



LECTURE 9

SCIENCE ETHICS, ADVOCACY & ACTIVISM

A sunset over the ocean with a white dashed border around the text.

NOTE TO PRIYA:

RECORD LECTURE &
TURN ON CLOSED
CAPTIONING

RULES OF ENGAGEMENT

Be Open & Encouraging

Communicate Effectively & Respectfully

Contribute / Participate In Group Conversations

Step Up / Step Back: Give people
time/space to answer

#BlackInMarineScience



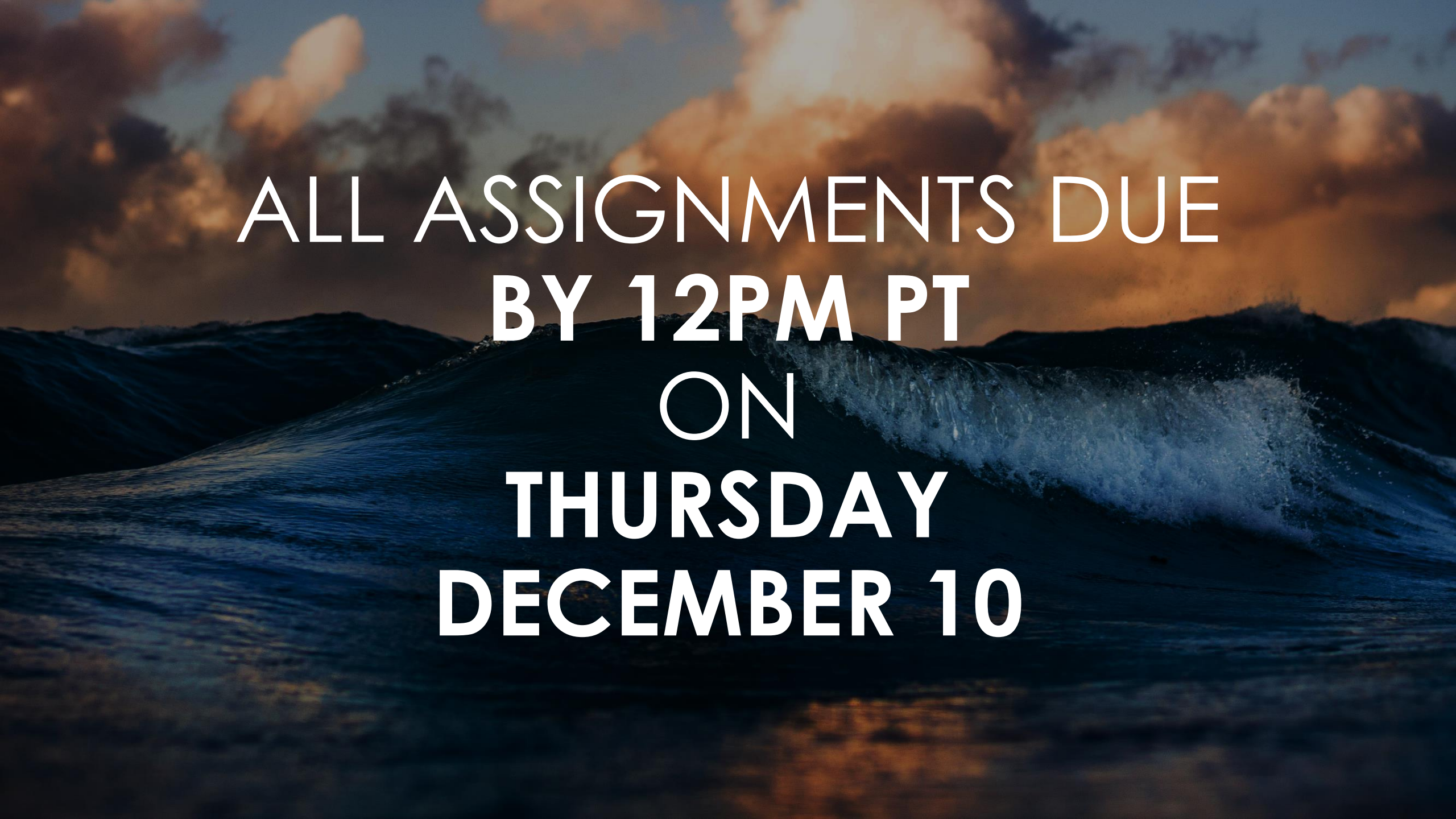
**BLACK IN MARINE
SCIENCE WEEK**

NOV 29 - DEC 5, 2020

@BlackinMarSci

blackinmarsci.github.io

#BlackInMarineScience



ALL ASSIGNMENTS DUE
BY 12PM PT
ON
THURSDAY
DECEMBER 10

WILD CARD CLASS

*SCUBA Diving +
Underwater Photography*



Anesti Vega

*Jobs in Marine Science
OUTSIDE of research*



Emily Knight

Lectures & Assignments

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
Week 10						

SCUBA Diving / Underwater Photography + Jobs Outside of Research

- SCUBA Diving & Underwater Photography
 - [Anesti Vega](#), Shark scientist, SCUBA Diver & Photo/Videographer
 - [Instagram](#)
 - [Maluco Studios](#)
 - [IMDB Page](#)
