

Week 2: July 14 2020



What did you do this past weekend?

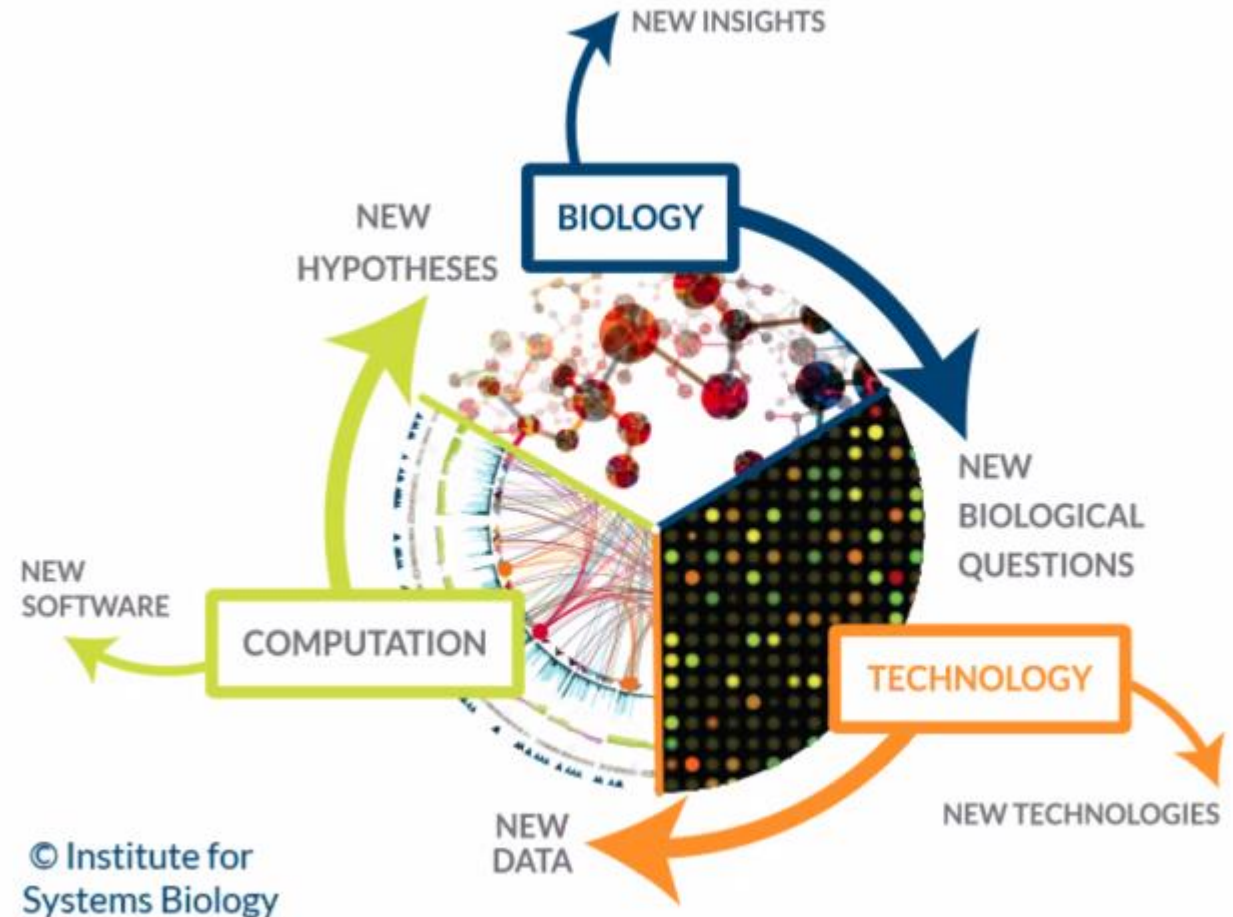
What is systems biology?

Toolbox for models of non-trivial scale

Beyond a few components, we lack the ability to effectively build or interpret models by hand/intuition

