

**Doctoral Networks:
opportunità per giovani ricercatrici e ricercatori**

GAP

Una testimonianza di MSCA DN dal Politecnico di Milano

Siena, 7 luglio 2023



POLITECNICO
MILANO 1863

ABOUT...

Politecnico di Milano



1,300 professors



42,000 scholars



7 campuses



HR Excellence in Research



ABOUT...

Department of Mechanical Engineering

- Transport and sustainable mobility
- Service robots and hybrid materials
- Manufacturing and production systems
- Biomechanics, biomaterials and smart materials

ABOUT... US

Laura Vergani



Full Professor at the Department of Mechanical Engineering

Mechanical Engineer

Former Alta Scuola Politecnica Board Member

Former AIAS Directory Group

#synchrotron

#fragility

#bone

#embrittlement

#fracture mechanics

#hydrogen

Research Scientist

Biomedical Engineer

Former Alta Scuola Politecnica Member



Federica Buccino

#damage

GAP GROUP:



- 1 associate professor
- 1 research scientist
- 3 PhD students
- 25 master thesis students

GAP as MSCA Project (2023-2027)



T. Nicoletti

J. Michler

POLITECNICO
MILANO 1863



EPFL

P. Dlotko



POLISH ACADEMY of SCIENCES



Trinity
College
Dublin
D. Taylor



Empa

Materials Science and Technology

J. Schwiedrzik



I.R.C.C.S. ISTITUTO
ORTOPEDICO
GALEAZZI
G. Banfi

UNIVERSITÉ DE STRASBOURG

A. Carradò

TU/e
S. Hofmann

EINDHOVEN
UNIVERSITY OF
TECHNOLOGY



Elettra Sincrotrone Trieste
G. Tromba



F. Berto

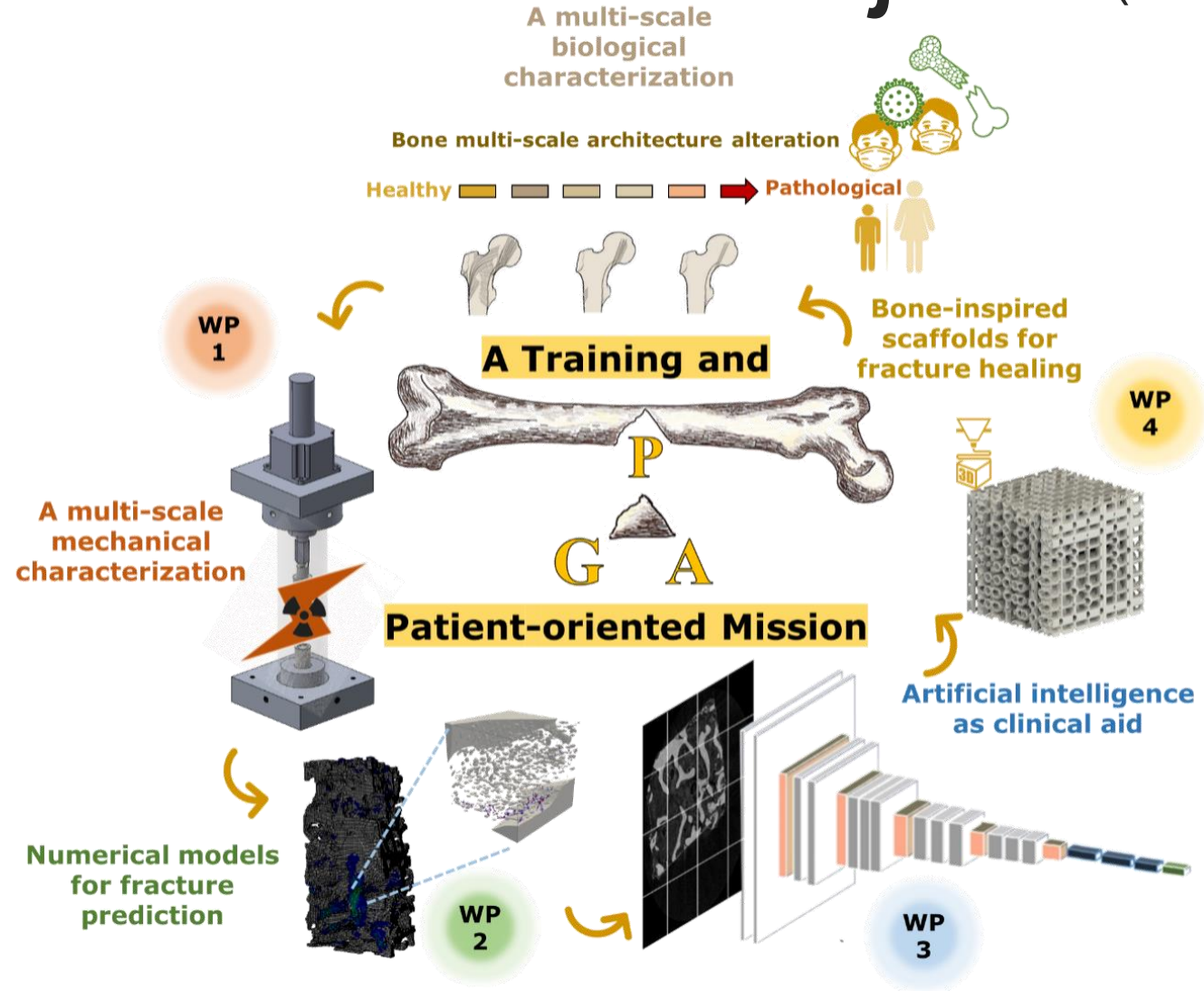


A. Zadpoor



Image-Guided computational and experimental Analysis of fractured Patients

GAP as MSCA Project (2023-2027)



But let's make a few steps **back...**



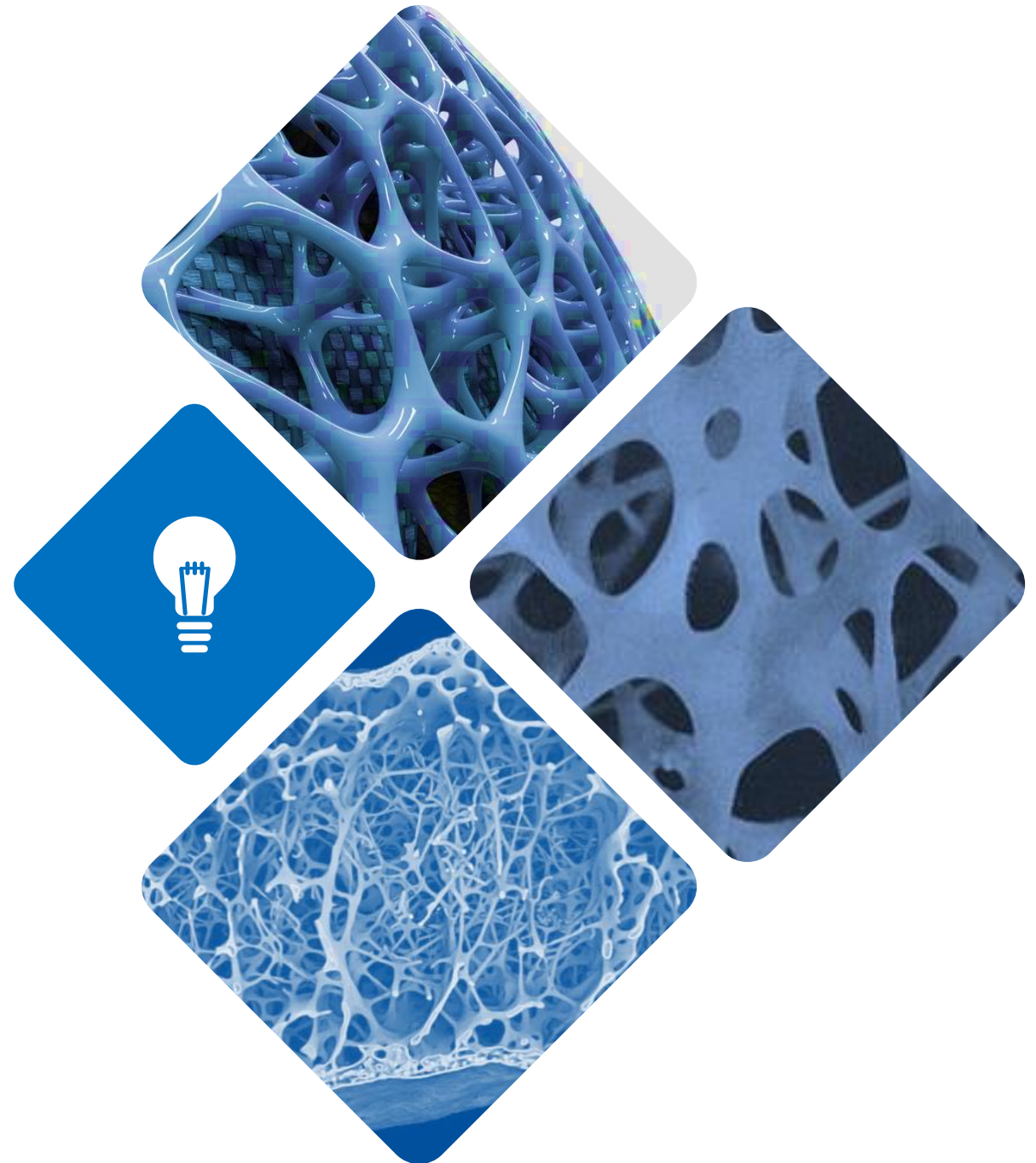
Why MSCA DN?

