How I became a cancer researcher

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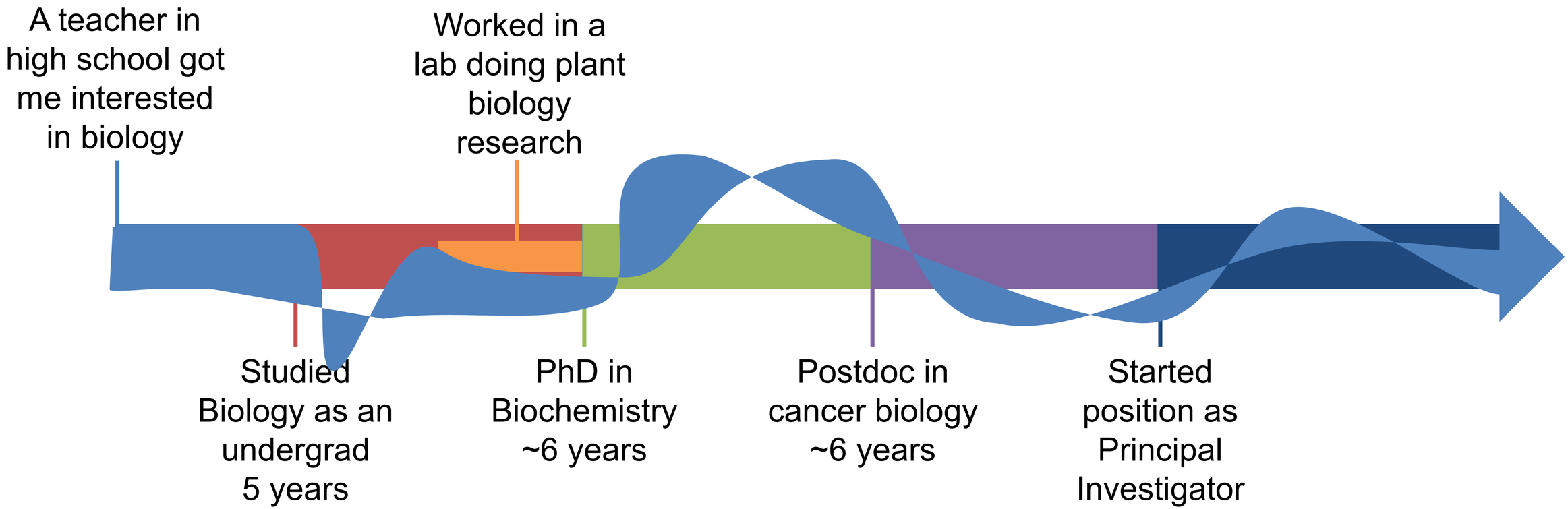
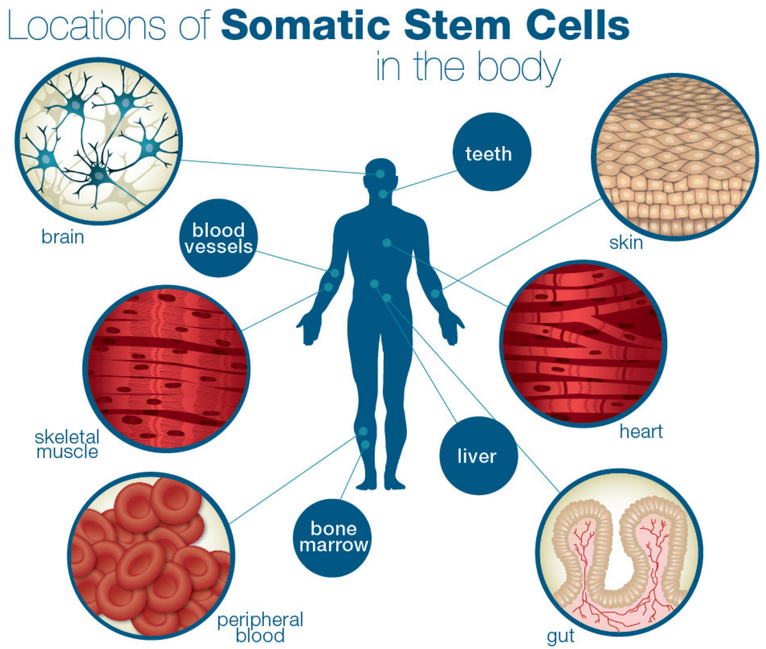
LCMB, Center for Cancer Research
National Cancer Institute

How did I get here?

