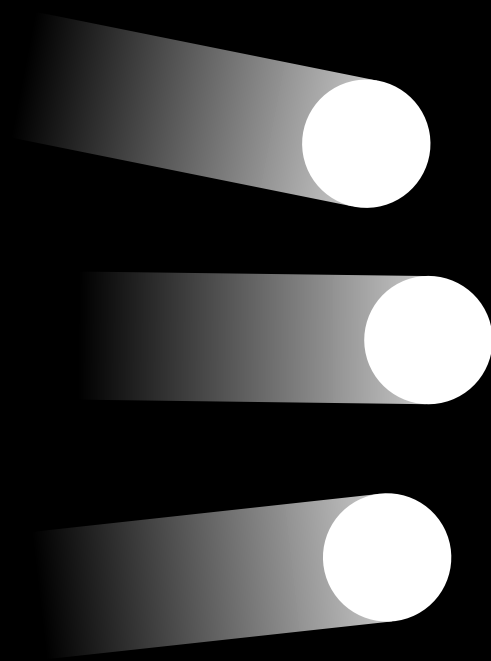
canvas



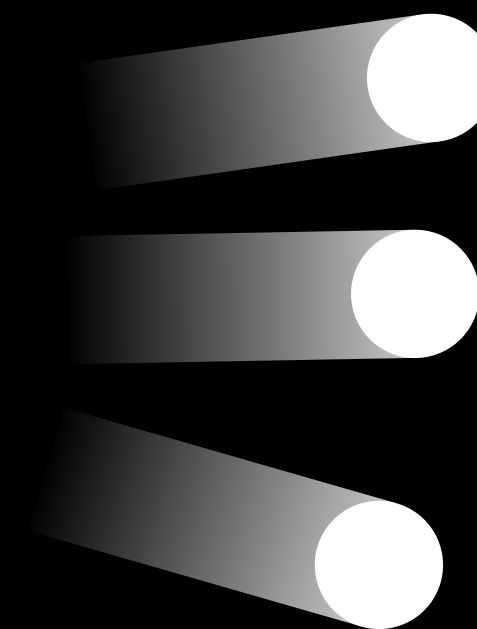
entire canvas

# initial directions:

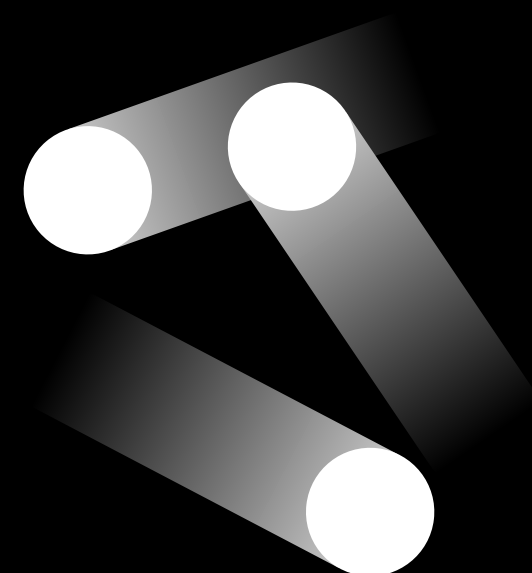
Option 1: "center"



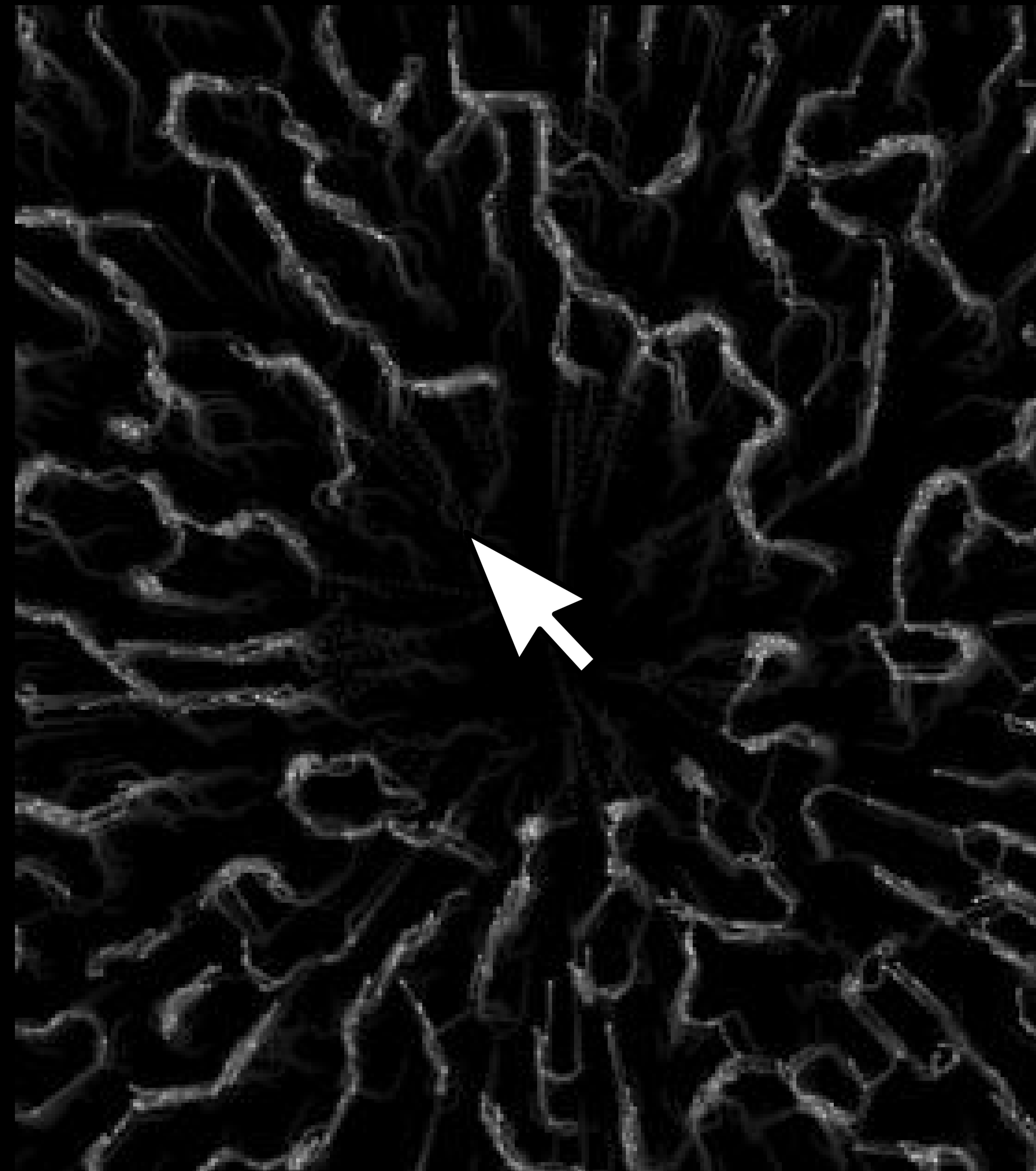
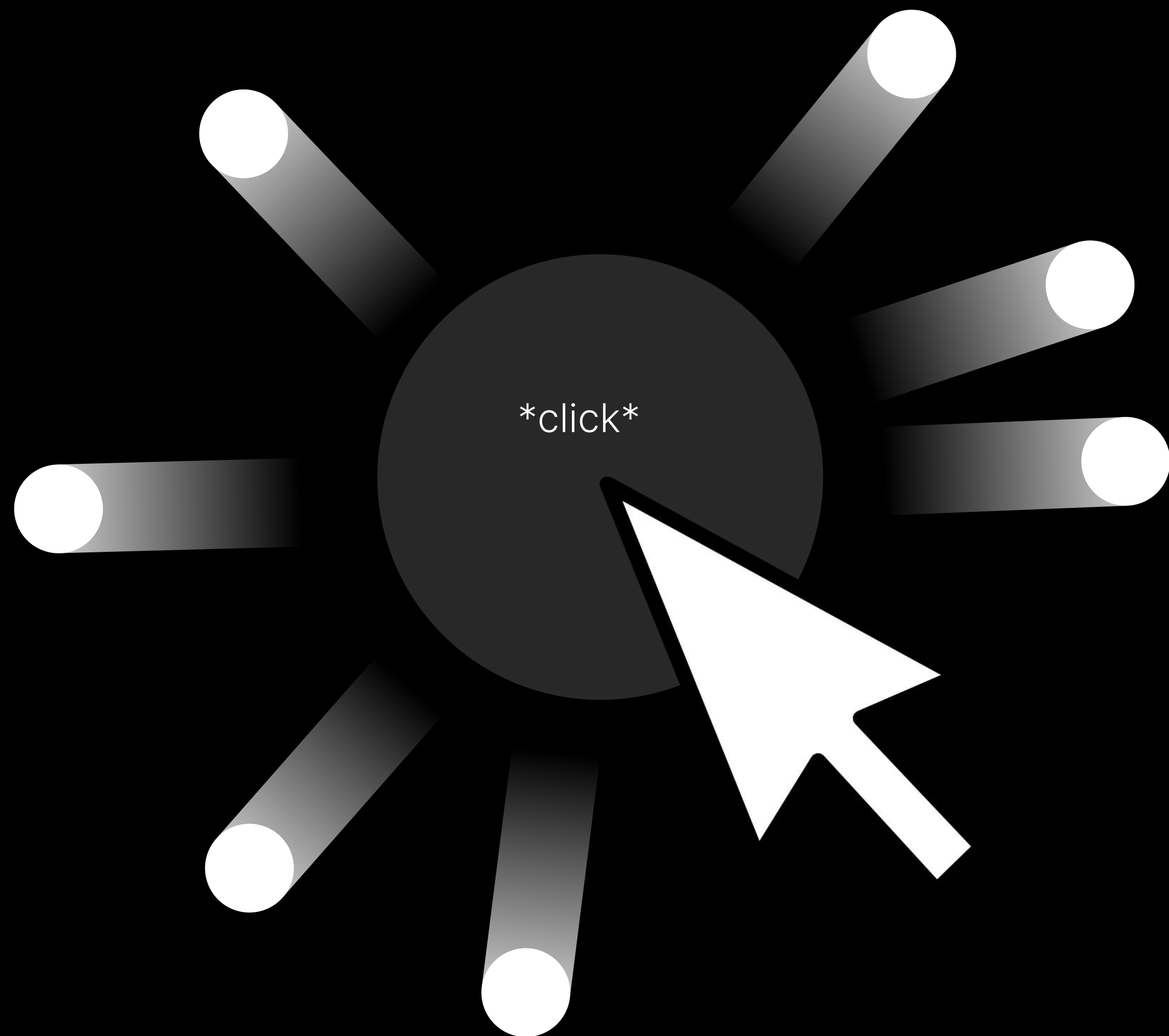
Option 2: "out"



