

	Monday July 25	Tue 7/26	Wed 7/27	Thu 7/28	Fri 7/29
9-10 am	Jeremy	Chris DiMenna - CERN HST	Bill Blair - JWST	Brian Camley	Elana, GSFC stuff
10-10:15 am -break					
10:15-11:15 am	Andrei - Quantum physics, 100th anno Stern-Gerlach, 10th anno Higgs	Marc Kamionkowski	rebekka klausen	nima?	Surjeet
11:15-11:30 - break					
11:30-12:30	Morris 1	Morris 2	Jeremy / Kevin stuff	nima?	Sarah Marie Bruno - microwave telescopes
PM	ISLE Day 1	ISLE Day 2	Matt Jacobs - spacetime diagrams, (+Jeremy) extra examples	Lessons that need help?	e/m apparatus??

*Do teachers need a brief refresher? Can we dive into blackbody diagrams and spectra?

Speaker list:

Morris

Jeremy

Does Nima care when he presents?

Marc Kamionkowski - emailed on mon 13 june. He responded yes on 14th

David Sing - emailed on 14 June (per suggestion from Sabine)

Toby

Jeremy sent out about 12 emails to faculty in Chem/Bio departments, looking for new topics ideally from faculty who aren't caucasian and/or aren't male

Toby, Steve, Marianne are seeking the following:

~~Chuck Bennett for thu~~

~~Adam Riess (or grad student) for wed~~ Toby emailed, he's at beach

~~Joseph Eimer for thu~~

Some sort of educational person - Danielle Bugge from ISLE? We plan to talk on 15 June at 3pm

Ideas for afternoons:

FITS data (chandra and/or [microObservatory](#))

Sloan data (stars and galaxies)

Evidence for the Big Bang

Astrophysical sources of particles

Nucleosynthesis in stars and supernovae

Feynman Diagrams

Differentiation in the classroom - how do you manage a class with varying math abilities but still have a clear common goal for the class? (discussion for the group)

Brainstorming on music stuff:

Visualizing music:

https://www.youtube.com/watch?v=ipzR9bhei_o

Video showing how rhythm and pitch are the same thing

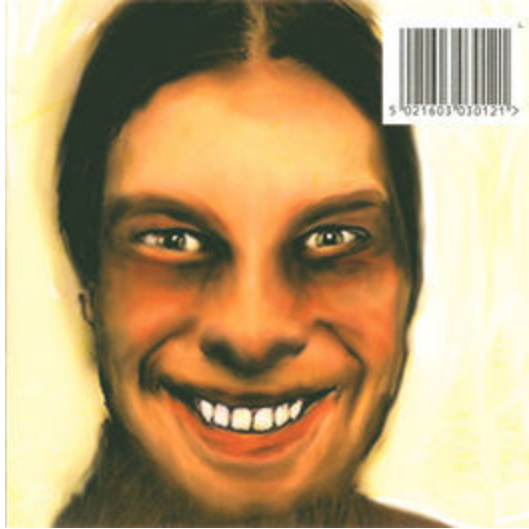
<https://www.youtube.com/watch?v=P3hdTbtLra4>

Aphex Twin Video

$$\Delta M_i^{-1} = -\alpha \sum_{n=1}^N D_i[\eta] \left[\sum_{j \in C[i]} F_{ji}[\eta - 1] + F_{ext_i}[\eta^{-1}] \right]$$

Song only: <https://www.youtube.com/watch?v=m8UCZfaYACo>

Spec Vid: <https://www.youtube.com/watch?v=M9xMuPWAZW8>



Academo online spectrum analyzer

<https://academo.org/demos/spectrum-analyzer/>

Adam neely's fractal vids (fractal wrong term??)

Coltrane (skips to 6:10)

<https://www.youtube.com/watch?v=J98jwrm5U4E&t=370s>

Smashmouth (skip to 5min)

<https://www.youtube.com/watch?v=mq0z-sxjNlo&t=300s>

Looking at spoken languages

Chinese

<https://secure-media.collegeboard.org/apc/ap-chinese-sect-1-part-a-sel-1-effective-2019.mp3>

Spanish

<https://secure-media.collegeboard.org/apc/ap-spanish-sect-1-part-b-sel-1-effective-2019.mp3>

French

<https://secure-media.collegeboard.org/apc/ap-french-sect-1-part-b-sel-1-effective-2019.mp3>

Musical instruments

different [stringed instruments](#) and another that has [other instrument types](#),

For data activity and because it's cool:

File 1 = pure tones

File 2 = pure tones but with 60Hz transformer sounds

File 3 = pure tones with room noise

File 4 = pure tones with loud white noise

File 5 = all together

Feynman stuff

Constant velocity

Collision

Electrons scatter

Annihilation

Pair production (why needs nucleus??)

Electrons scatter but photon makes a pair

Down decays to up

Neutral Current: quark stuff becomes leptony stuff later - discovery of Z!!

https://cpb-us-e2.wpmucdn.com/sites.uci.edu/dist/c/442/files/2012/11/Higgs_prod_graphs_new2.jpg

Thoughts for 2023

I thought of two potential future talks – perhaps too high-level for us, but maybe we could talk about adding some stuff approachable by us teachers:

1. Mass shell / virtual particles
2. Why are there 8 gluons instead of 9?