When we started?

Who we gathered in the Consortium?

What we planned to talk about?

Where and how were the secondments organized?



MSCA DN... WHY?

MSCA is a highly selective European call, aiming at establishing doctoral programs through **multi-sectorial** partnerships

01



Doctoral Networks encompass partnerships between **universities, research institutions, and infrastructures** (academic and non)

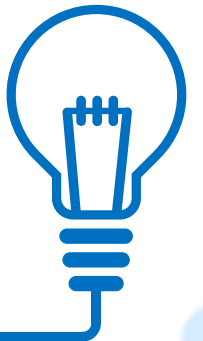
03

02

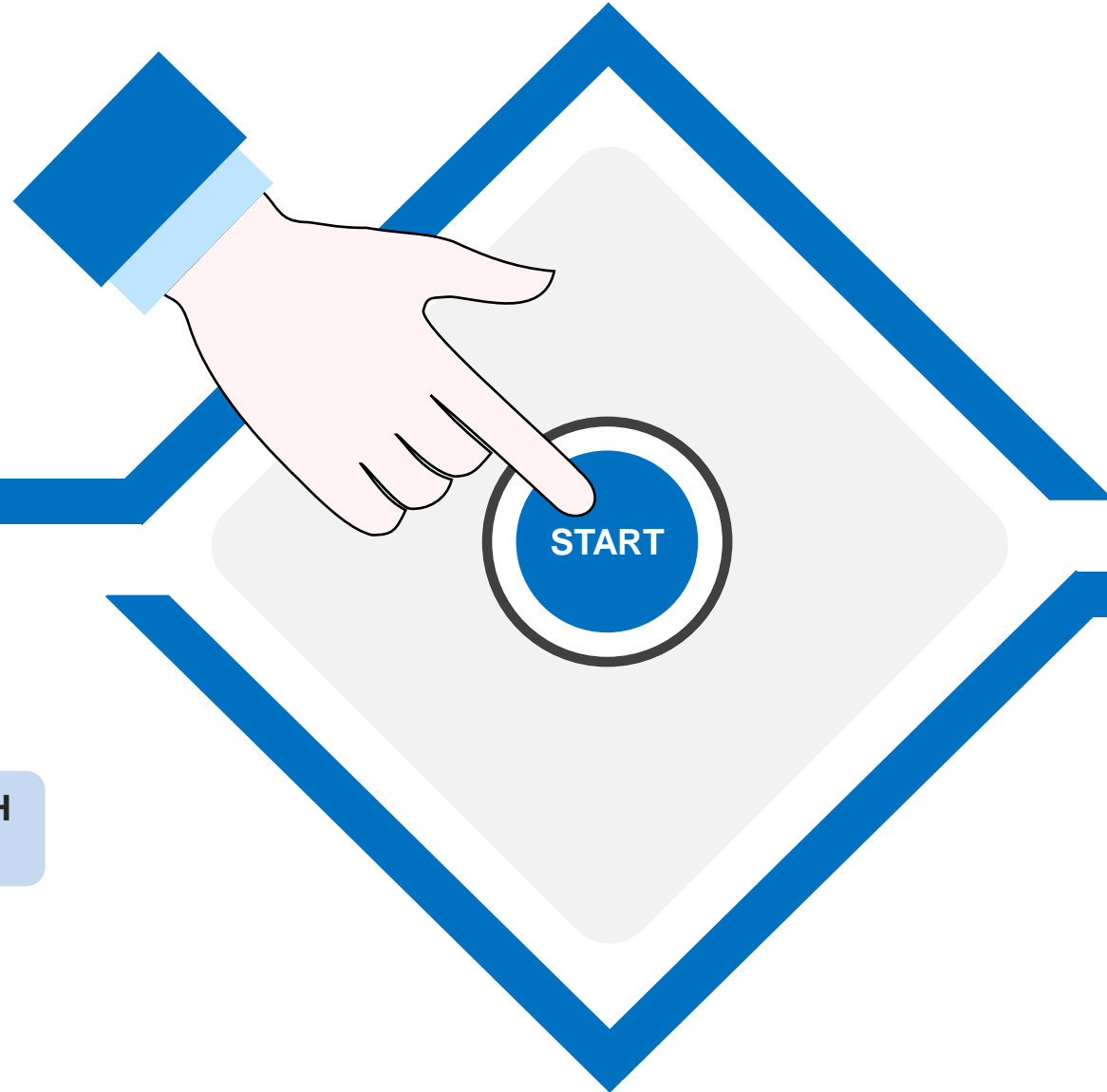
The over-arching goal is to provide highly skilled doctoral candidates with training that improves their **creativity, innovation**, and long-term **employability**.