canvas center



Option 3: "random"





DEFAULT PARAMETERS COLOR EXPORT RESTART

- 1.54

SPEED
- 34.20

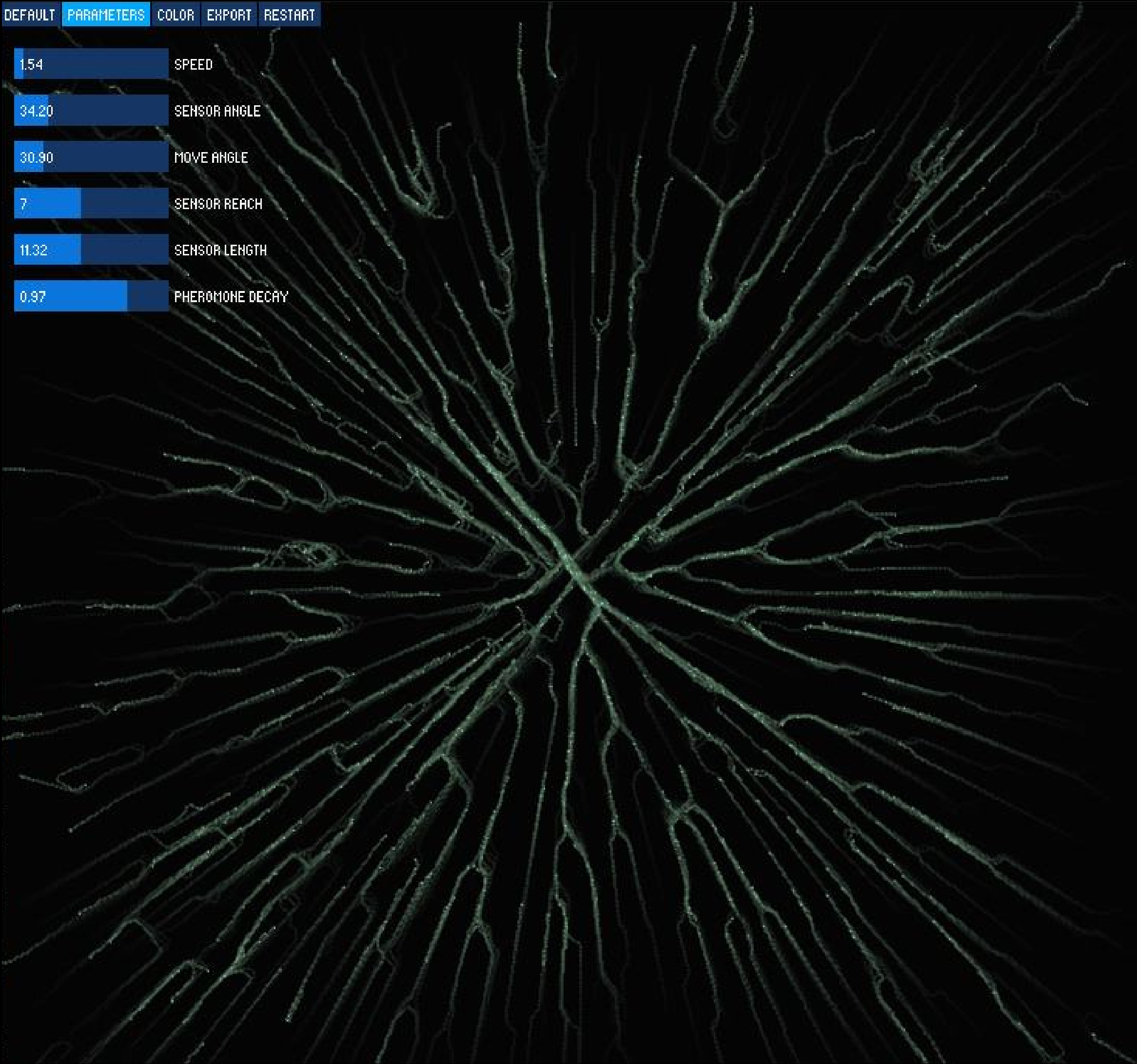
SENSOR ANGLE
- 30.90

MOVE ANGLE
- 7