- Jobs Outside of Research
 - [Emily Knight](#), Manager of the Lenfest Ocean Program
 - [LinkedIn Profile](#)
 - [Twitter](#)
 - [Medium Page](#)

WILD CARD CLASS

Assignment 8

Questions About ...

*SCUBA Diving +
Underwater Photography*

*Jobs in Marine Science
OUTSIDE of research*

Assignment 9

Questions For ...

Anesti Vega

Emily Knight

SCIENCE ETHICS, ADVOCACY, ACTIVISM



LEARNING GOALS

How scientists navigate their relationship with **each other** and with **society**.

LEARNING GOALS

“It doesn’t take a lot to lose your integrity, but it takes a lot to get it back.”
- Anne Todgham

WHAT ARE SCIENTIFIC ETHICS?

“Scientific ethics calls for honesty and integrity in all stages of scientific practice ... [which ultimately] relate[s] to the production of unbiased scientific knowledge.”

[visionlearning.com/en/library/Process-of-Science/49/Scientific-Ethics](https://www.visionlearning.com/en/library/Process-of-Science/49/Scientific-Ethics)

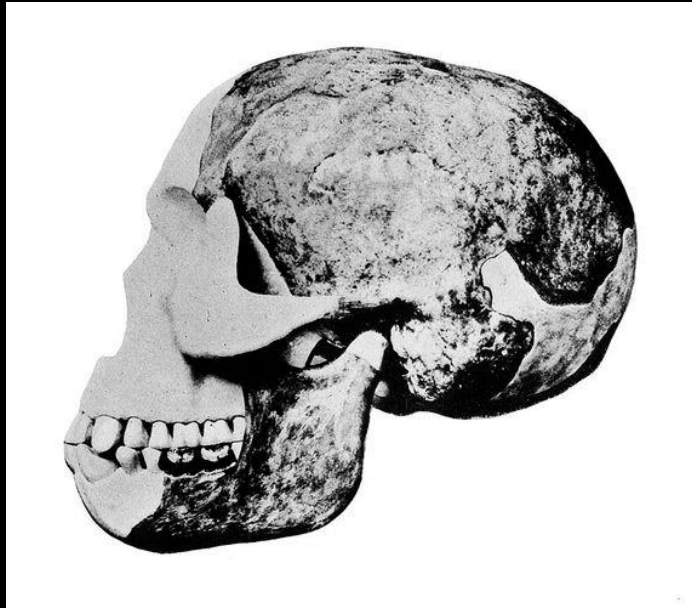
ETHICS ~ INTEGRITY

Don't do anything that would call into question the integrity of your science.