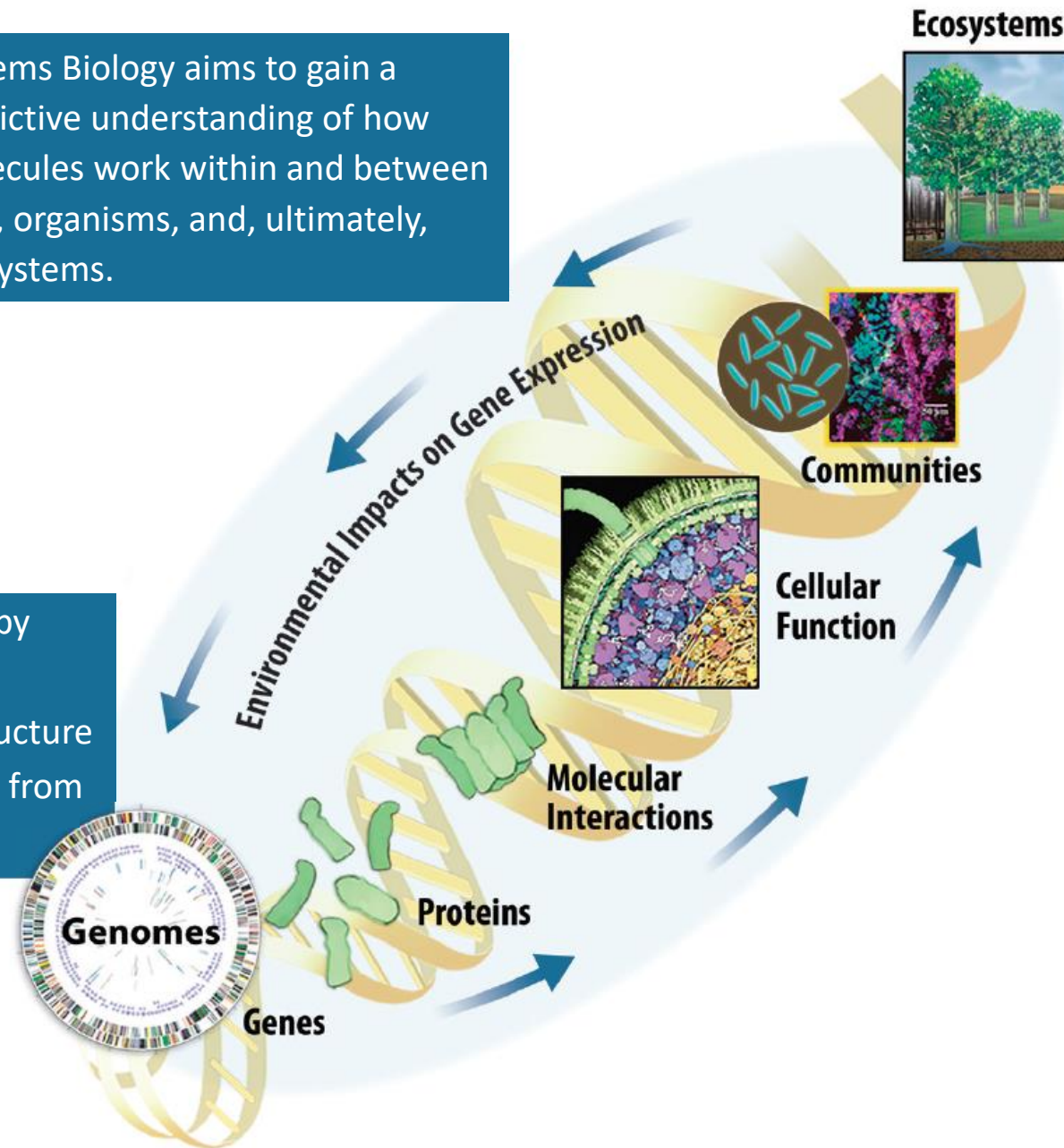
Mathematics and computation required, systems biology embodies this regime (large scales, complex)

Still very much reliant on good experimental data (and can also drive hypothesis generation)

