Lit Review: A space to lay out the "conversation" happening in your topic and progress into your claims (the why? Of what your specific topic is, why you think what you do, and why you have chosen to use various models, frameworks of thought, etc)

→ who is talking about ultra-diffuse galaxies? What is known? What is not?

→ what are the various models for measuring the baryonic processes? What are the merits of each, and why does your simulation use this model?

→ who came up with the FIREBox galaxy simulation?

ACDM → baryonic process model→ dwarf galaxies → FIREbox

Each arrow contains historical context

FIREbox is the "how" of your thesis

Broader topics:
1. Galaxies simulations and how we do them
2. Studying dwarf / and ultra diffuse galaxies
3. FIREbox as the link between these two
4. Detail precisely what you are researching, your hypotheses or central research questions

Executive summary: write last

→ seems more argumentative than abstract

→ the tldr of the story you're telling

NEXT STEPS:

→ (under the umbrella of "galaxy simulations and how we do them"): compare models: "Bob physicist uses this model because------ and it does x, y, and z" however "Mary physicist uses this model, because---"
- models are means to an end, as in different models do different things
- in theory all the models would be in agreement with each other, but at the end of the day you have to pick and choose what's included in the model.
- The models are showing different cross-sections of the same images. When you are talking about the models, this is a way to also say *what people are studying in these galaxies* a.k.a what is *known.*

→ dwarf galaxies + ultra diffuse galaxies
- why they are cool (they are the new thing everyone is studying; this is a hot topic! We have new technology (james webb), we are finding them in real life. The simulation data often

doesn't line up with the real life data, so we are trying to figure out why the simulations OR observations are wrong.)

- why they are important (easier and cheaper to observe a simulation than a real galaxy; we want to test our assumptions about the physics a.k.a what happens when we try to apply our theories—if there are real conflicts, then we know there is something wrong about our assumptions; the created universe doesn't look like our universe...what's missing? This would be a great finding). Even ACDM is widely used, there are unresolved issues

- what is known: what are important findings made recently? Moreno's lab (dark matter deficient galaxies); findings related to FIREbox. Would be good to say some adjacent findings to what you're going to be looking at (place this before going into what YOU are looking at)