“Integrity beyond reproach.”
- The Nature Conservancy

PILTDOWN MAN HOAX

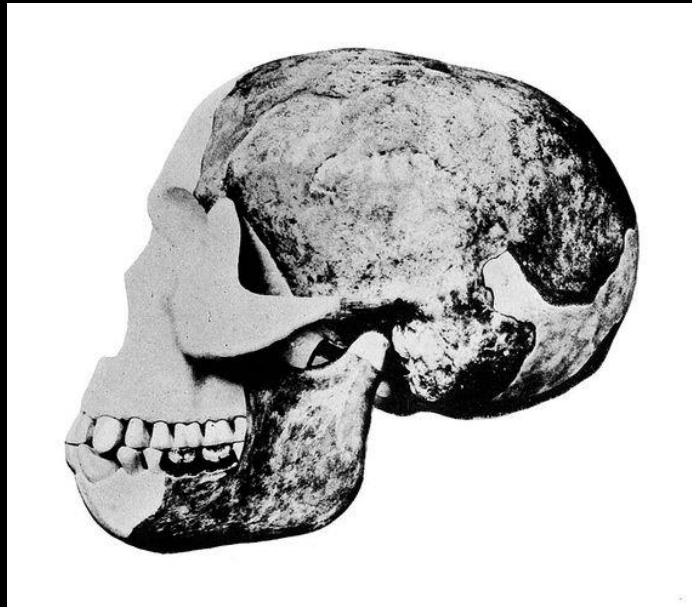
“link between man and apes”



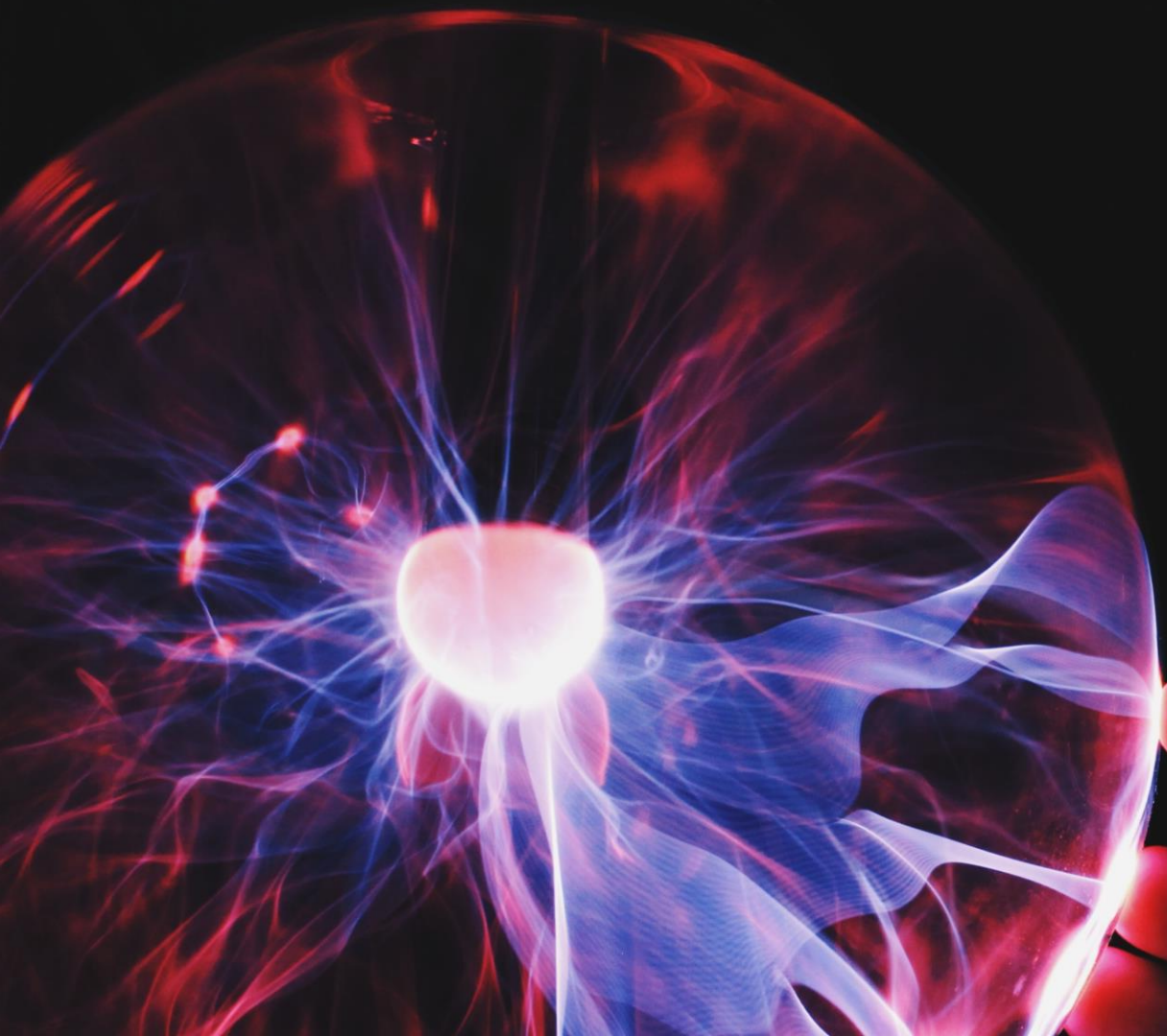
nhm.ac.uk/our-science/departments-and-staff/library-and-archives/collections/piltdown-man.html