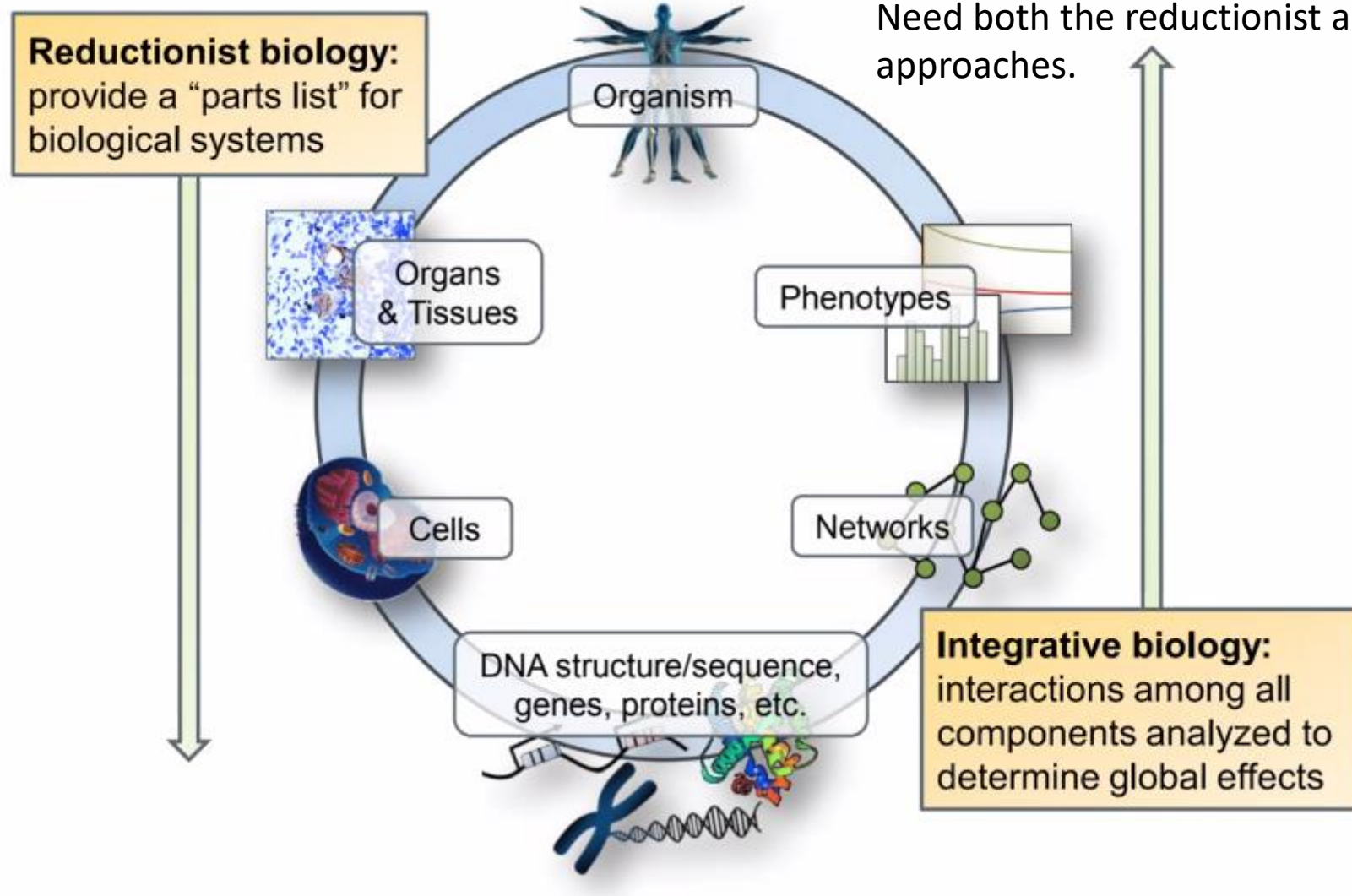


Systems Biology aims to gain a predictive understanding of how molecules work within and between cells, organisms, and, ultimately, ecosystems.

The genome, influenced by environmental factors, determines biological structure and function at all scales, from genes to ecosystems.

