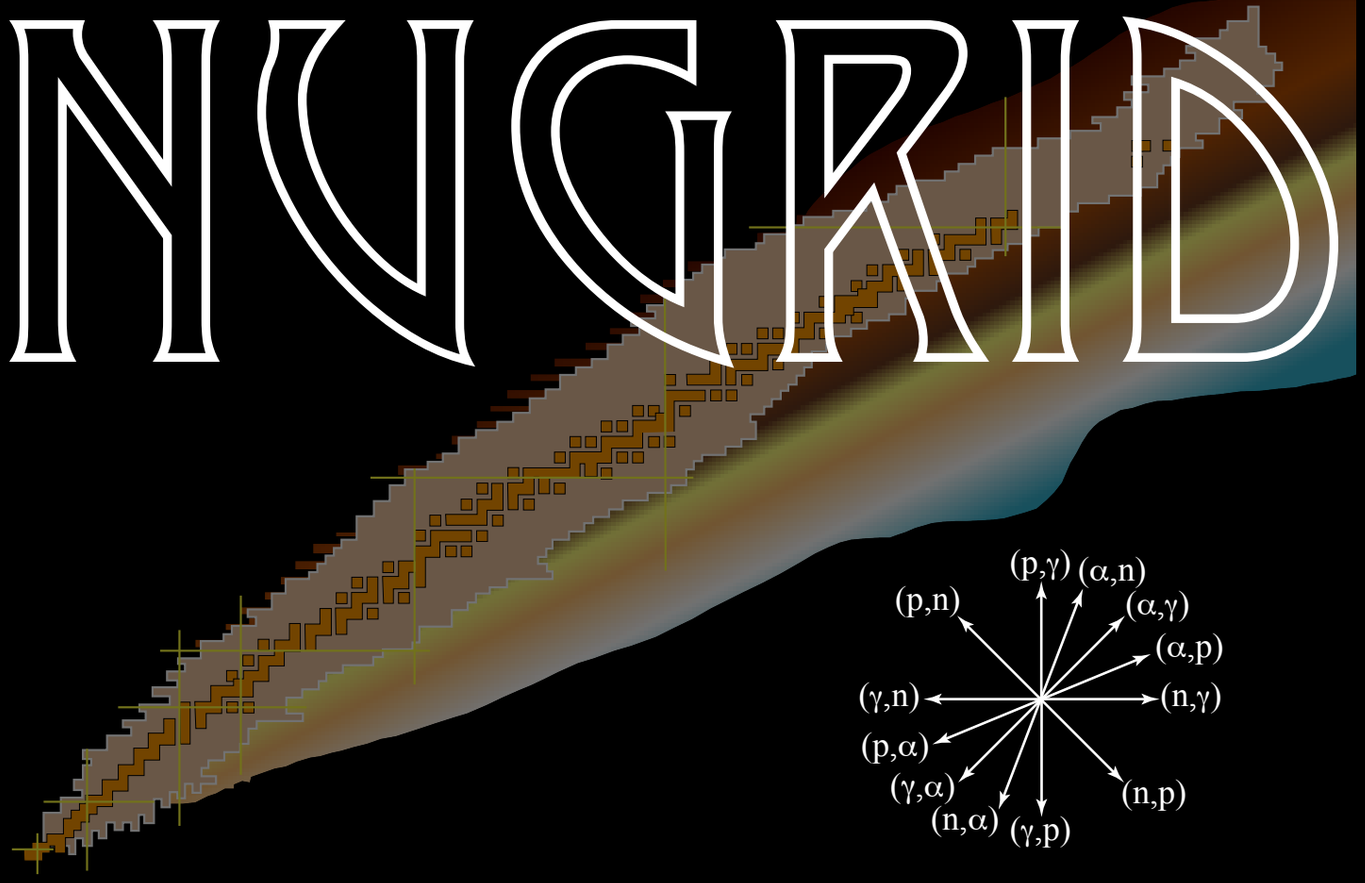
Among *my* favorite astrophysics targets for FRIB are the production and destruction channels of

1	Big Bang	^{7}Li	
2	H burn	^{7}Be, $^{12\text{-}13}$C, $^{13\text{-}14}$N, ^{15,16,17}O, ^{17,18}F	
3	He burn	^{4}He, ^{12}C, ^{16,18}O, ^{18}F, ^{20,22}Ne, ^{25,26}Mg, ^{44}Ca, ^{47}Ti, ^{51}V	
4	C burn	^{12}C, ^{20,21,22}Ne, ^{21,22,23}Na, ^{23,24,25,26}Mg	
5	Ne burn	^{20}Ne, ^{24,25,26}Mg, ^{27}Al, ^{31}P, ^{29,30}Si	
6	O burn	^{16}O, ^{31}S,$^{30\text{-}31}$P,^{28}Si, ^{32,34}S, ^{35}Cl,^{36,38}Ar	
7	Si burn	^{24}Mg, ^{28,30}Si, 32,^{34}S, ^{36,38}Ar, ^{40}Ca, ^{54,55,56}Fe, ^{57}Co, ^{58}Ni	
8	s-process	^{12}C, ^{13}C, ^{13}N , ^{22}Ne, ^{48}Ca, ^{50}Ti, ^{54}Cr ^{85}Kr	
9	i-process	^{10}B, ^{11}B, ^{18}O, ^{21}Ne, ^{25}Mg, ^{26}Mg	see Denisenkov's
10	r-process	^{89}Y,^{89}Sr, ^{90}Zr,^{130}Cd, ^{195}Th, ^{247}Cm, ^{127,129,132}I, ^{232}Th, ^{235,248}U, ^{244}Pu	see Surman's
11	rp-process	^{72}Kr, $^{103\text{-}106}$Sn, ^{105,107}Sb, ^{107,108}Te	
12	νp-process	^{78}Kr,^{84}Sr, ^{92,94}Mo, ^{96,98}Ru	see Fröhlich's
13	p-process	^{31}P, ^{35}Cl, ^{45}Sc, ^{39}K	see Herwig's
14	Radionuclides	^{7}Be, ^{22}Na, ^{26}Al, ^{45}V, ^{44}Ti, ^{53}Mn, ^{60}Fe, ^{56,57,60}Co, ^{56,57}Ni	see Fryer's
15	Fission recycling	^{254}Cf, ^{254}Pu, ^{260}Fm	see Mumpower's
16	ν astronomy	^{11}B, ^{19}F, ^{53}Fe, ^{55}Co, ^{54}Mn, ^{54}Mn, ^{57}Mn, ^{52}V	
17	Cosmic-ray spallation	^{6}Li, ^{9}Be, ^{10}B	
18	Pyconuclear	^{12}C,^{40}Mg, ^{56}Fe, ^{56}Cr, ^{56}Ti, ^{56}Ca, ^{56,62}Ar	
19	Isomers	^{26}Al, ^{85}Kr	