SENSOR REACH
- 11.32

SENSOR LENGTH
- 0.97

PHEROMONE DECAY



DEFAULT PARAMETERS COLOR EXPORT RESTART

- 4.33

SPEED
- 90.00

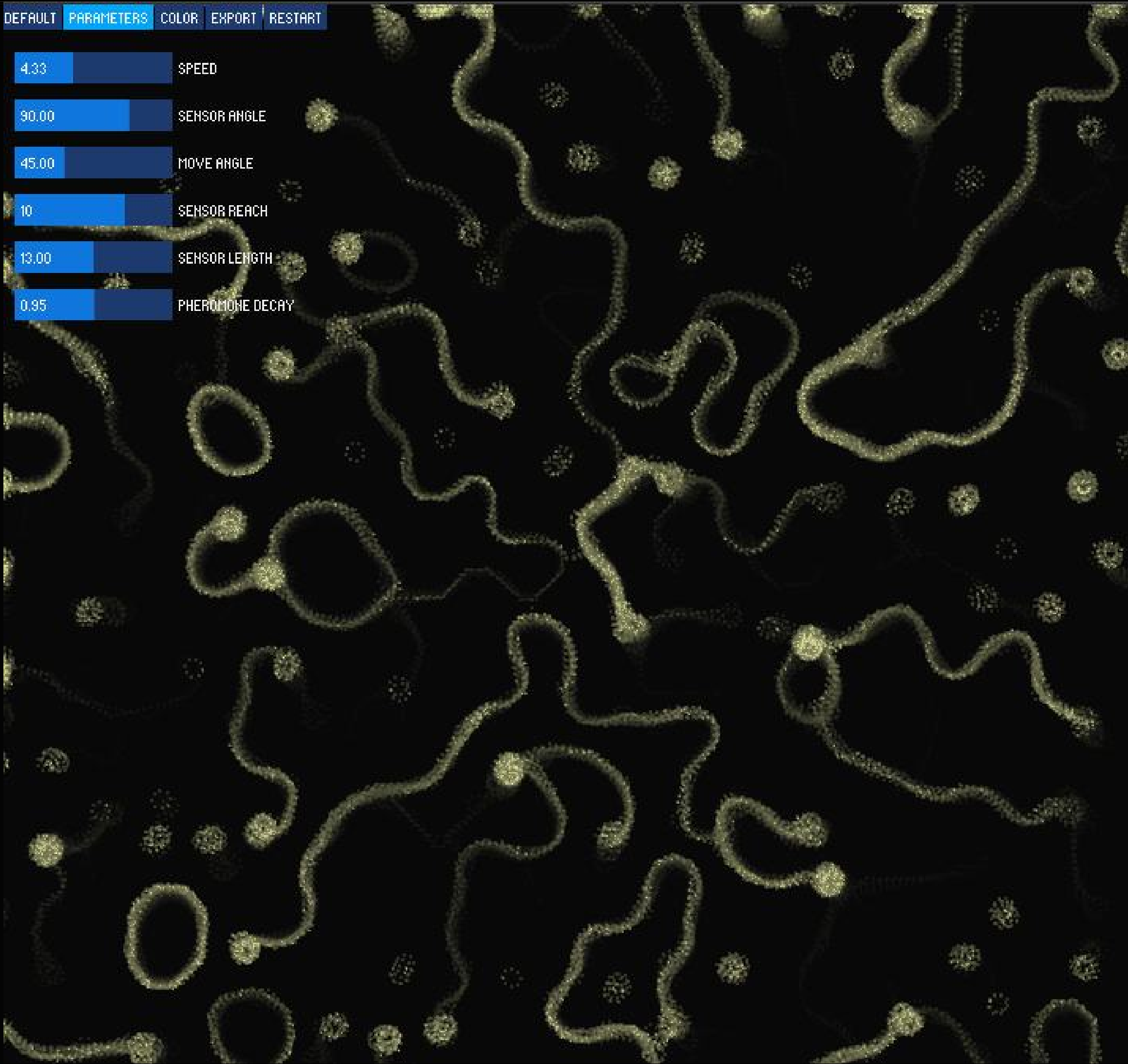
SENSOR ANGLE
- 45.00