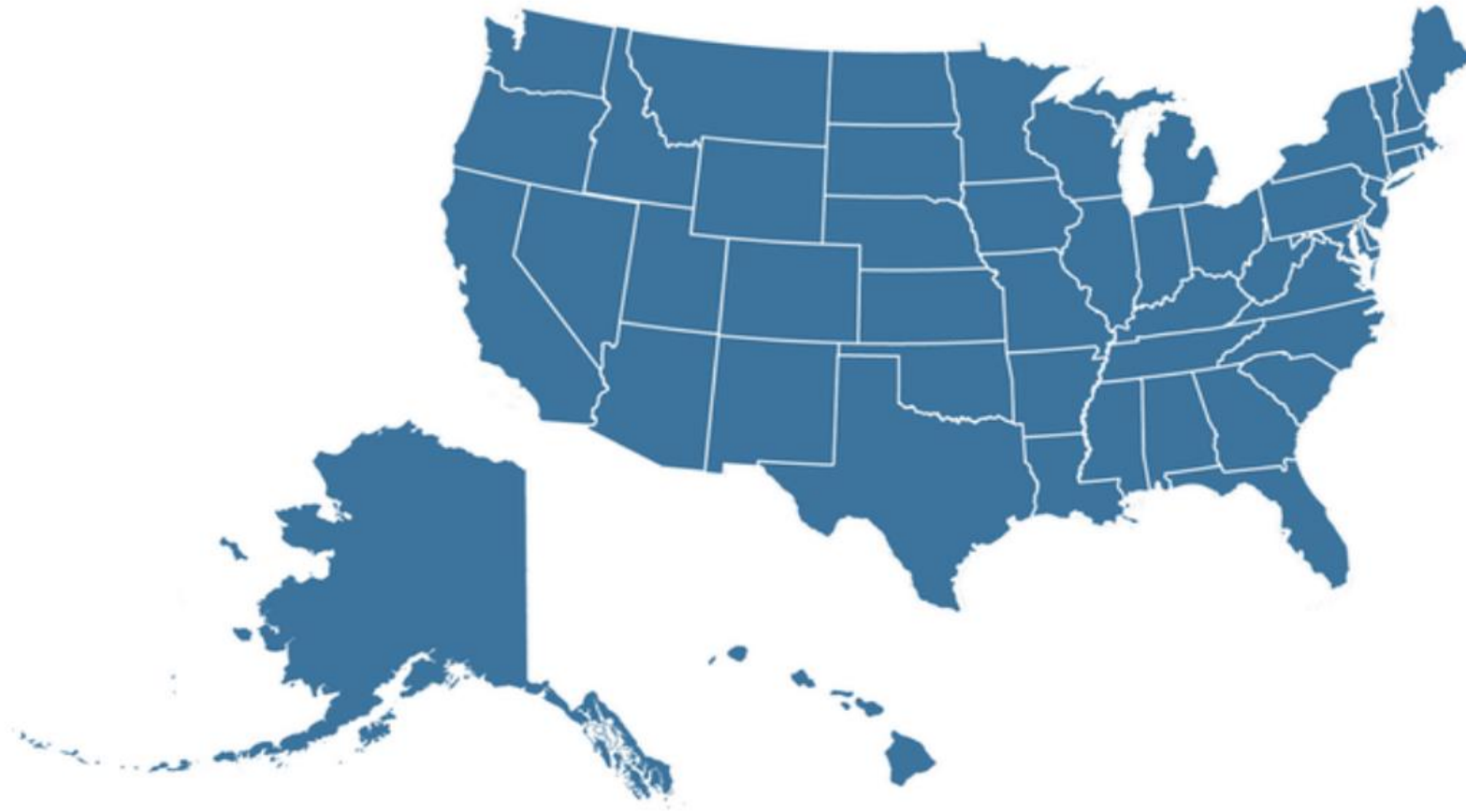


Integrative vs. reductionist biology



	Username	Password			
Clementina Sarpong	clementina	cl3m3nt1n9		KEY	
Daniela Urbano	daniela	d9n13l9		a	9
DorianReece	dorian	d0r19n		e	3
Eli Kutsenok	eli	3l13l1		i	1
Elyza Medina	elyza	3lyz9		o	0
Jocelin Guevara	jocelin	j0c3l1n		u	4
Joey Yu	joey	j03yj03y			
Jose Hernandez	jose	j0s3j0s3			
Joseline Olivares	joseline	j0s3l1n3			
Julie Martinez	julie	j4l13			
LeeannTaitingfong	leeann	l339nn			
MaKayla Medley	makayla	m9k9yl9			
Olvia Freidenreich	olivia	0l1v19			
Raylene Mai	raylene	r9yl3n3			
Sean Ocasio	sean	s39ns39n			
Simran Kaur	simran	s1mr9n			
Tasha Magendran	tasha	t9sh9			
Vasilia Ignatova	vasilisa	v9s1l1s9			

If you have seen the comet Neowise, please click your location when you saw it.



Comet **Neowise** is an exception, however, thanks to its brightness and the time of day at which it is best viewed. Over the next week, **Neowise will** be visible from the **NYC** Metro Area at the following times: 9:30pm to 12:30am in the Northwest sky. 2:30am until sunrise in the Northeast sky. 1 day ago

**JUPITER
& SATURN**

SOUTH/
SOUTHEAST
SKY

RISES

9:10PM & 9:33PM

**COMET
NEOWISE**

LOW
NORTHEAST
SKY

BEST VIEWING

3:30AM - 4:30 AM

(RISES AT 3AM)

