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# DEVweCAN: Cancer Development and Targeted Therapies

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**DEVweCAN**

UNIVERSITE DE LYON

Cancer Development  
and Targeted Therapies

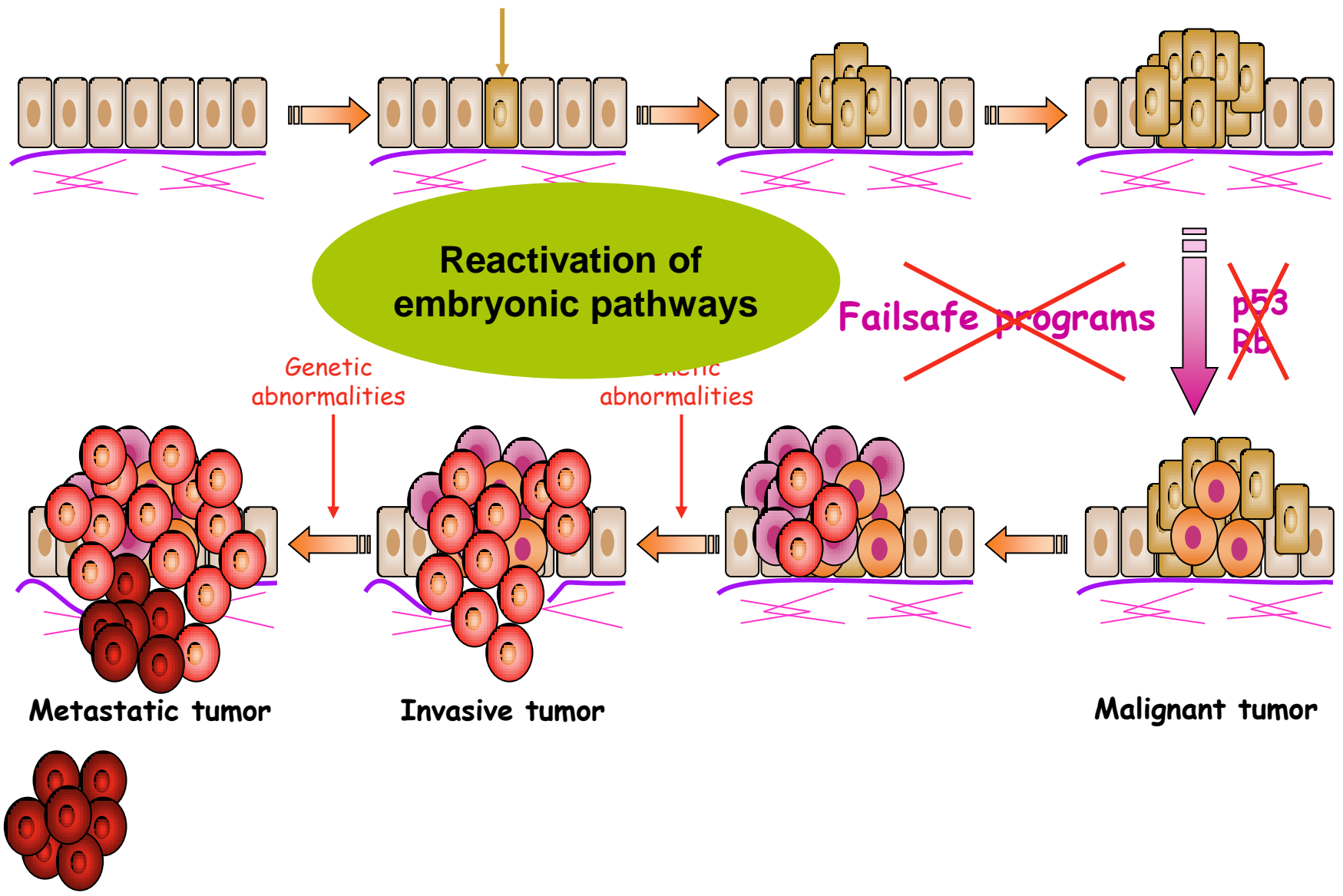


## Cancer key figures:

- 13 millions of new cases/annually
- 7 millions death/annually
- 27 millions of patients with cancer
- Projection for 2030 with 17 millions death/annually