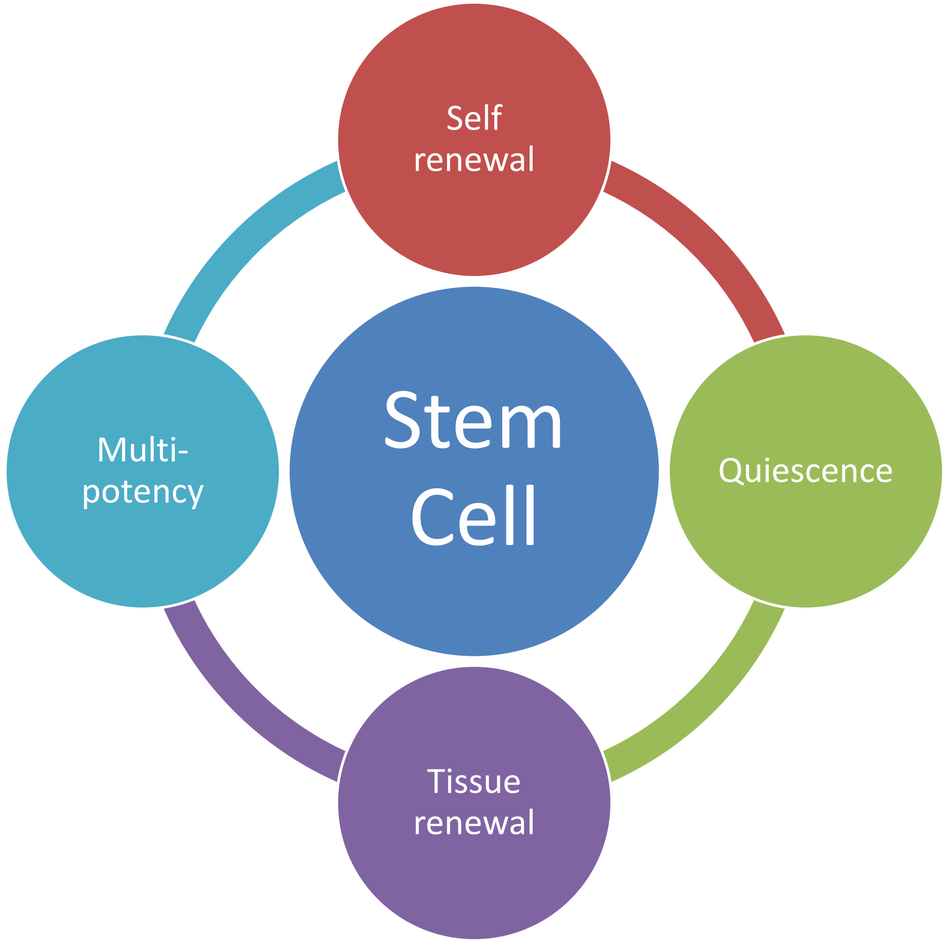


What do I do?
Studying adult (somatic) stem cell biology



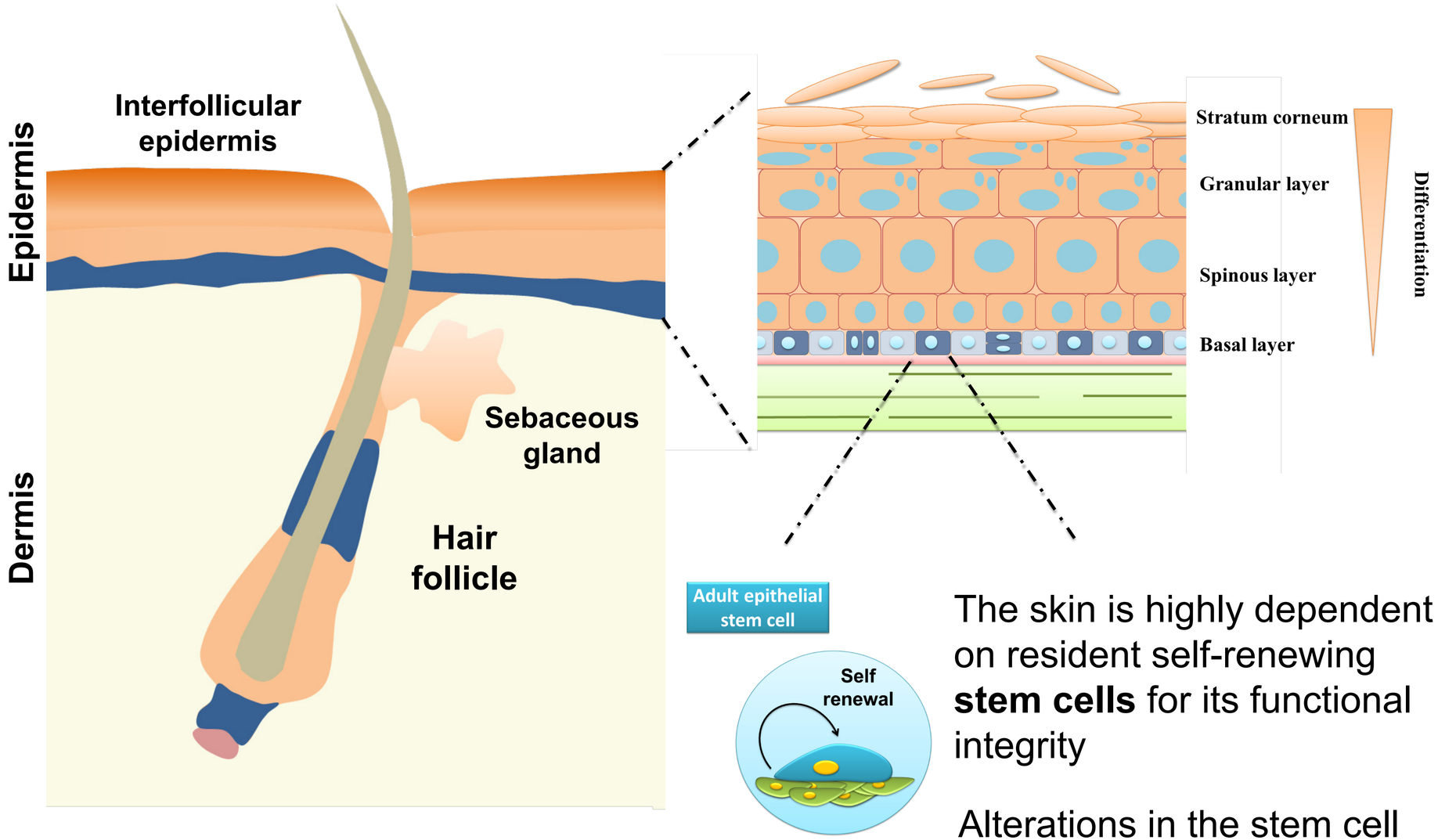
http://learn.genetics.utah.edu/content/stemcells/quickref/

The **maintenance** and **repair** of adult tissues relies on small populations of resident **stem cells**



Barker, Bartfeld and Clevers. Cell Stem Cell 2010.

The skin as a model to study stem cell biology



The skin is highly dependent on resident self-renewing **stem cells** for its functional integrity

Alterations in the stem cell compartment are rapidly and easily observed

Pedro et al. **Stem cells**. 2020.
Iglesias-Bartolome et al. **Curr Opin Cell Biol**. 2013.
Iglesias-Bartolome and Gutkind. **Curr Opin Cell Biol**. 2011.
https://www.ncbi.nlm.nih.gov/myncbi/ramiro.iglesias-bartolome.1/bibliography/public/

Non-melanoma skin cancer

Each year in the US, over 5.4 million cases of non-melanoma skin cancer are treated in more than 3.3 million people