MOVE ANGLE
- 10

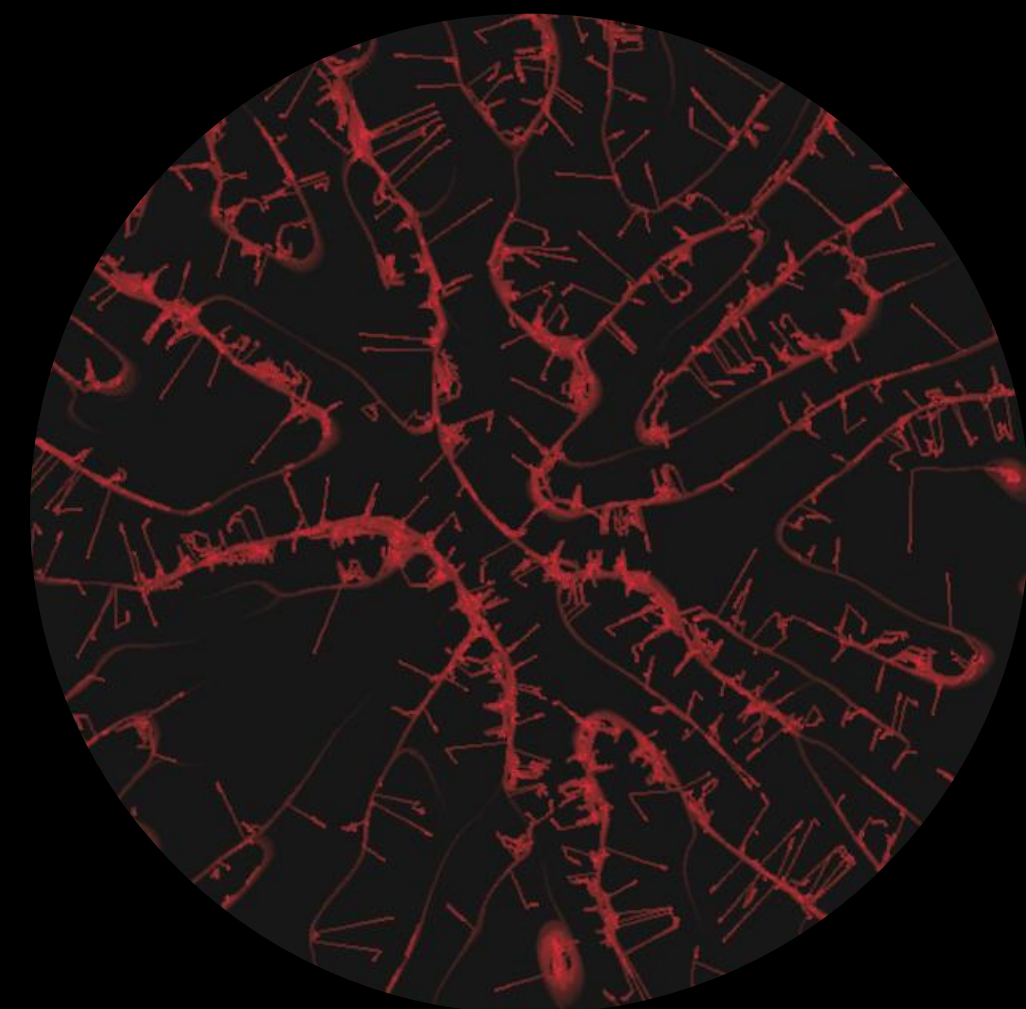
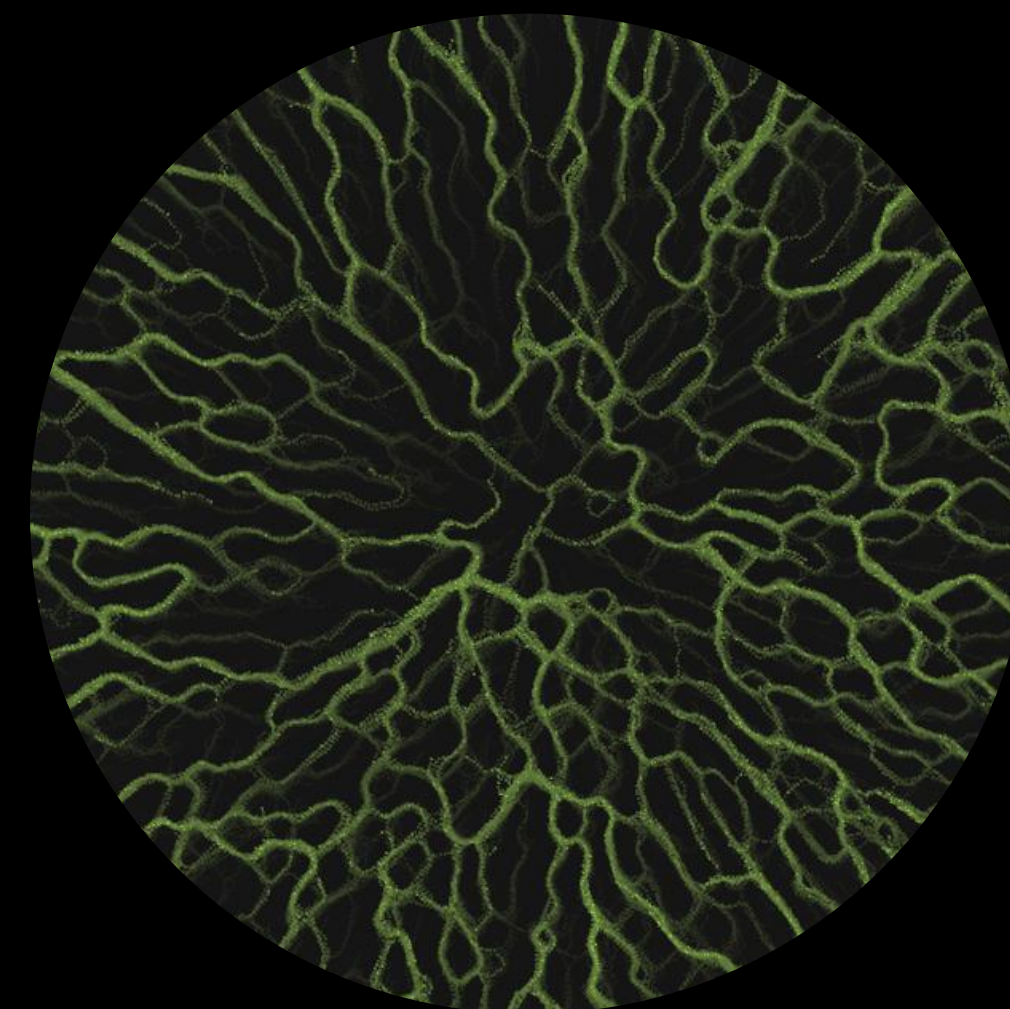
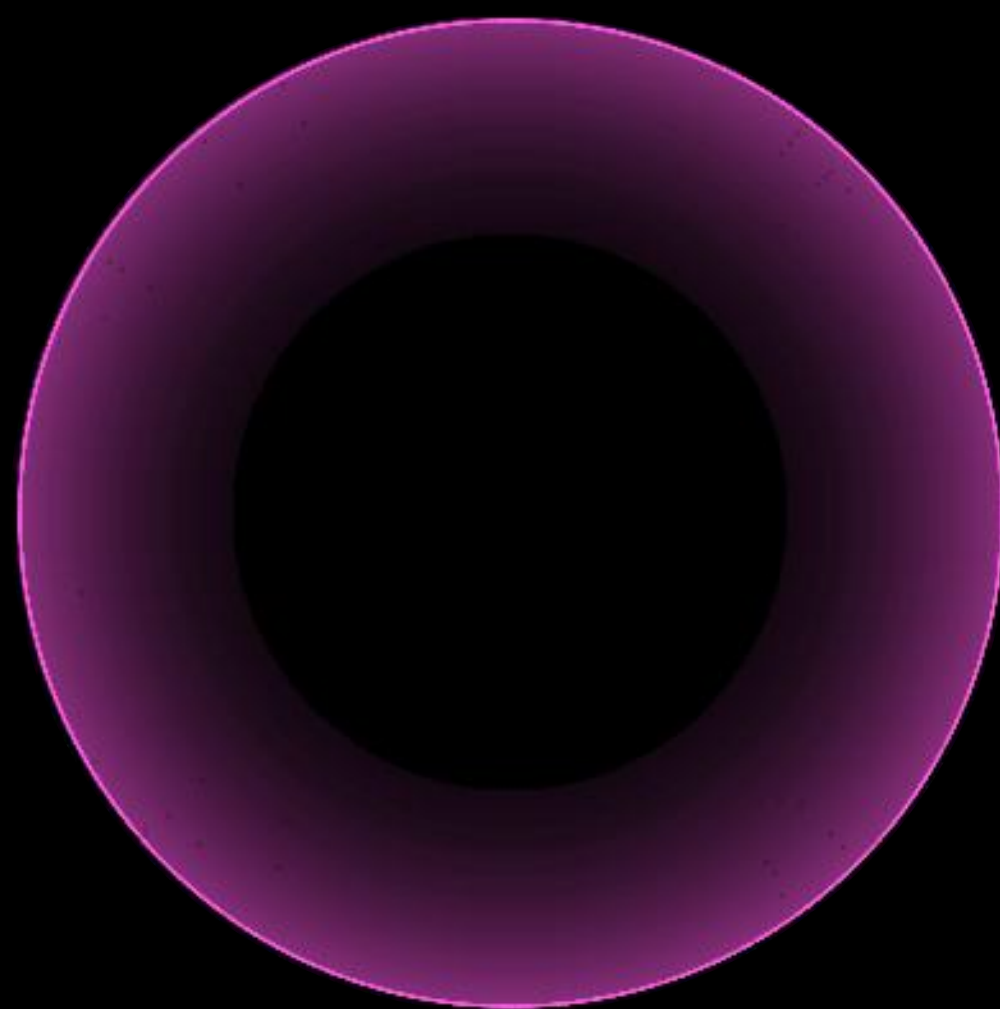
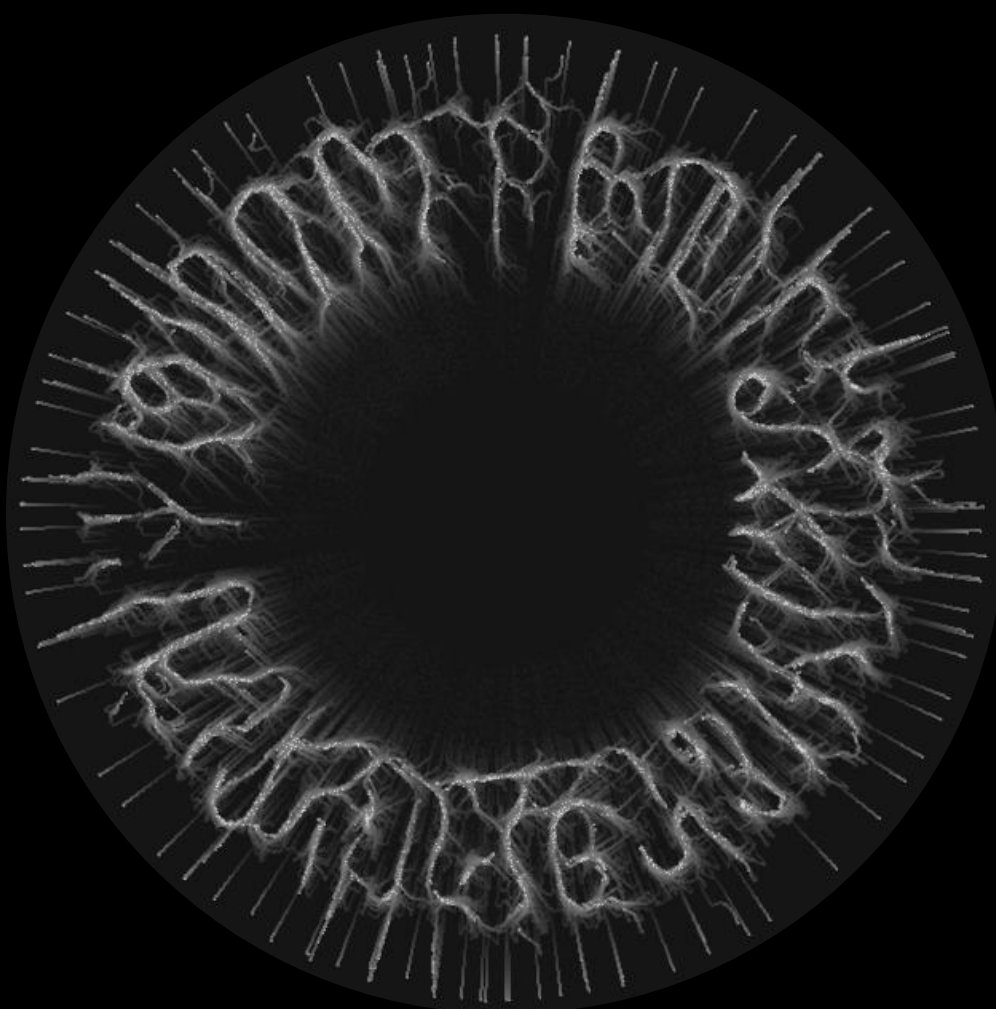