- Current therapies show major limitations (only 1 over 2 patients has an important life prolongation)
- Toward personalized therapies (targeted drugs to specific alteration-bearing cancer)
- Thus far, with the exception of the immunotherapies, most of the targeted therapies which are currently under development focus on alteration of proliferative pathways (kinase inhibitors) and show only limited effects (a few months increase of survival)

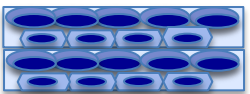
# DEVweCAN scientific focus



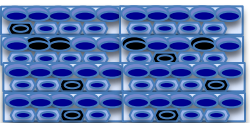
# A project focused on three main aspects



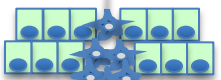
**Self renewal/proliferation**



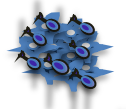
**Differentiation**



**Senescence/apoptosis**



**Organogenesis**



**Cell migration**

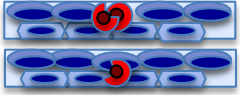


**EMT**

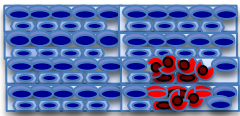
**Immune tolerance**



**Proliferation**



**Differentiation**

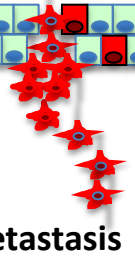


**Senescence/apoptosis**



**EMT**

**Metastasis**



**Immune surveillance**



**Invasion**



- **127 publications** since 2011,

- Castet et al., **Nature**, 2012 -> DCC as a tumor suppressor
- Caramel et al., **Cancer Cell**, 2013 ->Embryonic EMT-inducer and melanoma
- Lucino et al., **Cancer Cell**, 2013 ->PlexinD1 as a novel Dependence receptor
- Ichim et al., **Mol Cell**, 2013 ->TrkC killing via Cobra
- Puisieux et al., **Nature Cell Biol**, 2014 ->Embryonic EMT and tumor progression
- Chen et al., **Nature Comm**, 2015 ->STAT3 and pluripotency
- Aksoy et al., **Nature Comm**, 2014 ->Klf4/5 in meso/endoderm ES differentiation
- Ozmadenci et al., **Nature Comm**, 2015 -> netrin-1 and pluripotency/IPS
- Delloye-Bourgeois et al., **Nat Neuroscience**, 2015 ->PlexinA1 and guidance
- Arbeille et al., **Nature Comm**, 2015 -> Sema3b and neuroepithelial division
- Grandin et al., **Cancer Cell**, 2016 -> structure netrin-1 and preclinic on netrin-1 mAb

- **21 patents** since 2011 and 3 licences to Pharmas

- EuroSarc and Lyric coordination
- Scientific honors:



4 DEVweCAN members



P. Mehlen nomination at the  
National Academy of Sciences  
in 2013

- 2 ERC programs: Dr Mehlen (Advanced) and Dr. Castellani (Consolidator)



- Several European projects (leader): HERMIONE-2man FP7, TUMADOR FP7, ITN BONE-NET and ITN TURBO, Individual Fellowship VIRLAT



EMT target  
(drug discovery by C3D)

Netrin-1 mAb entering phase I  
Q2 2016 (Netris Pharma)

Prediction of cancer  
progression  
(OncoFactory)

ProFileR

**Basic Research**



**Drug design and discovery**

**Clinical trials**



# Partnerships with Institutions and Industries



Today

DEVweCAN leverage effect



# Education: the Oncology Master's program



Master labelled "Master Université de Lyon" awarded by its HEI members (universities and top engineering schools)

**Courses:**  
Biology of cancer  
Animal models  
Translational Medicine,  
Epidemiology,  
Bioinformatics,  
Economics,  
Human sciences

Opened in  
**2013**

**M1 Oncology**

**Program taught in English**

International symposium training in M2



Opened in  
**2014**

**M2 Research and Oncology**

**M2 Omics in Oncology**

**M2 Therapeutic Innovation**

Opened in  
**2014**

Opening in  
**2016**



# Thank you for your attention!