Treatment of non-melanoma skin cancers is rapidly increasing

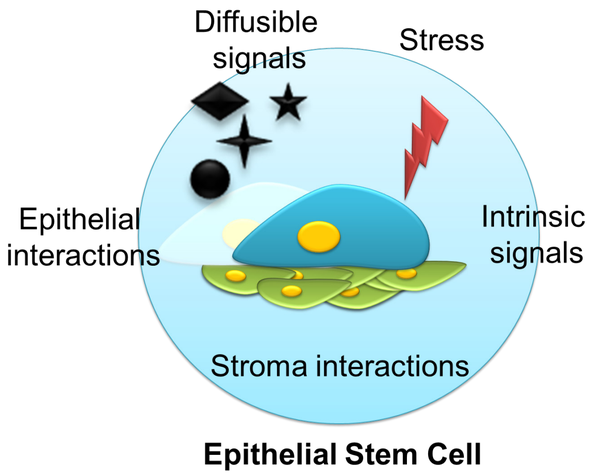
Basal Cell Carcinoma (BCC)

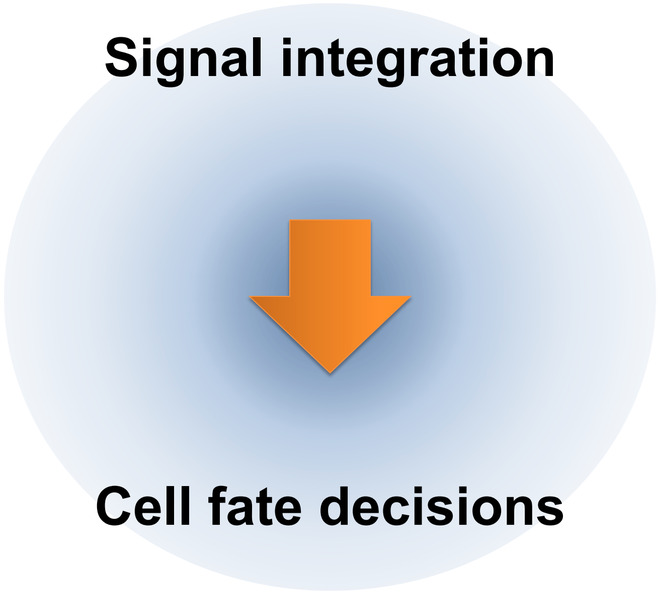
- Most common human cancer
- Local, less invasive