VENUS

EAST/SOUTHEAST
SKY

RISES

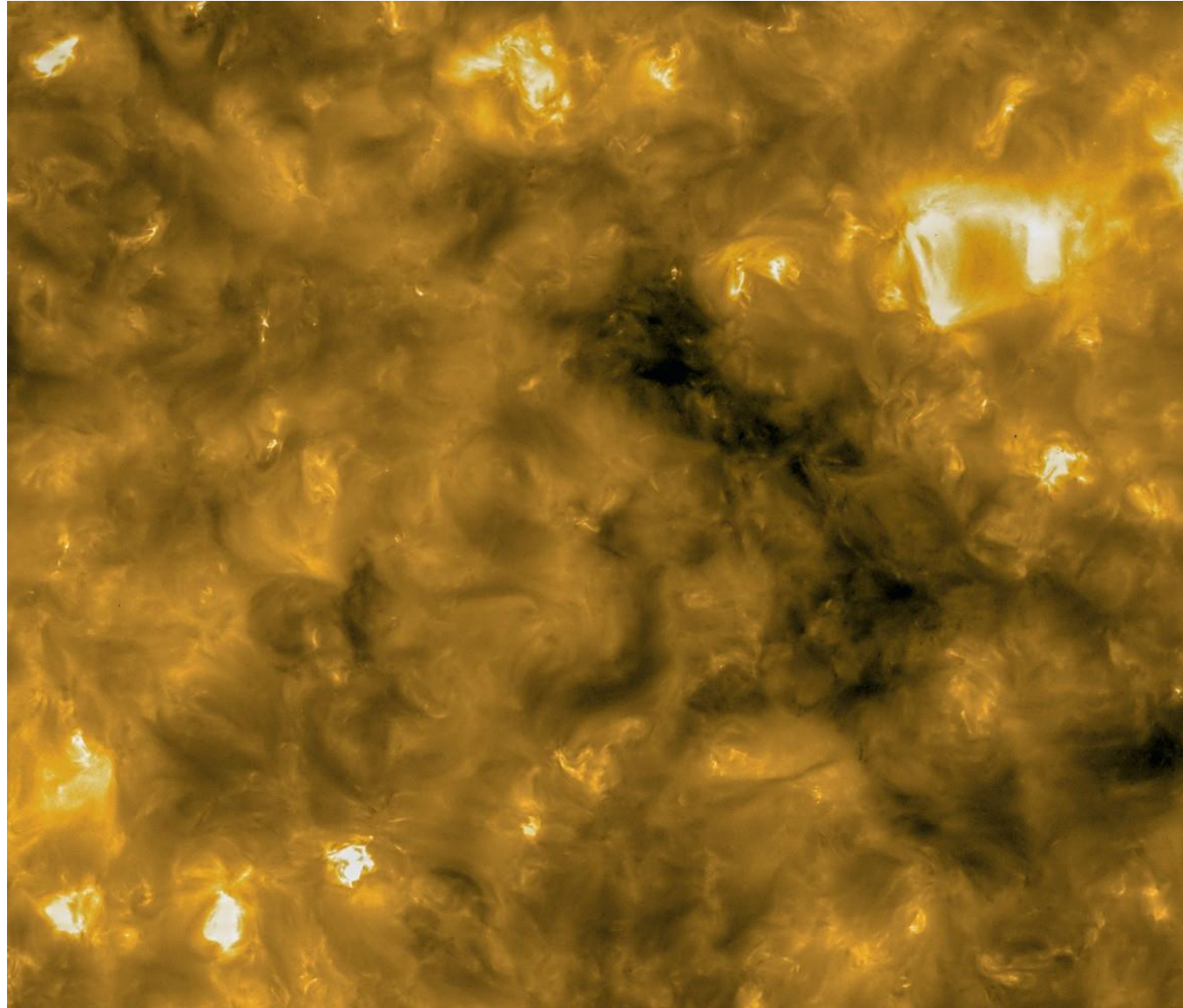
3:37AM

Comet Neowise over NYC this week before sunrise



<https://twitter.com/NycStormChaser/status/1281180086369234947>

<https://www.nature.com/articles/d41586-020-02136-4>

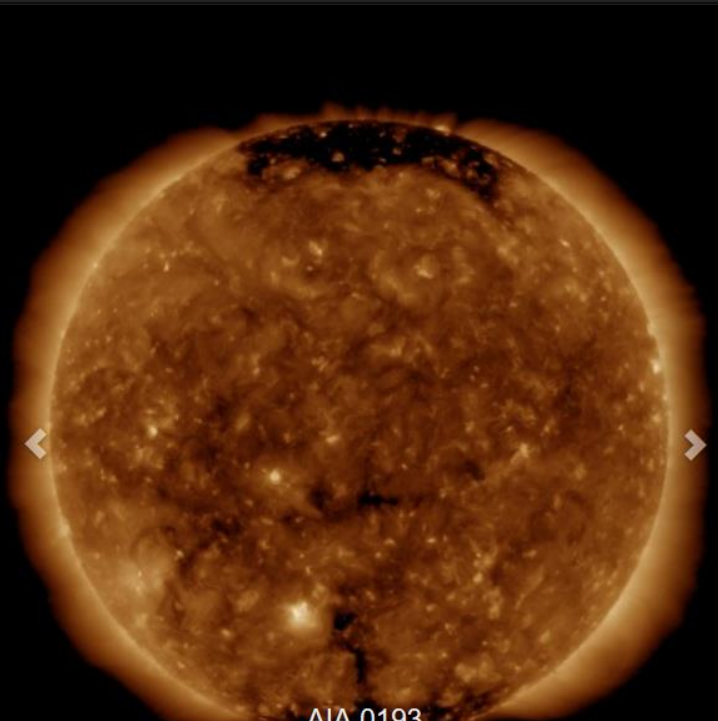


<https://sdo.gsfc.nasa.gov/>

https://sdo.gsfc.nasa.gov/assets/img/dailymov/2020/05/29/20200529_1024_0304.mp4

SDO | Solar Dynamics Observatory


The Sun Now



AIA 0193

Where is SDO?