PILTDOWN MAN HOAX

WHAT WENT WRONG?



INTELLECTUAL PROPERTY



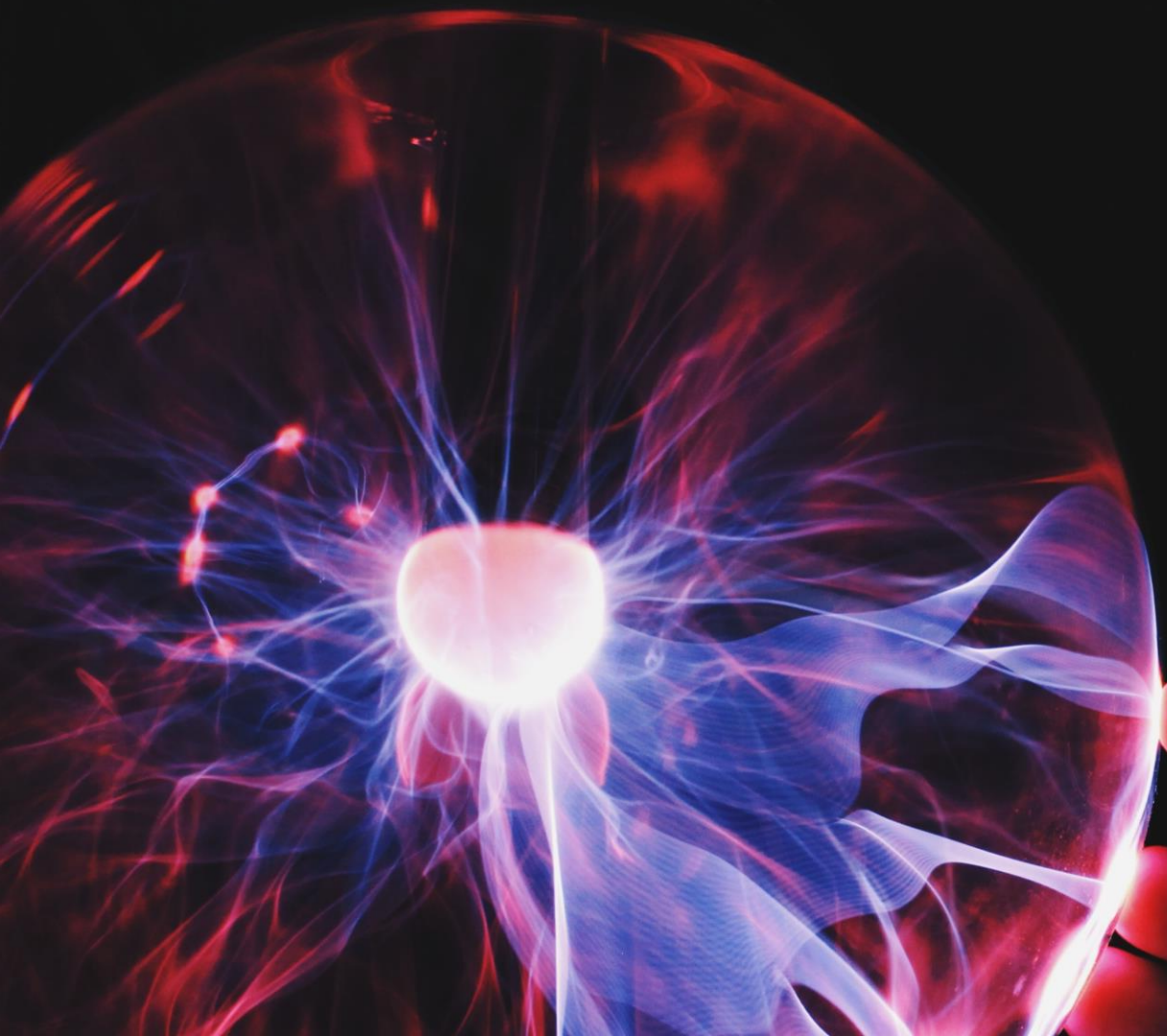
INTELLECTUAL PROPERTY

Not just patents – ideas are the currency of science!