Experimentalists may find it useful to have free and open tools that enable *rapid and painless* exploration of the potential astrophysical impact of a new FRIB measurement.

Reaction networks is one such tool; impose a thermodynamic trajectory to explore the nuclear kinetics and yields.

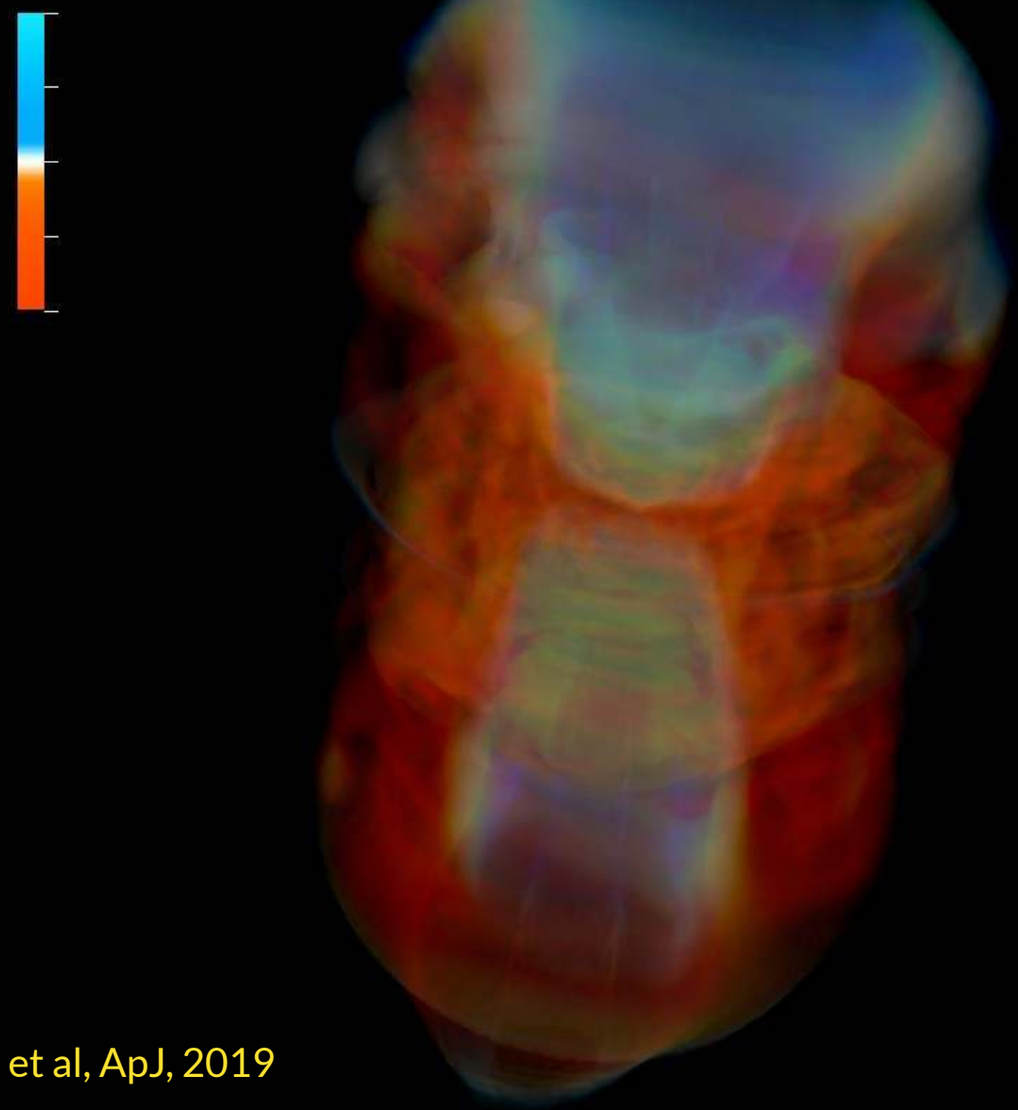
Marco will probably discuss the NuGrid platform.
Other options include Jonas Lippuner's Skynet,
Brad Meyer's libnucnet, and fxt's torch.



Stellar models, for single and binary stars, is another tool.
Select an initial mass and metallicity, make some assumptions, and explore the nuclear dynamics and final yields.

We anticipate a new service that enables a user to upload a new FRIB measurement and run one or a suite of MESA models.

3D, general relativistic, radiation, magnetohydrodynamics is another tool. They are currently not rapid or painless. Apologies.



Miller et al, ApJ, 2019

Engaging a theorist is another option.