BodyX Velocity Angle (deg): 70.990
ACS Propagation Error (m): 77.222
Altitude (ReJ): 5.610

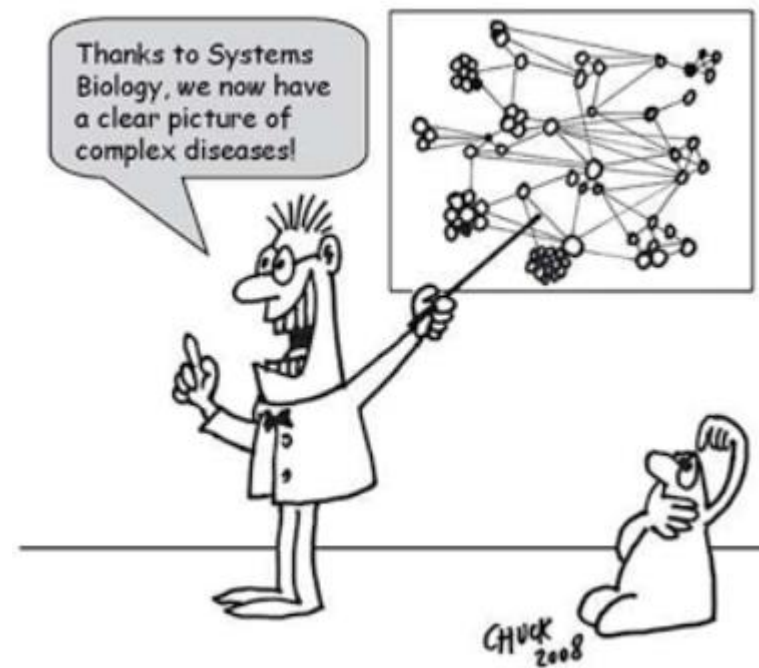
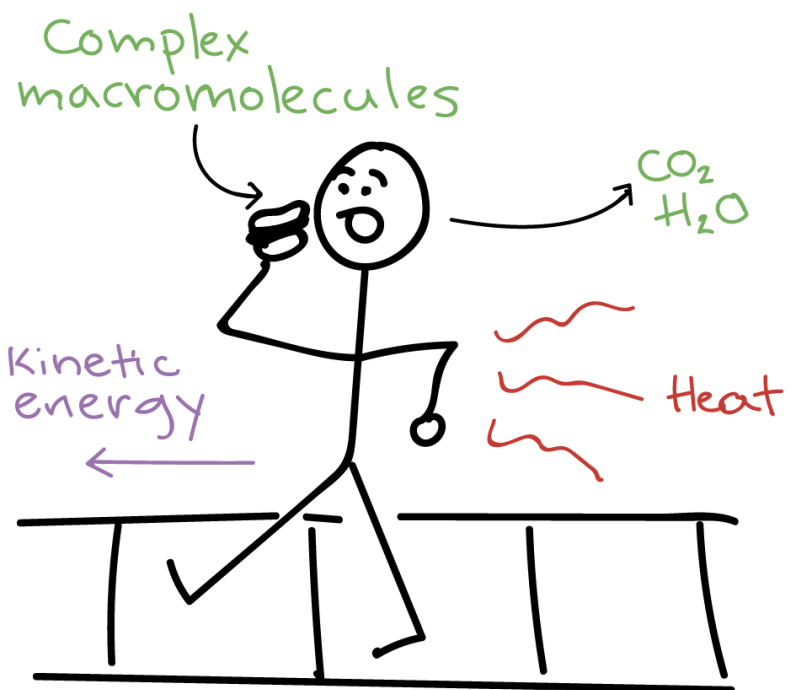


Momentum
Moon
Body Z
Body Y
Body X
Velocity
Earth Inertial Axes
2020198.181941 Real Time Offset: 0.00 sec

Where is SDO? »