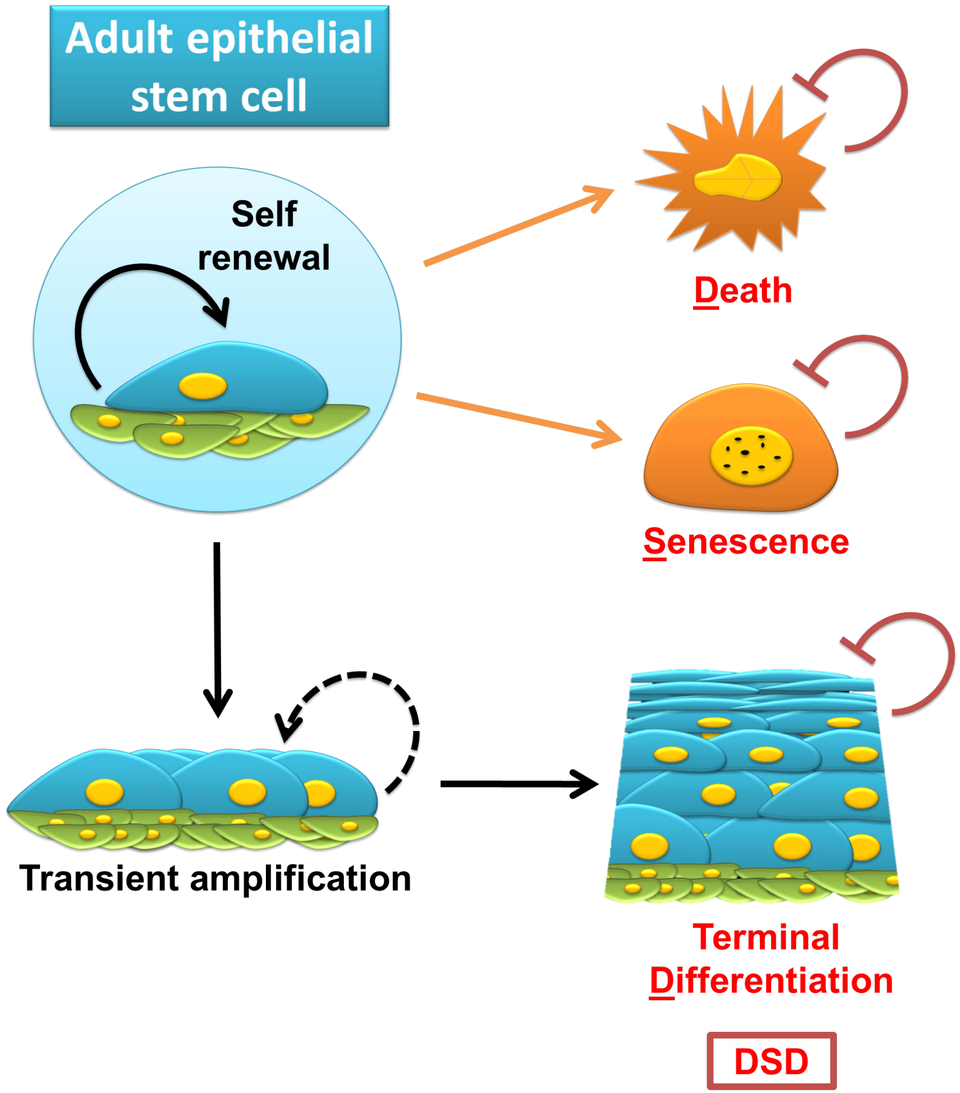
Squamous Cell Carcinoma (SCC)

- More aggressive and metastatic
- Can also arise in lung, breast, cervix and head and neck