DON'T scoop/plagiarize others' work

Give credit where credit's due:

- Plagiarism
- Authorship



CONFLICT OF INTEREST



CONFLICT OF INTEREST



Conflict of interest: when an individual's vested interest (money / status / relationships) may cause them to make *biased* decisions

* Journals often require you to declare any COIs upon publication

MANAGING FINANCES



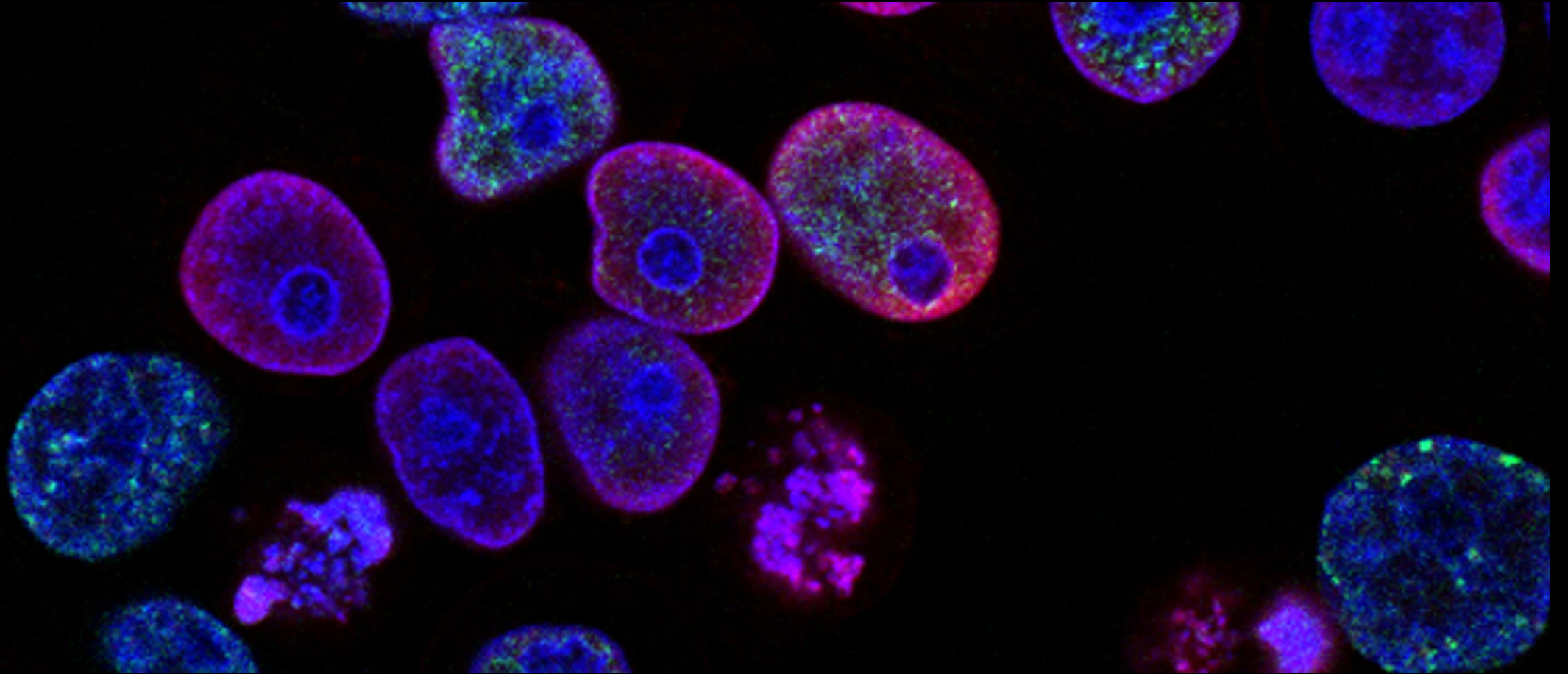
MANAGING FINANCES

Be wary of how you
spend your funds:
public trust

Taxpayer dollars +
mission-drive
organizations often fund
science!



