

# Omics guided radiotherapy

## Clinical tools for interventional radiotherapy

LUCA TAGLIAFERRI - MD, PhD



# THE PATIENT-CENTRIC APPROACH

---

**Create value for the patient**, defined as the ability to receive the **best possible treatment**, taking into account the **patients' wishes**, his or her **personal environment**, and therefore increase the chances of **surviving** and optimising **quality of life** during and after treatment.

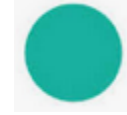


*Radiation Oncology.*  
**Optimal Health FOR ALL,**  
Together.  
- ESTRO 2030 VISION -

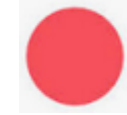
- Porter ME. 2010. What is value in health care? *N Engl J Med*;363:2477-81.
- Lievens Y, Audisio R, Bansk I, et al. 2019. Towards an evidence-informed value scale for surgical and radiation oncology: a multi-stakeholders perspective. *Lancet Oncol*; 20: e112–23



**Providing clinical decision support**



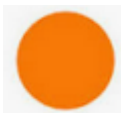
**Mining –omics, analysing data**



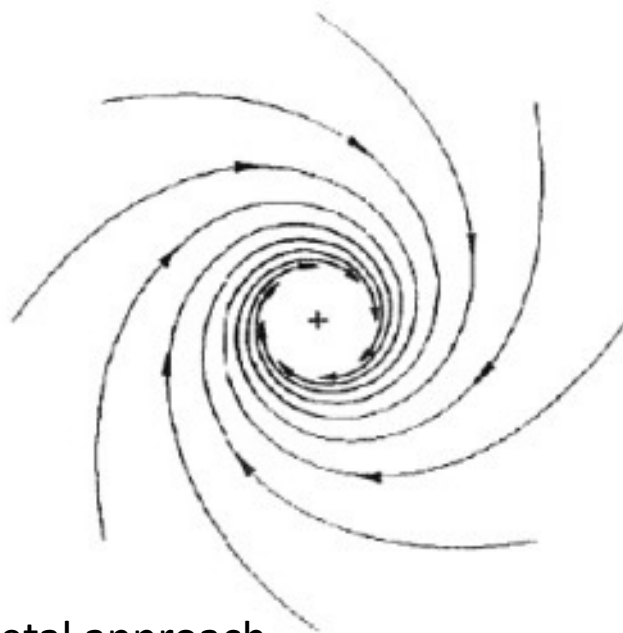
**Facilitating repetitive tasks, optimising time**



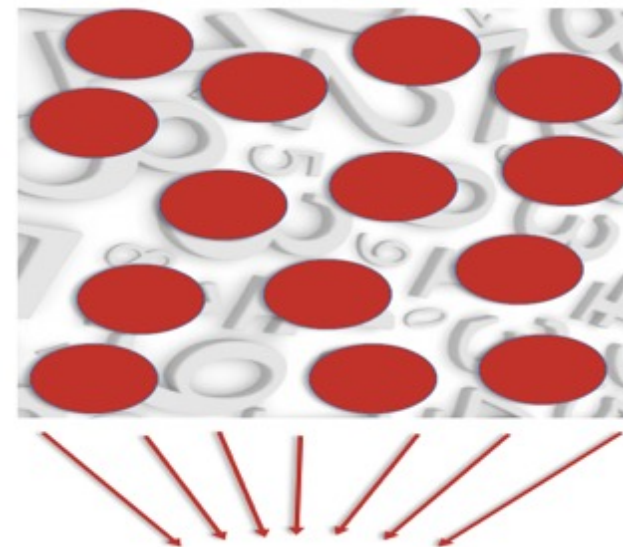
**Modeling behaviors, in heterogeneous contexts**