04

1000 proposals submitted and less than 150 selected for funding (**20** in Italy)



The KEYS to success



In Our Opinonon



Topic



RESEARCH
OFFICE!



Focus on DC



Consortium

WHEN? Our GAP journey



July 2021

The starting point



August 2021

The abandonment



November 2021

The team, GAP is born



April 2021

A sad story: Letter for reserve list



September 2022

The turning point



November-March 2023

We did it!



WHO we gathered in the Consortium?

Universities

Experimental field

Clinical centres

Orthopaedic surgeons, biotech people

Multi-sectoriality
Multi-disciplinarity

Universities

Numerical field

Social institutions

On the patient side



WHAT: Broken bones, broken lives



A I M OF GAP RESEARCH



Elucidating micro-damage mechanisms towards the identification of micro-scale fragility indexes

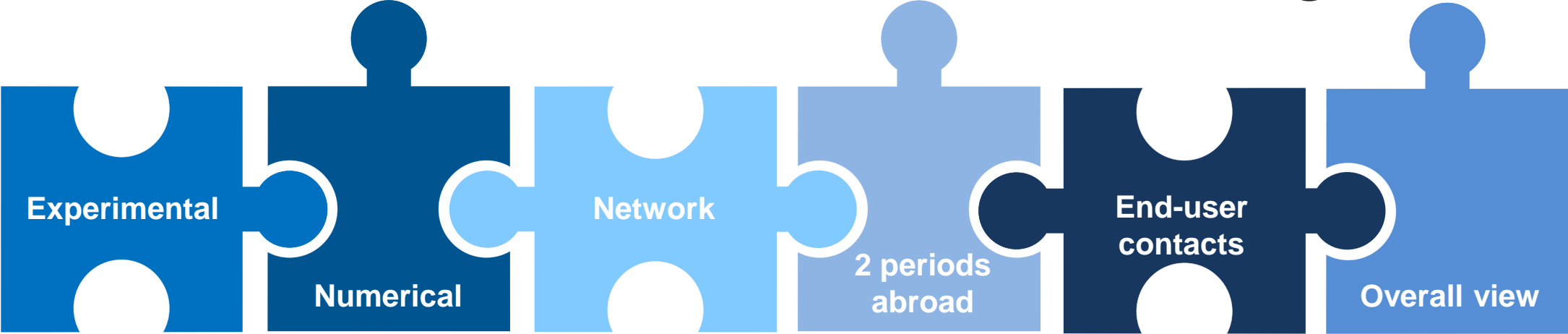
Mechanical testing

Synchrotron imaging

Numerical models



WHERE and how are secondment organized?



MONTHS	1	2-4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25-26	27-29	30	31	32	33	34	35	36	37	38-39	40	41	42	43-47	48				
DC1 (POLIMI)				WP1										ELETTRA	◆	WP1										WP2		TCD	WP2		WP2		◆									
DC2 (ELETTRA)				WP1										◆	WP1										WP3		IMPAN	WP3		WP3		WP3		◆								
DC3 (CNRS)				WP1										◆	WP1										WP4		POLIMI	WP4		WP3		NTNU	WP3		WP3		◆					
DC4 (TUE)				WP1										◆	WP1										WP4		EMPA	WP4		WP4		TUD	WP4		◆	WP4		WP4		◆		
DC5 (POLIMI)				WP2		WP1										WP2		TCD	WP2										WP3		IOG	WP3		◆	WP1		WP1		◆			
DC6 (TCD)				WP2										◆	WP2										WP3		ELETTRA	WP3		WP3		NTNU	WP3		◆	WP3		WP3		◆		
DC7 (NTNU)				WP3										◆	WP3										WP2		IMPAN	WP2		◆	WP3		CNRS	WP3		WP3		WP3		◆		
DC8 (IOG)				WP3										◆	WP3										WP3		TUE	WP3		WP4		TUD	WP4		WP4		WP4		◆			
DC9 (IMPAN)				WP3										WP3		POLIMI	◆	WP3										◆	WP1		EMPA	WP1		WP1		WP1		◆				
DC10 (TUD)				WP4										◆	WP4										WP3		IOG	WP3		WP1		POLIMI	WP1		WP1		WP1		◆	◆		
DC11 (EMPA)				WP4										◆	WP4										WP1		NTNU	WP1		WP1		TUE	WP1		◆	WP4		WP4		◆		