RESEARCH MISCONDUCT



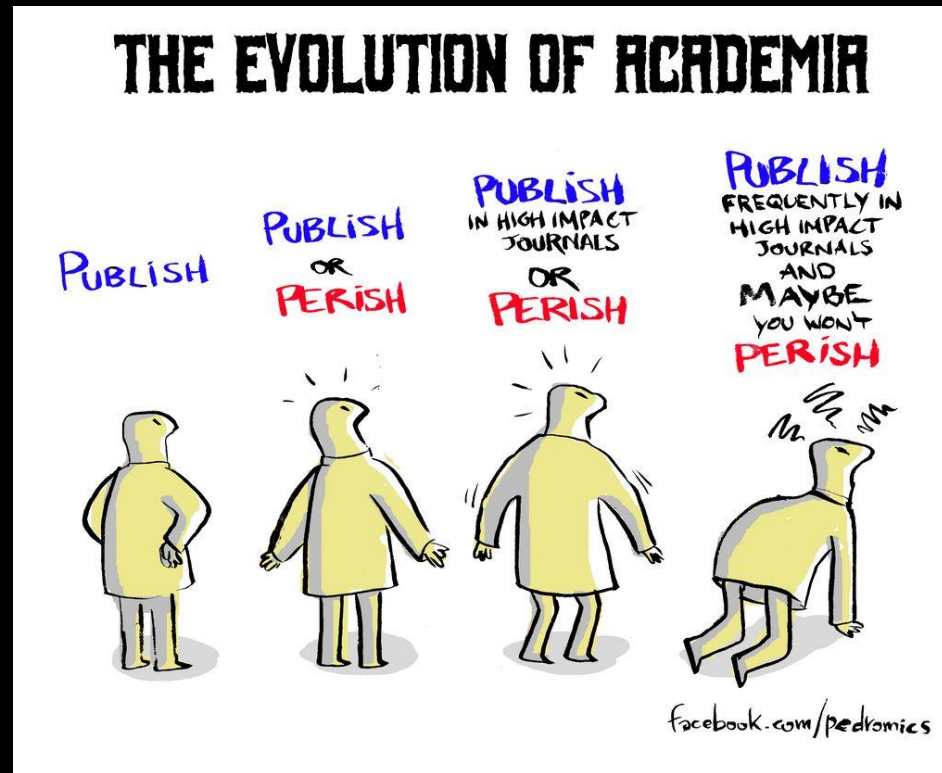
RESEARCH MISCONDUCT

Science doesn't always produce the desired outcome – and that's okay!

Mistakes are not the same as **misconduct**

RESEARCH MISCONDUCT

“Publish or Perish”