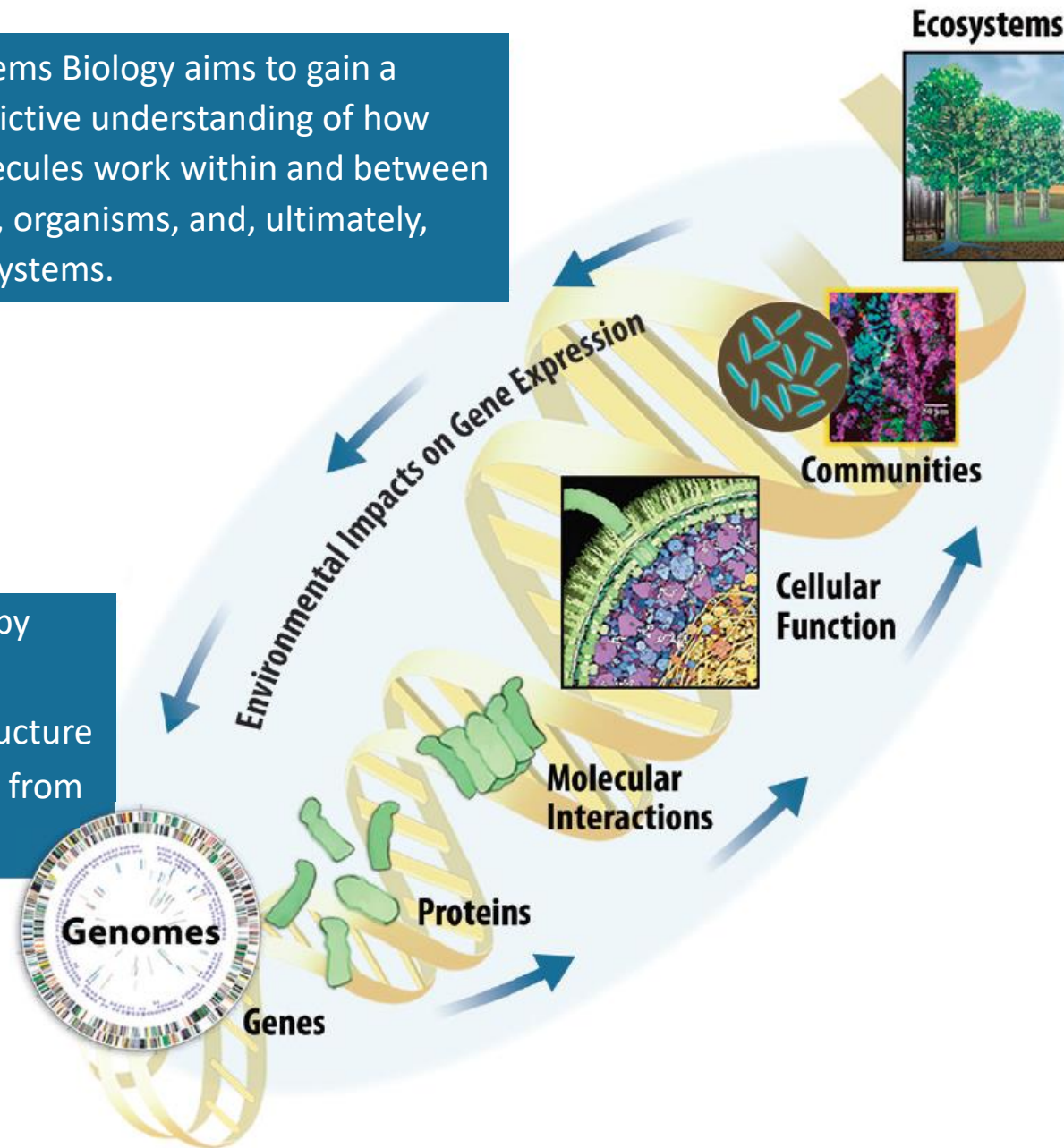
SDO Mission Blog

Momentum Management Maneuver #38 Today - Wed, 15 Jul

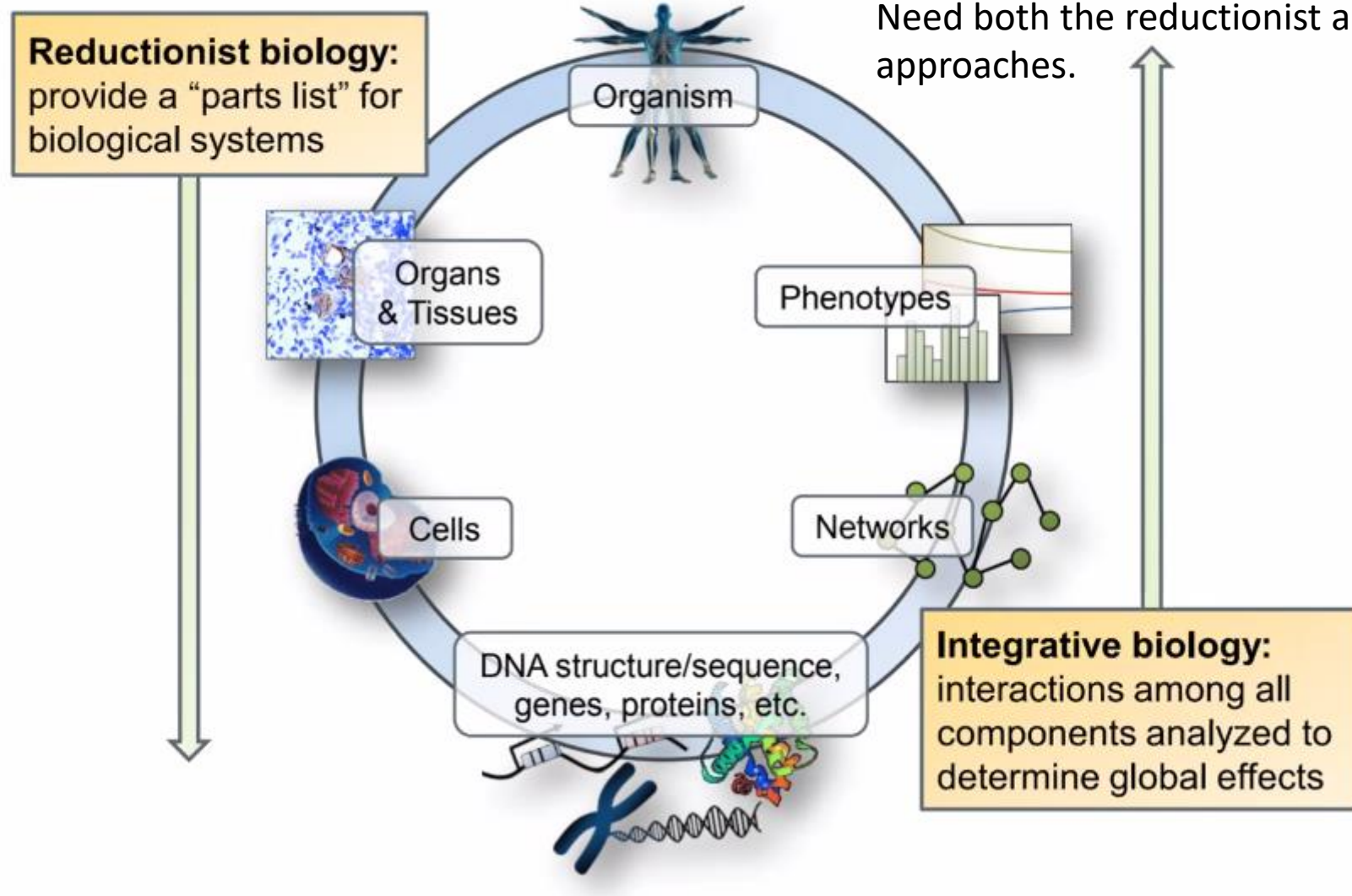


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Integrative vs. reductionist biology



Coercion



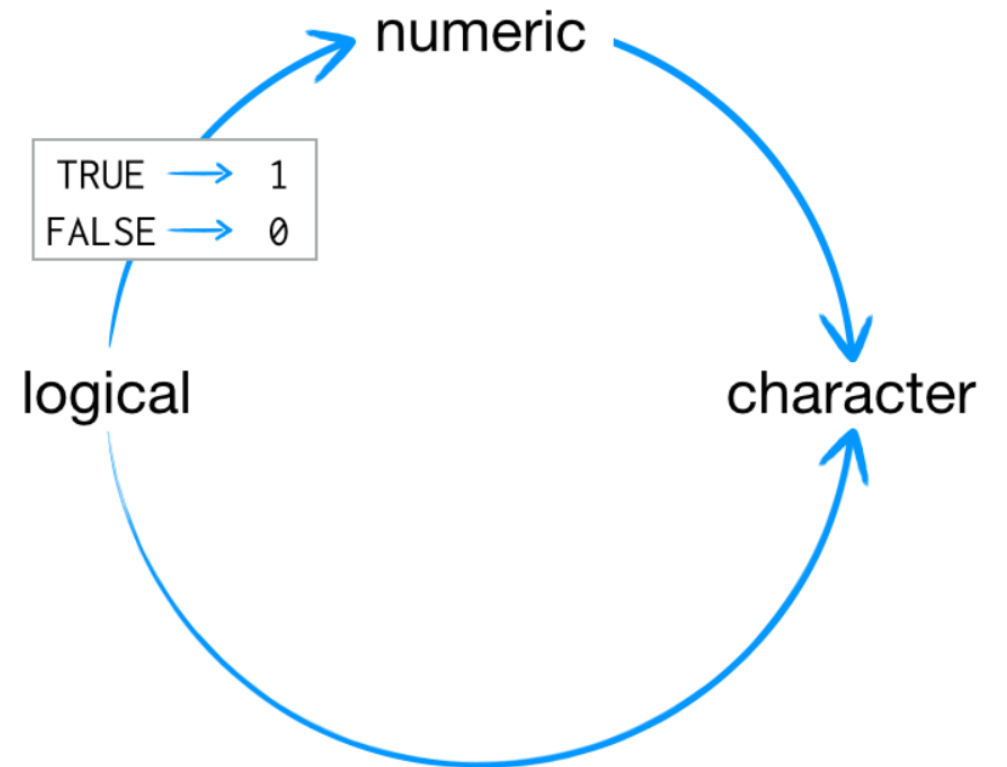
Go on, I'm sure Master won't mind
if you eat the Baby's birthday cake...

Coercion



Go on, I'm sure Master won't mind
if you eat the Baby's birthday cake...

Coercion in R





co·erce

/kō'ers/

verb

verb: **coerce**; 3rd person present: **coerces**; past tense: **coerced**; past participle: **coerced**; gerund or present participle: **coercing**

persuade (an unwilling person) to do something by using force or threats.
"they were coerced into silence"

Similar:

pressure

pressurize

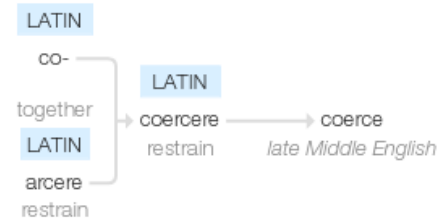
bring pressure to bear on

use pressure on



- obtain (something) by using force or threats.
"their confessions were allegedly coerced by torture"

Origin



late Middle English: from Latin *coercere* 'restrain', from *co-* 'together' + *arcere* 'restrain'.