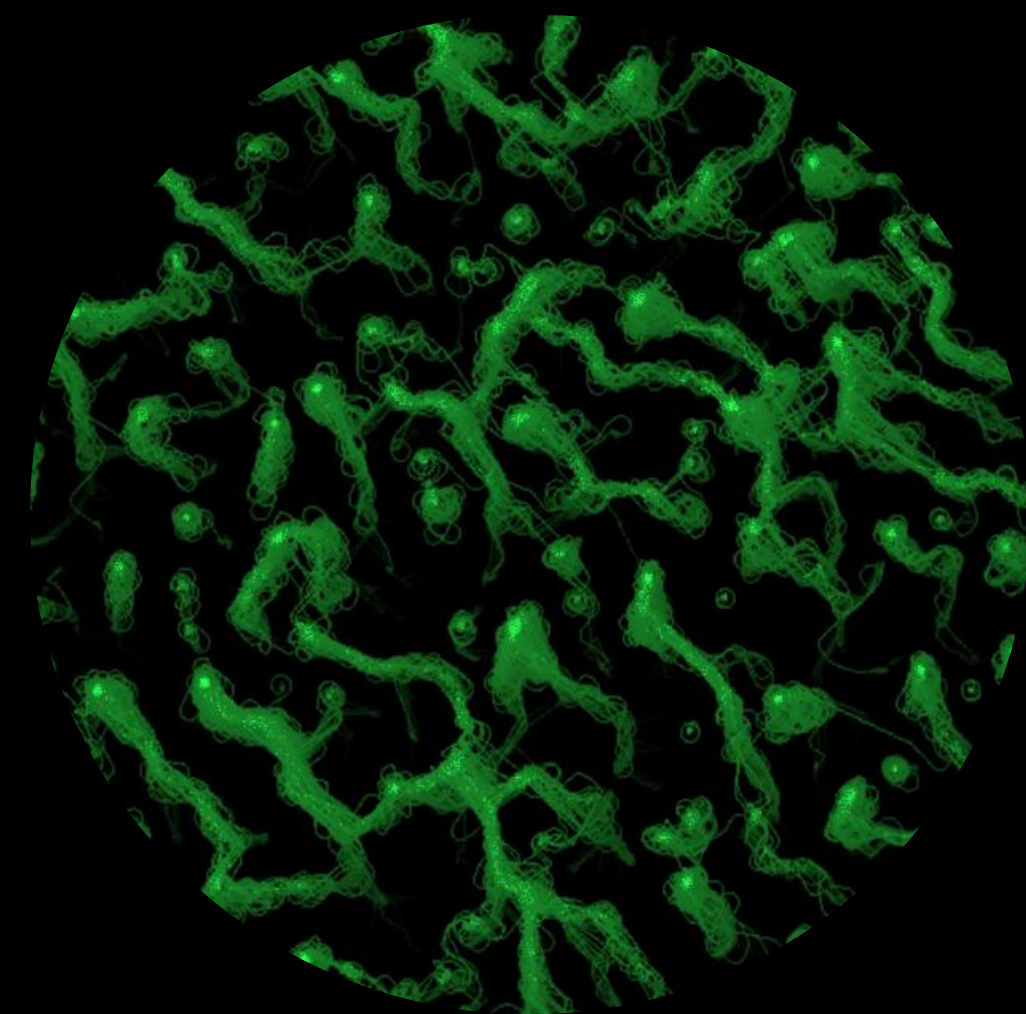
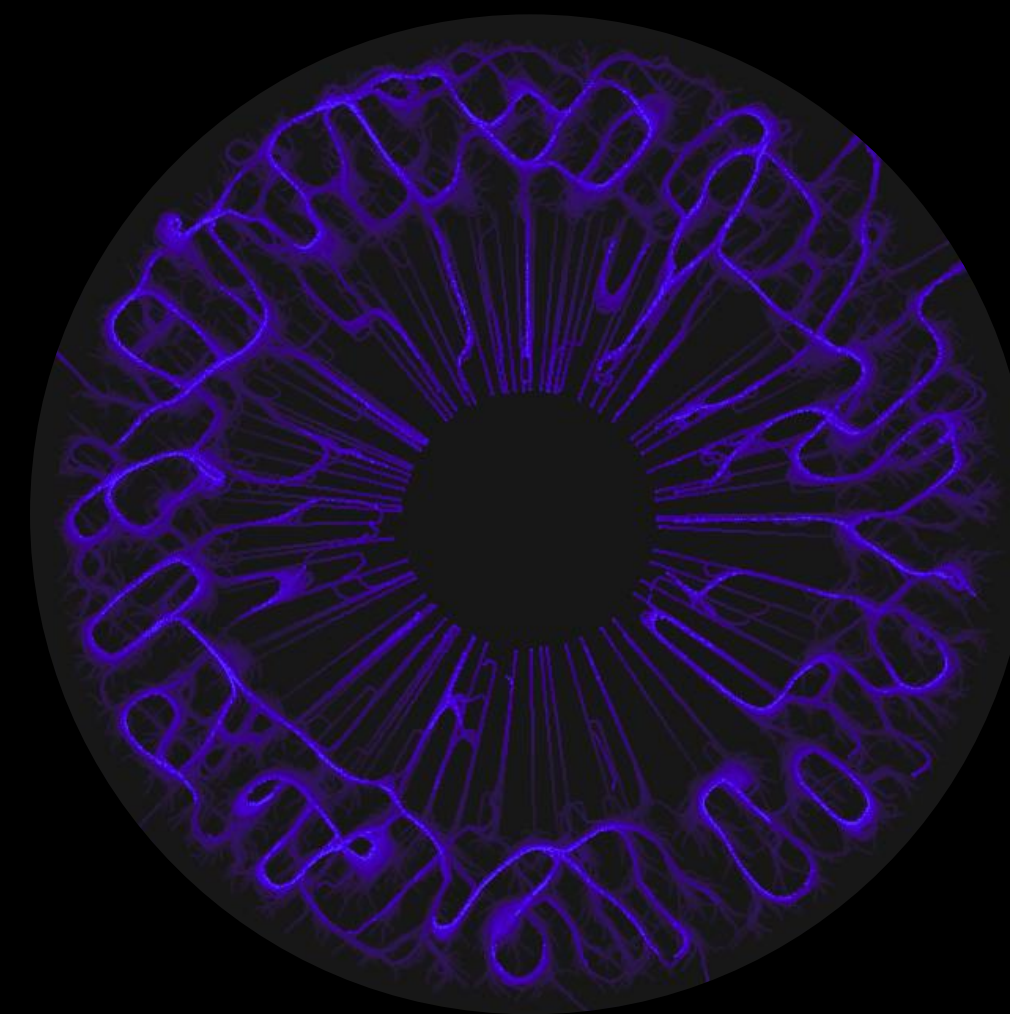
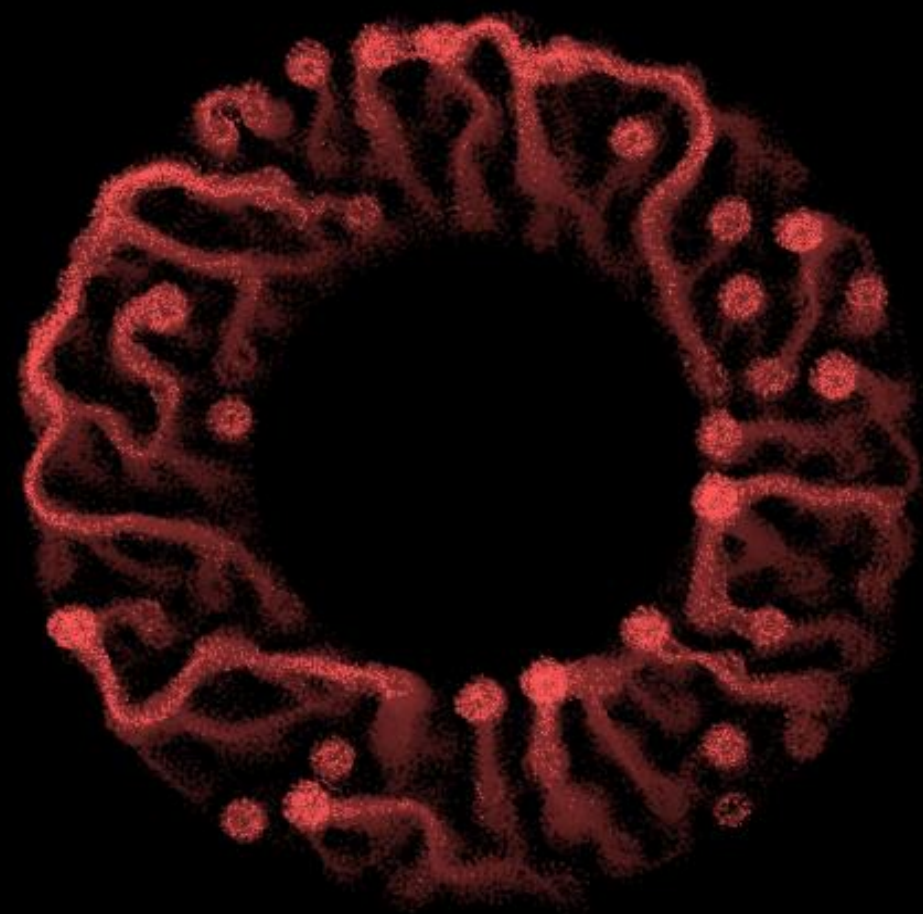
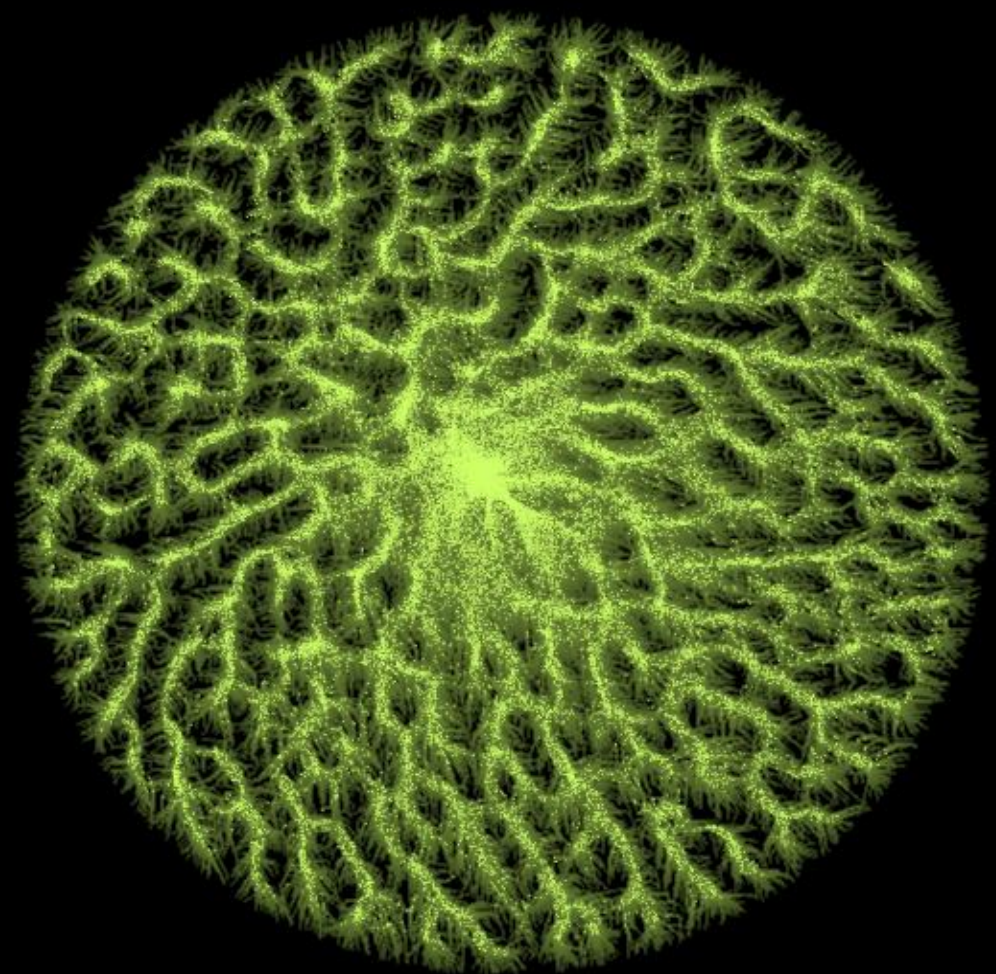
SENSOR REACH
- 13.00