Skin stem cell fate decisions







Iglesias-Bartolome et al. **Curr Opin Cell Biol**. 2013.
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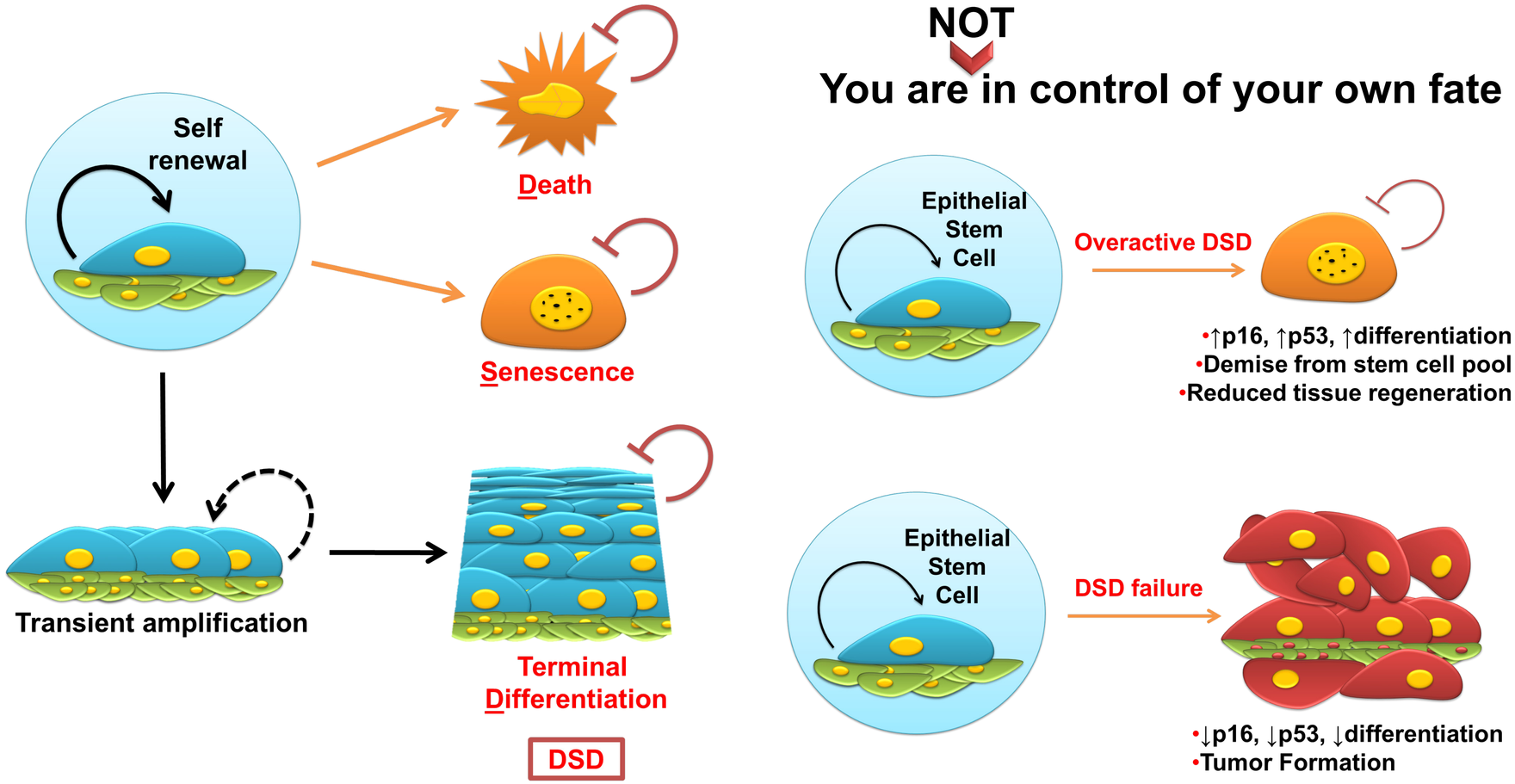
Skin stem cell fate decisions



Understand signaling pathways regulating skin stem cell fate decisions to find new cancer and tissue regeneration targets

https://ccr.cancer.gov/laboratory-of-cellular-and-molecular-biology/ramiro-iglesias-bartolome

What have I learned?

The **only** thing I **know** for sure, is that I **know nothing**.

- Choose good Mentors and be a good Mentor
- Be sure what are your and your Mentor/Mentee expectations (communication!)
- Invest in yourself (wellbeing and skills)
- Give yourself a break, you are not a movie scientist (but do not be sloppy!)
- Take it one step at a time (have a general, flexible plan)
- Arm yourself with patience and resilience (no shortcuts!)
- Remember the long-term goal and put things in perspective
- Take charge

Working at NIH

The **NIH mission** is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.

Factors that are considered in faculty recruitment

- Quality and innovation in previous work and future research plan
- Ability to present a compelling vision of the importance of research in writing and orally
- Potential impact on public health
- Potential to make use of the special environment within the NIH IRP
- Publication Record
- Letters of Recommendation
- Leadership/mentoring/outreach activities
- Previous competitive research support or other special recognition
- Complement existing expertise at NIH
- Areas of interest

Resources

- **Earl Stadtman Investigator Search**

http://irp.nih.gov/careers/trans-nih-scientific-recruitments/stadtman-tenure-track-investigators
http://tenuretrack.nih.gov/apply/faq/stadtman.html

- **“Tenure-Track Opportunities at the NIH”**

https://videocast.nih.gov/summary.asp?Live=19482&bhcp=1

- **Careers at NIH**

https://irp.nih.gov/careers
https://irp.nih.gov/careers/faculty-level-scientific-careers
https://diversity.nih.gov/

- **Training Programs at NIH**

https://www.training.nih.gov/
https://www.training.nih.gov/career_services/postdoc_jobs_nih

- **NIH Intramural PIs by Scientific focus area**

http://irp.nih.gov/our-research/scientific-focus-areas

- **Searchable database of NIH intramural research projects**

http://intramural.nih.gov/search/index.tml