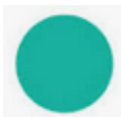
## Providing clinical decision support



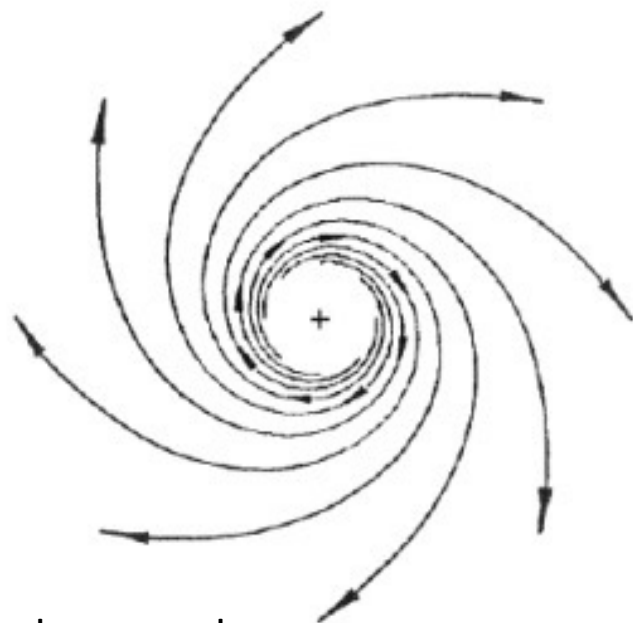
centripetal approach



**PREDICTIVE  
MODELS**

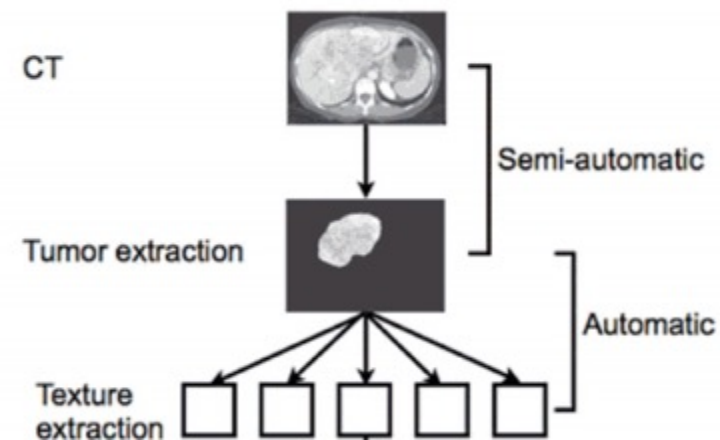


## Mining –omics, analysing data

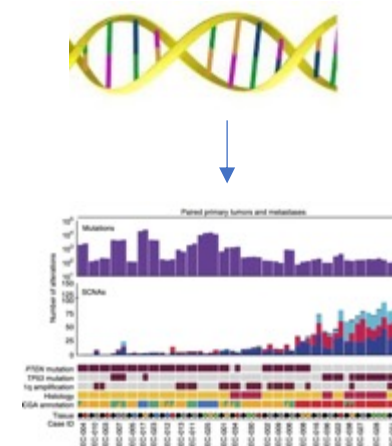


centrifugal approach

RADIOMICS



GENOMICS

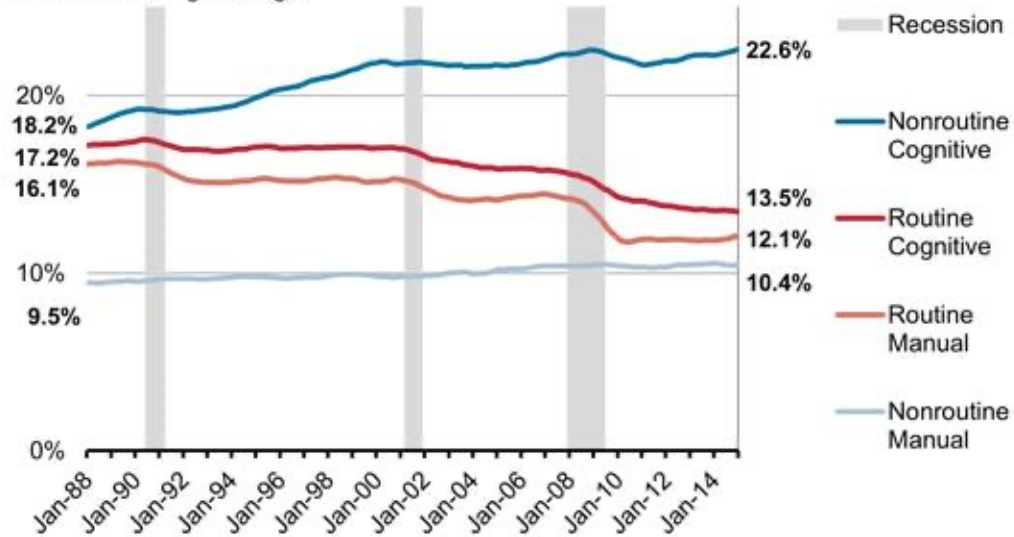




## Facilitating repetitive tasks, optimising time

### Decline of Routine

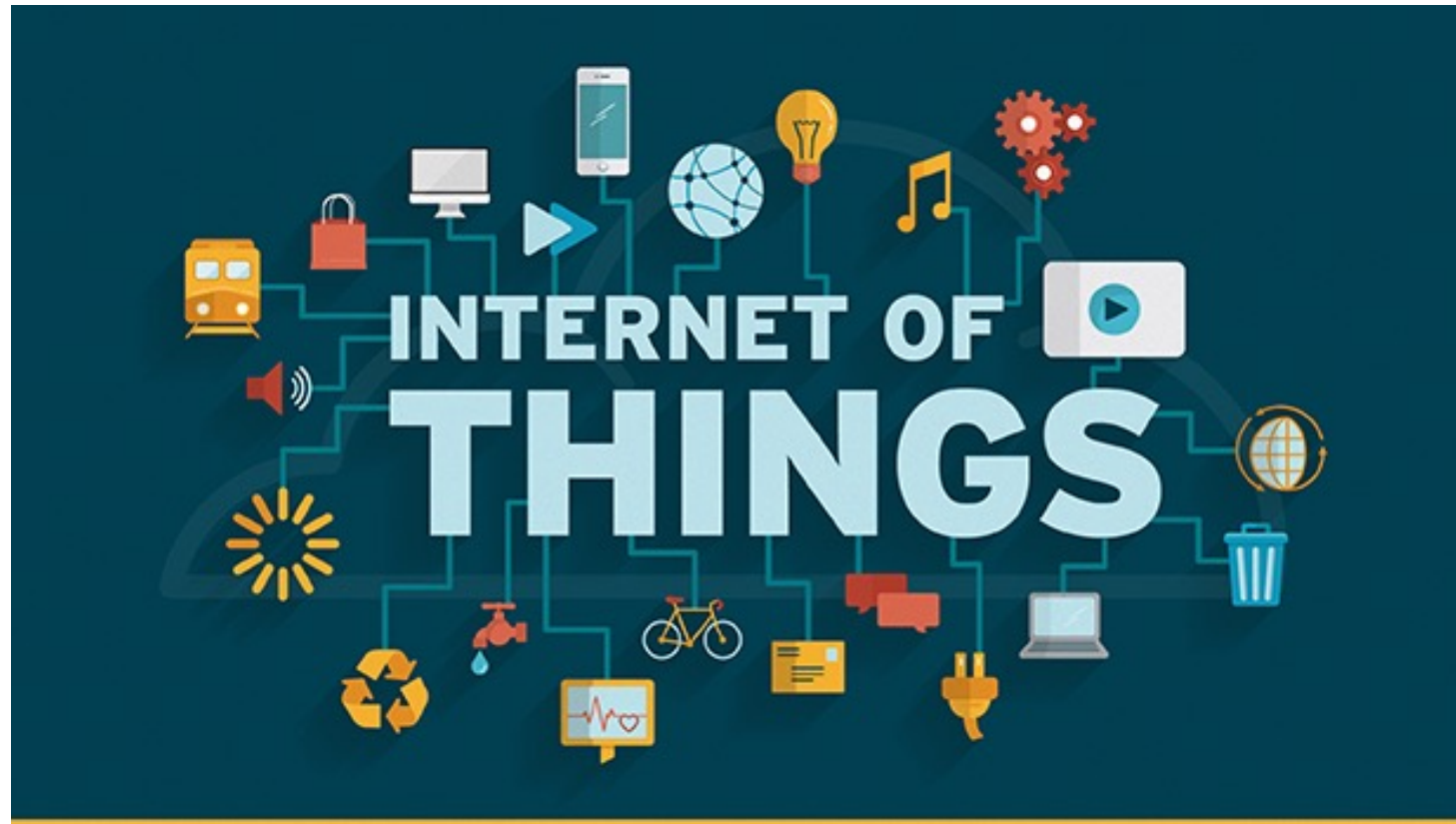
Percentage of the population in jobs that have been identified as routine and nonroutine, 12-month moving average



Source: Henry Siu and Nir Jaimovich for Third Way | WSJ.com



## Modeling behaviors, in heterogeneous contexts





**Providing clinical decision support**

**Mining –omics, analysing data**

**Facilitating repetitive tasks, optimising time**

**Modeling behaviors, in heterogeneous contexts**

# ARTIFICIAL INTELLIGENCE and INTERVENTIONAL RADIOTHERAPY



# THE RADIATION ONCOLOGIST POINT OF VIEW



**Providing clinical decision support**



**Mining –omics, analysing data**



**Facilitating repetitive tasks, optimising time**



**Modeling behaviors, in heterogeneous contexts**



# Thank you for your attention

## LUCA TAGLIAFERRI – MD, PhD

Fondazione Policlinico Univeristario «Agostino Gemelli» IRCCS

Gemelli ART (Advanced Radiation Therapy) - Interventional Oncology Center (IOC)

Largo Gemelli,8 - Rome



mailto: [luca.tagliaferri@policlinicogemelli.it](mailto:luca.tagliaferri@policlinicogemelli.it)



<http://www.gemelliart.it/personnel/dott-luca-tagliaferri/>



<https://www.linkedin.com/in/luca-tagliaferri-a80878112/>



<https://www.youtube.com/user/gemelliart>



<https://it-it.facebook.com/ucsc.gemelli.art/>



Gemelli



Fondazione Policlinico Universitario Agostino Gemelli IRCCS  
Università Cattolica del Sacro Cuore

ART

Advanced Radiation  
Therapy

Interventional Radiotherapy

INTERACTS

Active Teaching School



Interventional Oncology Center  
Centro di Oncologia Interventistica