SENSOR LENGTH
- 0.95

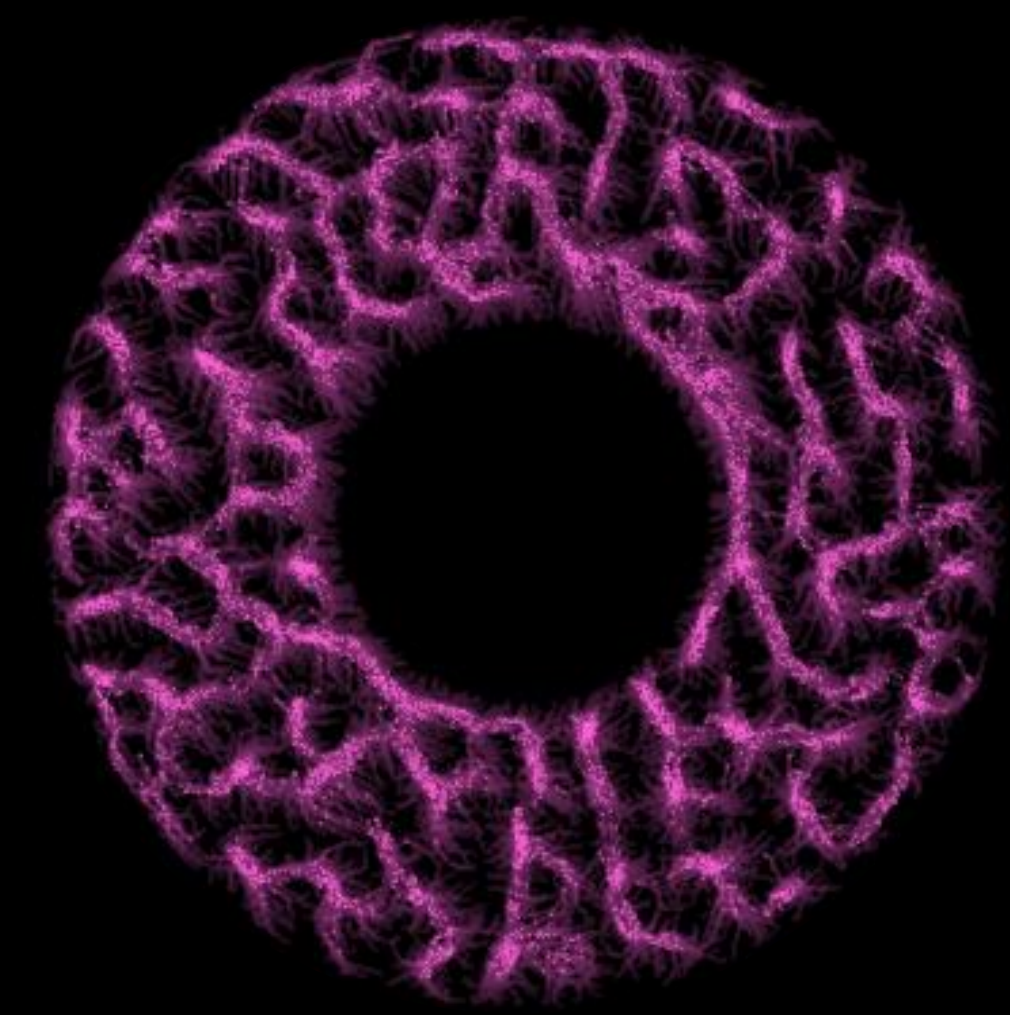
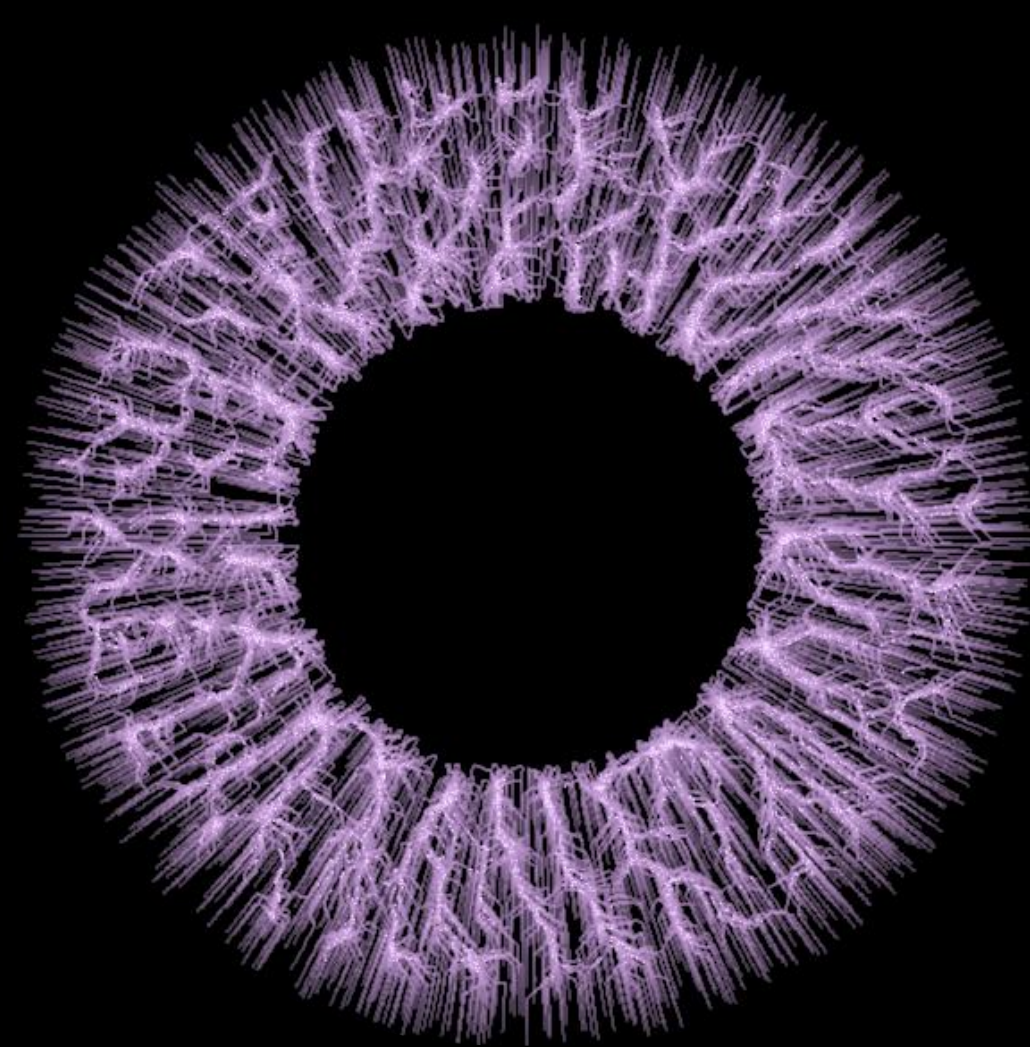
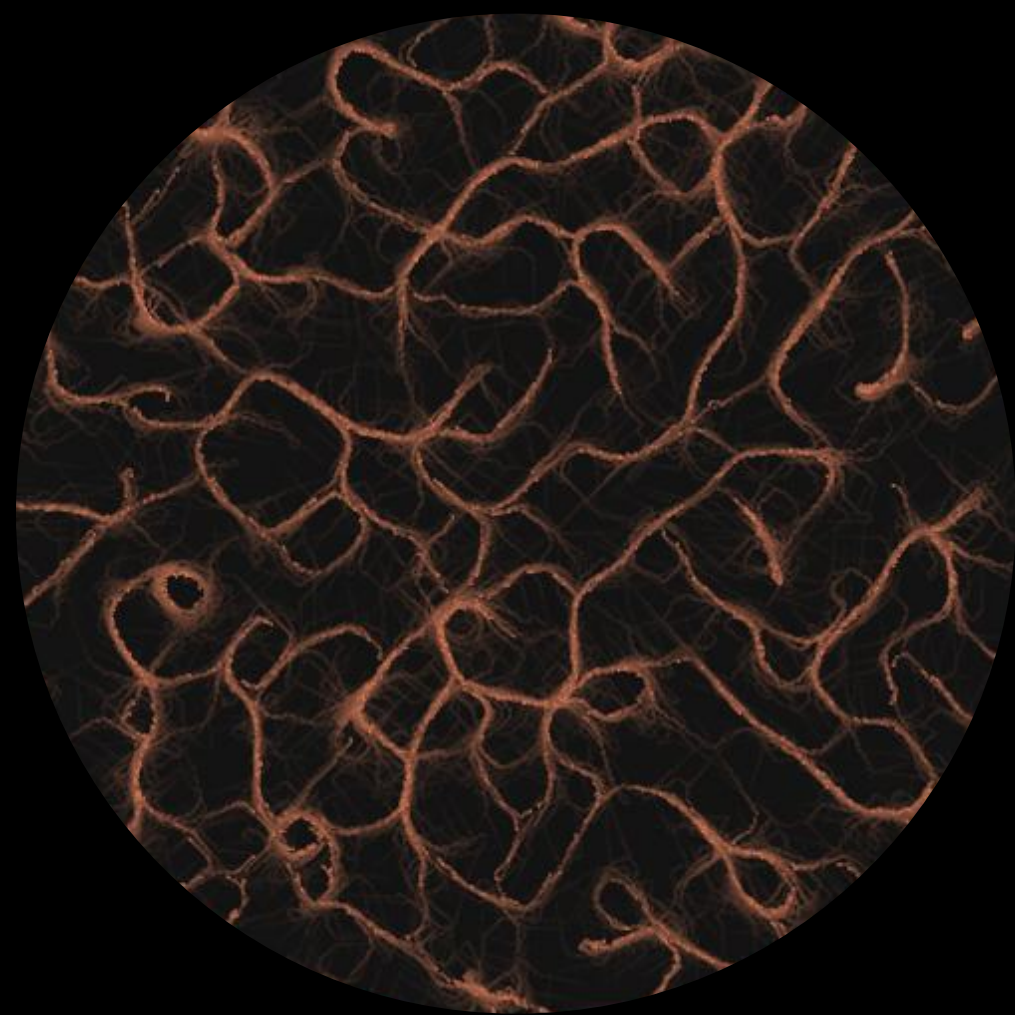