RESEARCH MISCONDUCT

#PruittGate

Weeks	Treatment	Individual	pre-treatment					Post treatment				
			Bold1	Bold2	Bold3	Bold4	Bold5	Bold6	Bold7	Bold8	Bold9	Bold10
4	Mixed	M_4_10	297.91	356.56	600	160.66	600	160.66	600	119.83	153.53	241.34
4	Mixed	M_4_11	600	600	600	77.56	313.32	477.56	313.32	384.26	339.12	357.55
4	Mixed	M_4_12	600	600	600	335.09	212.22	335.09	412.22	414.03	415.46	399.41
4	Mixed	M_4_13	103.5	442.25	241.34	339.63	119.72	139.63	119.72	210.73	113.47	111.31
4	Mixed	M_4_14	600	600	600	178.41	68.57	463.77	441.23	420.89	369.81	402.63
4	Mixed	M_4_15	561.71	600	600	257.62	124.72	257.62	124.72	600	600	600
4	Mixed	M_4_16	600	281.46	600	562.01	183.25	562.01	183.25	600	84.53	600
4	Mixed	M_4_17	600	600	259.94	600	452.7	492.23	452.7	499.45	594.72	458.71
4	Mixed	M_4_18	600	170.13	58.75	435.60	28.22	35.21	28.22	83.75	600	12.21
4	Mixed	M_4_19	600	90.56	43.48	600	276.63	58.75	233.51	358.66	502.37	63.77
4	Mixed	M_4_20	600	277.53	63.77	600	165.38	600	165.38	46.35	334.00	600
4	Mixed	M_4_21	600	600	107.37	349.00	327.22	349.00	327.22	600	408.28	288.32
4	Mixed	M_4_22	264.59	600	583.78	600	209.16	482.35	409.16	484.53	495.62	317.35
4	Mixed	M_4_23	600	600	475.82	600	419.38	600	600	600	600	600
4	Mixed	M_4_24	35.72	137.59	100.26	113.47	312.17	13.54	19.5	53.97	66.21	58.75
4	Mixed	M_4_25	403.03	234.66	554.88	31.72	76.66	31.72	76.66	42.13	39.53	54.23
4	Mixed	M_4_26	83.00	170.56	600	518.31	600	518.31	600	305.85	498.31	554.88
4	Mixed	M_4_27	600	600	305.85	153.53	358.66	453.53	358.66	452.65	358.94	359.94
4	Mixed	M_4_28	600	600	600	91.91	590.41	591.91	590.41	500.21	454.23	443.37
4	Mixed	M_4_29	35.06	114.27	404.35	600	600	600	155.42	119.25	600	598.62
4	Mixed	M_4_30	252.47	600	600	262.83	194.62	262.83	194.62	24.56	530.35	171.75
4	Mixed	M_4_31	600	600	143.37	404.35	233.00	404.35	233.00	61.2	252.72	114.28
4	Mixed	M_4_32	110.53	600	600	600	600	495.56	577.45	585.56	497.56	583.78
4	Mixed	M_4_33	581.03	600	600	600	600	600	600	600	600	600
4	Mixed	M_4_34	23.06	600	183.28	552.25	181.06	552.25	181.06	114.04	188.09	214.94
4	Mixed	M_4_35	600	337.74	171.75	184.65	452.09	184.65	452.09	107.28	518.31	600
4	Mixed	M_4_36	600	600	598.62	237.40	91.79	237.40	91.79	600	383.22	199.38
4	Mixed	M_4_37	600	449.44	600	285.47	262.85	285.47	262.85	600	600	143.37
4	Mixed	M_4_38	251.06	600	600	600	198.57	512.23	398.57	477.00	482.09	482.34
4	Mixed	M_4_39	42.21	600	96.00	600	191.54	600	232.1	600	600	600
4	Mixed	M_4_40	471.34	600	146.53	201.83	260.09	201.83	260.09	471.75	72.19	100.26
4	Mixed	M_4_41	600	403.25	317.35	298.59	191.54	298.59	191.54	600	344.09	600
4	Mixed	M_4_42	600	84.53	600	600	348.88	600	348.88	600	441.94	182.09
4	Mixed	M_4_43	600	600	600	94.72	570.93	594.72	570.93	499.87	525.48	541.02

ecologyforthemasses.com/2020/02/04/pruittdata-and-the-ethics-of-data-in-science/

RESEARCH MISCONDUCT

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WHAT WENT WRONG?