Legend

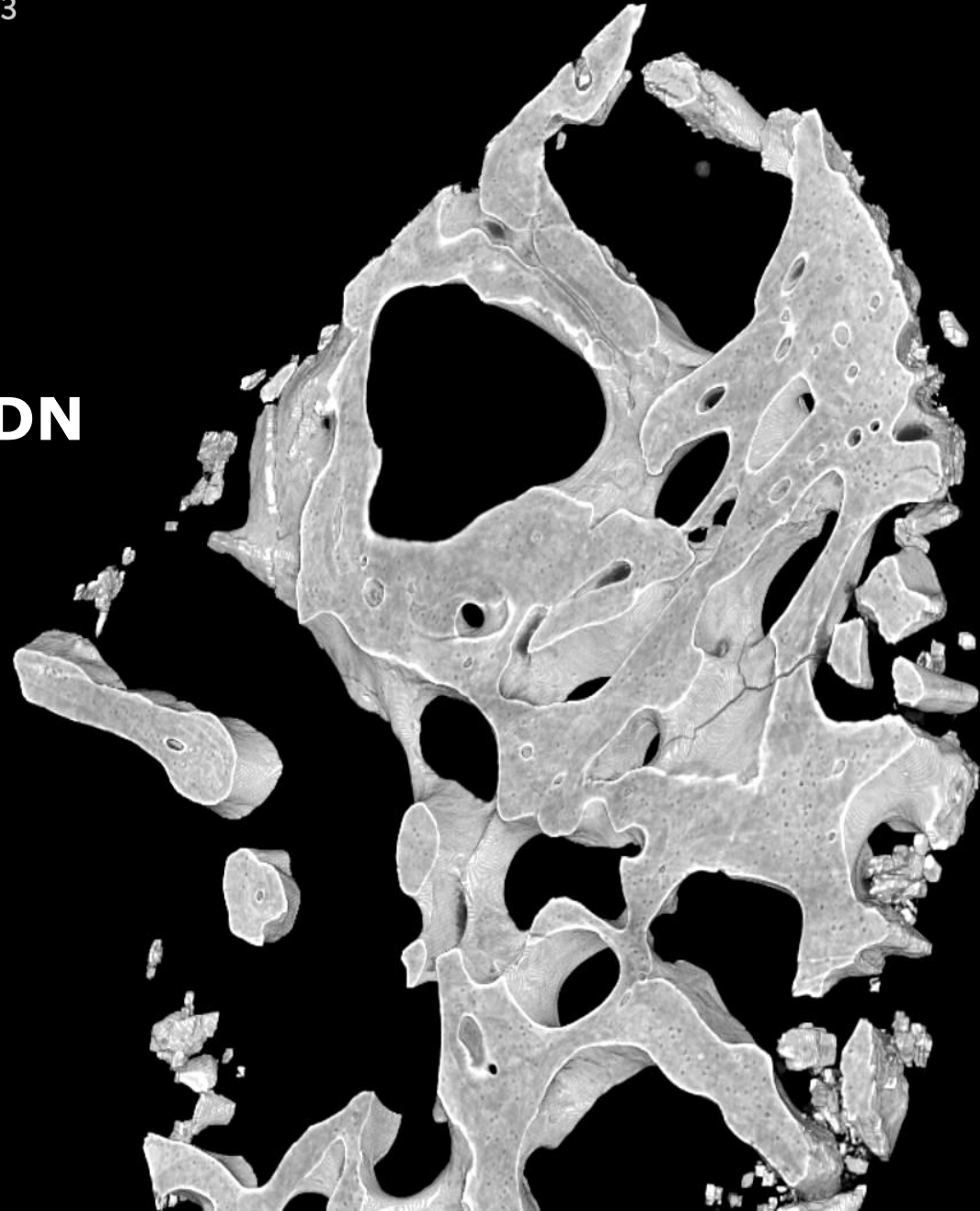
- WP1
- WP2
- WP3
- WP4
- ◆ Deliverable
- M** Milestone



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