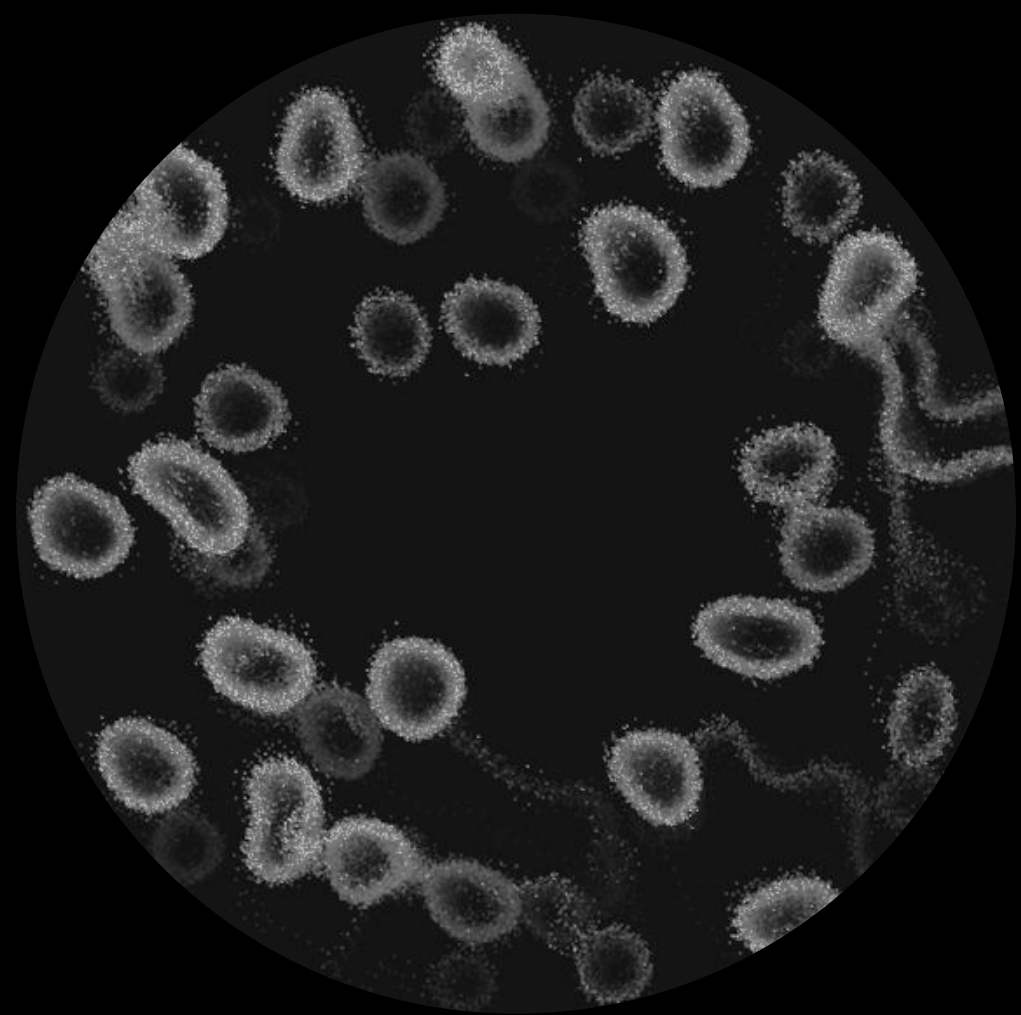
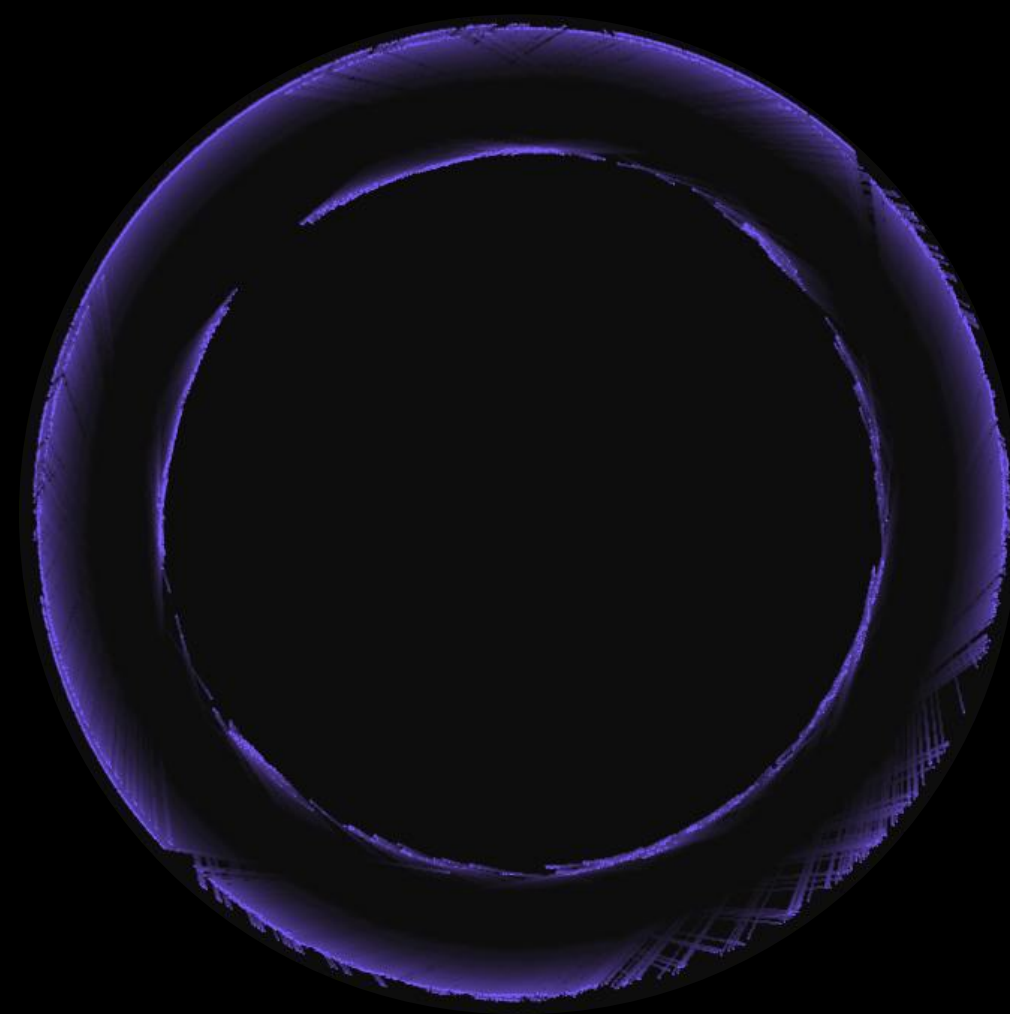
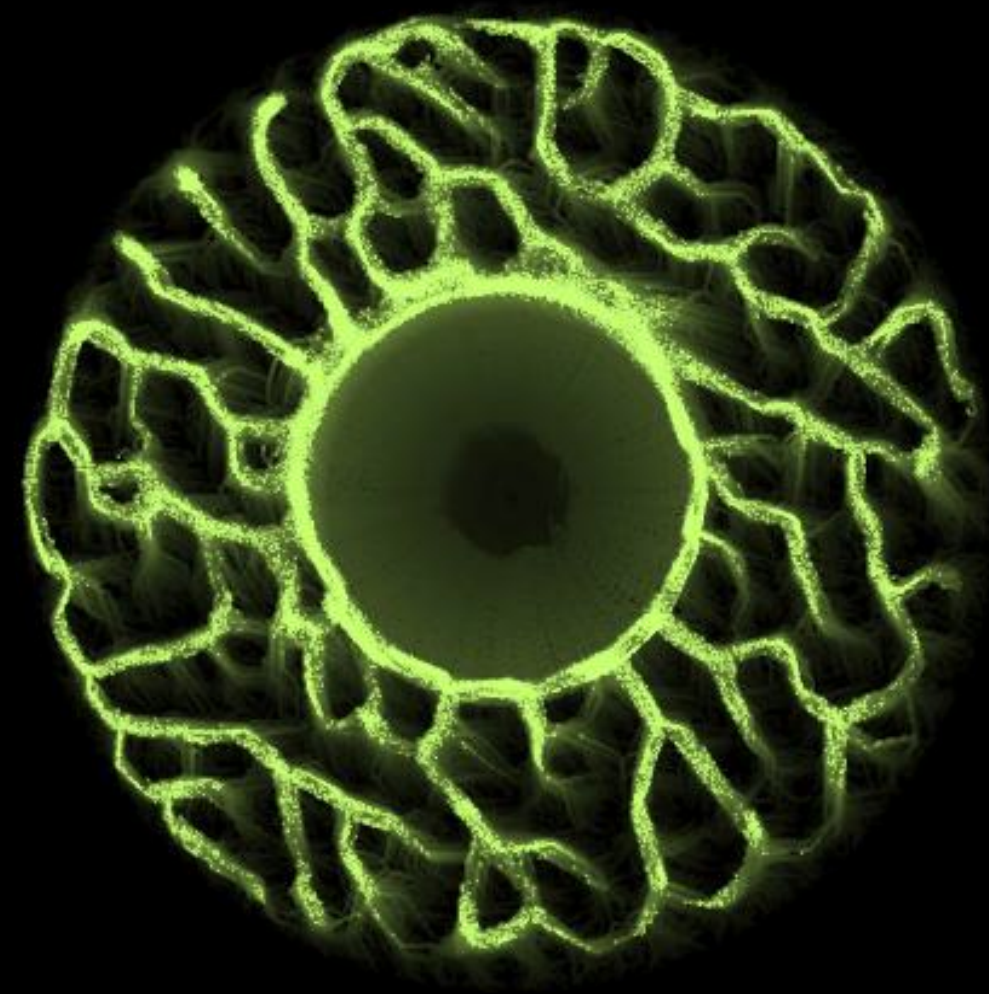