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PUBLISHING

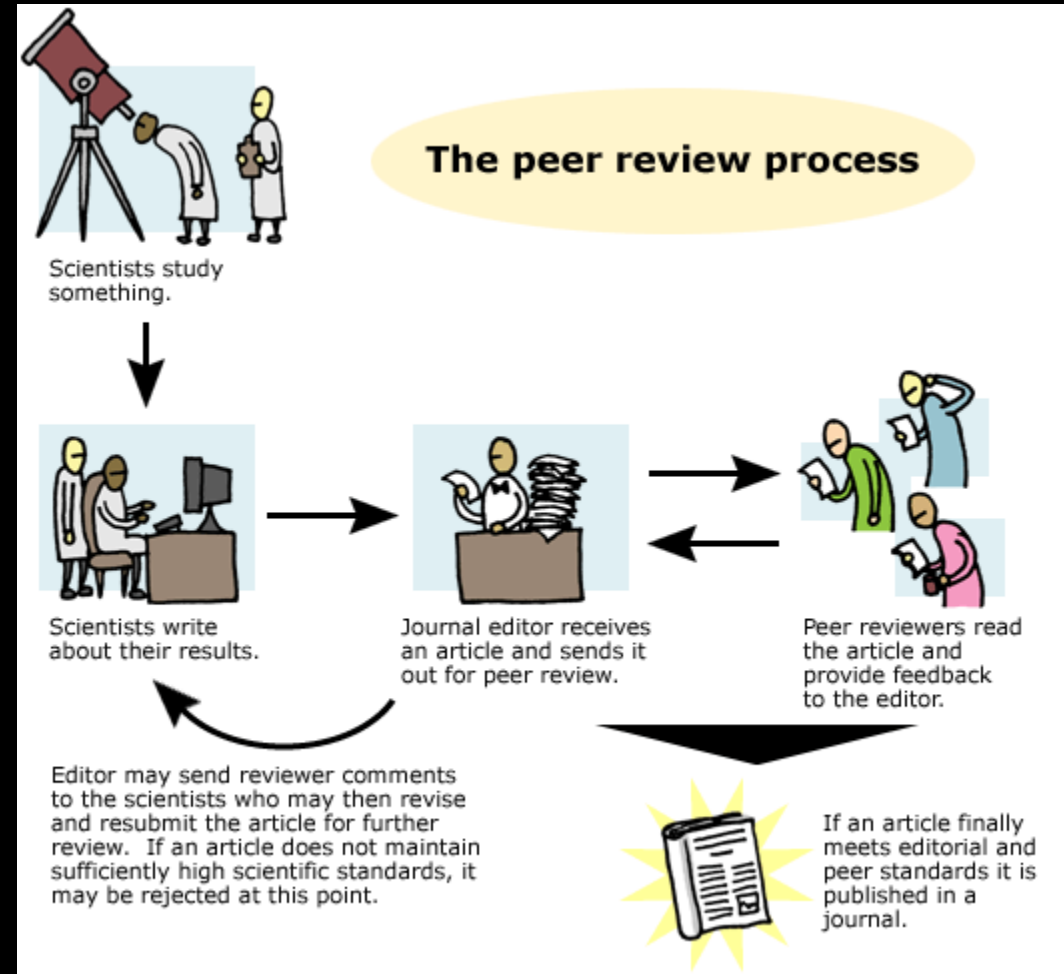
PUBLISHING

Journalism is often the public record of science



PUBLISHING

Peer Review as The Standard



Vertebrate / Human Subjects



Vertebrate / Human Subjects

Animal / Human Welfare

*VERTEBRATES: Institutional Animal Care and Use
Committee (IACUC)*

HUMANS: Institutional Review Board (IRB)

Creating a Culture of Belonging



RULES OF ENGAGEMENT

Be Open & Encouraging

Communicate Effectively & Respectfully

Contribute / Participate In Group Conversations

Step Up / Step Back: Give people
time/space to answer

Be collaborative,
considerate, conscientious
community members so
that Science gets a good
rap!

A close-up photograph of sand dunes, showing the rhythmic, undulating patterns of the sand. The lighting creates soft shadows and highlights, emphasizing the texture and curves of the dunes. The word "BREAK" is overlaid in the center in a bold, white, sans-serif font.

BREAK

SCIENCE ADVOCACY & ACTIVISM

Science Contents News Careers

SHARE EDITORIAL

 Science advocacy, defined

Joanne Padrón Carney
+ See all authors and affiliations

Science 18 Jul 2014:
Vol. 345, Issue 6194, pp. 243
DOI: 10.1126/science.1258492

CAREERS

Should scientists be activists?

BY BECCA MUIR | 18 MARCH 2020

Science Advocacy

chemistryworld.com/careers/should-scientists-be-activists/4011293.article

Science Activism

chemistryworld.com/careers/should-scientists-be-activists/4011293.article

BREAKOUT SESSIONS

1. What to you is the difference between **ACTIVISM & ADVOCACY** ?
2. What are the benefits and risks of being a science **ACTIVIST** or **ADVOCATE** ?
3. How does science **ACTIVISM** or **ADVOCACY** relate to your career aspirations?



LECTURE 10

SCUBA DIVING, UNDERWATER
PHOTOGRAPHY & MARINE SCIENCE
JOBS OUTSIDE OF RESEARCH