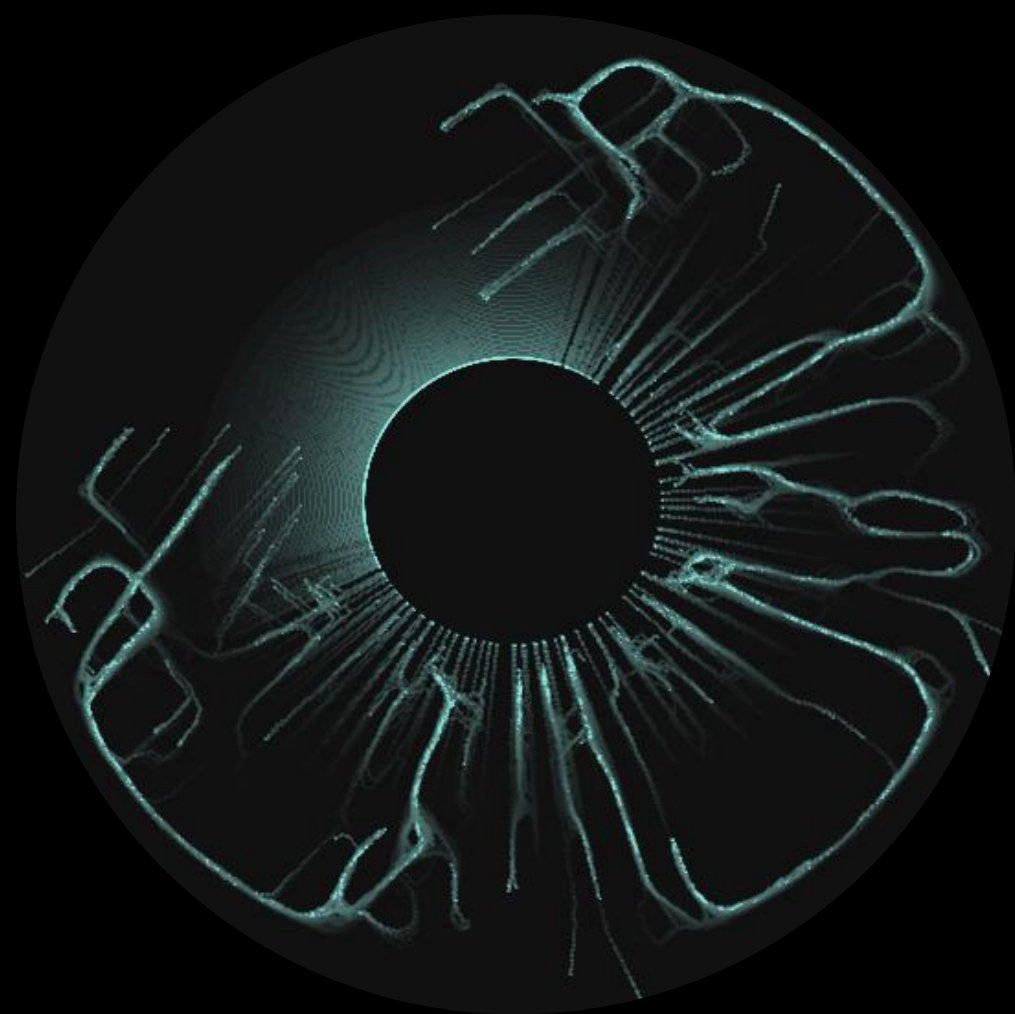
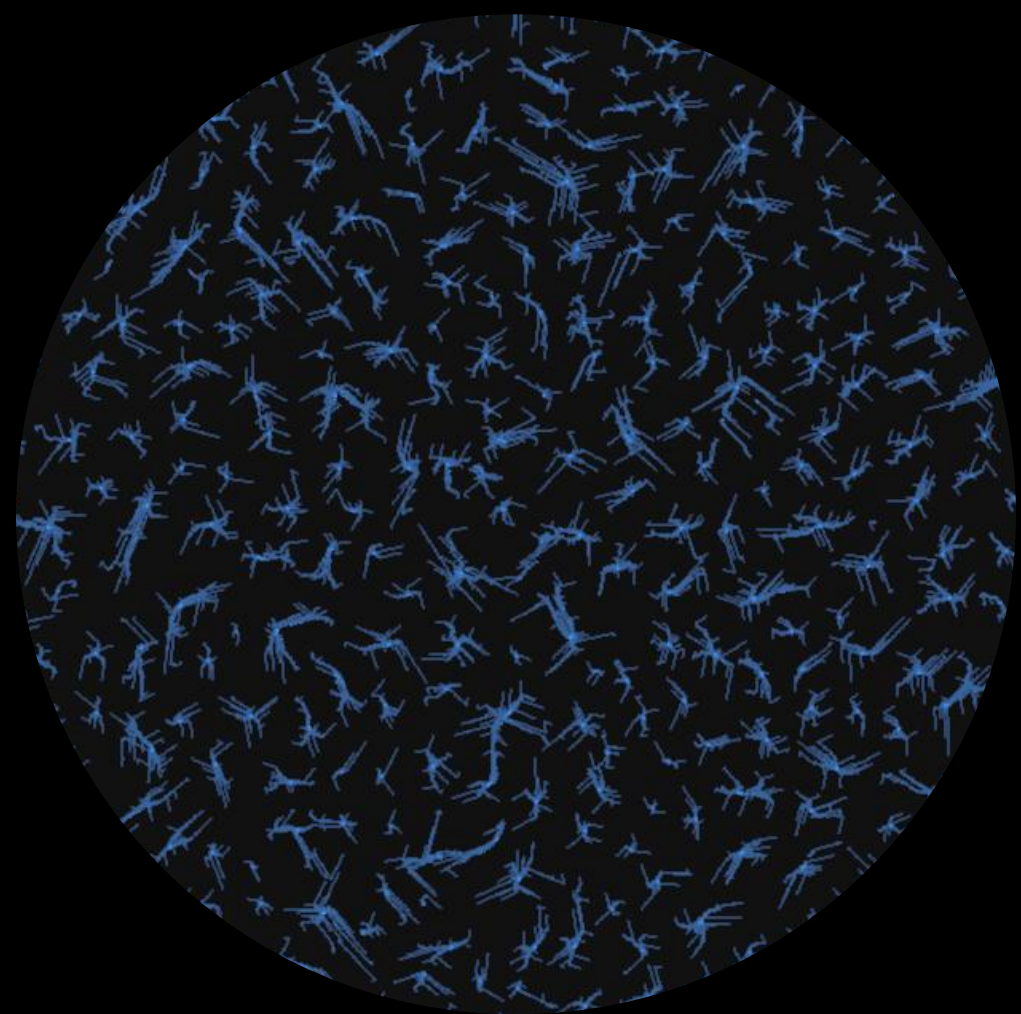
PHEROMONE DECAY















Try it yourself!