HITRI plus
Heavy Ion Therapy Research Integration

WP6: Transnational Access

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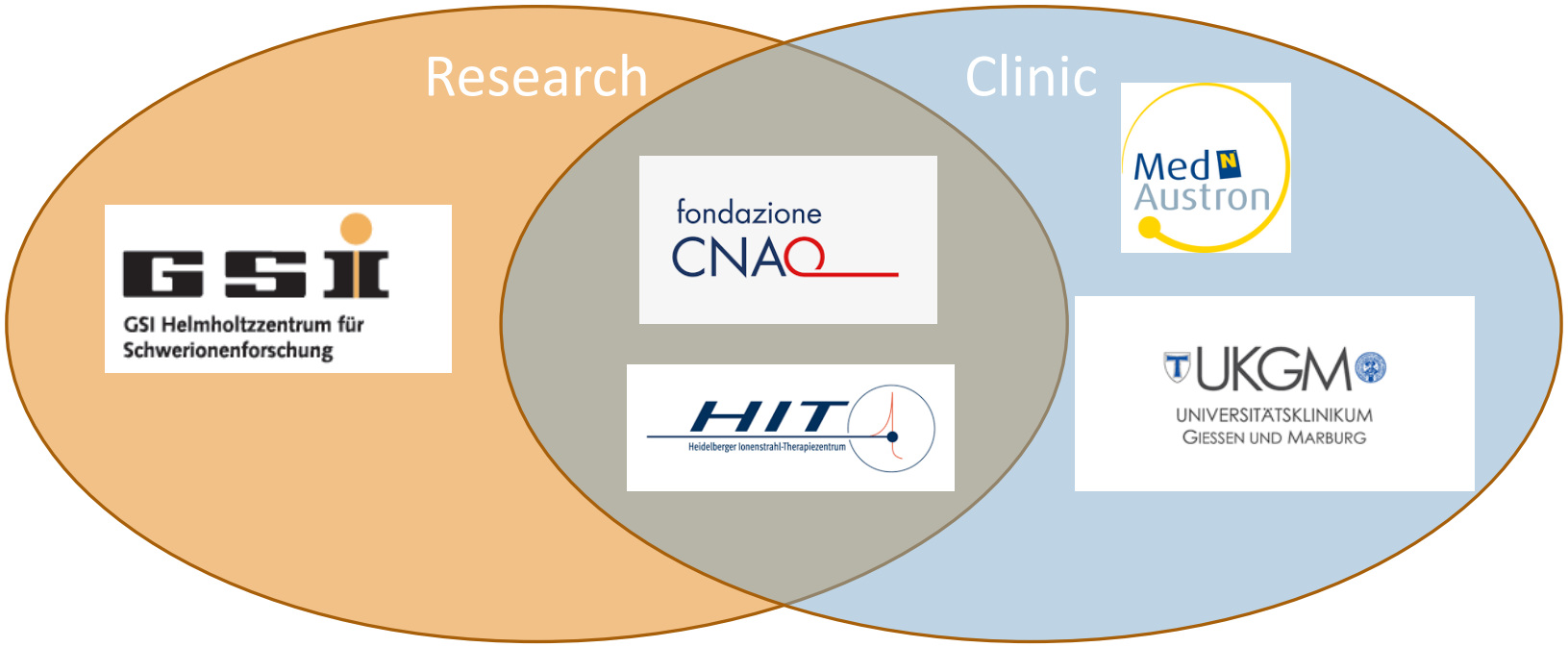
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 101008548

Contributors to TNA



	Res. [h]	Clin. [P]	Total
CNAO	80	12	92
GSI	296	-	296
UKHD/HIT	72	10	82
MEDA	-	12	12
MIT	-	16	16
	448	**50**	**498**

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Research TNA

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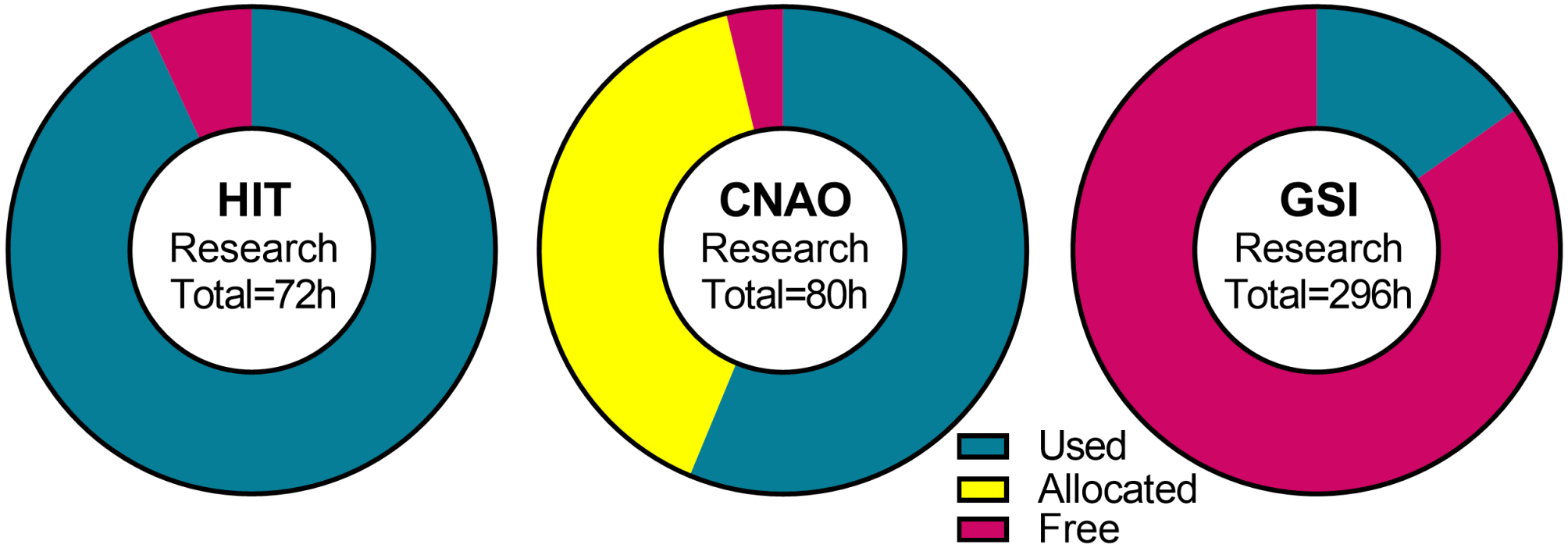
Research beamtime provided by facilities



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Research TNA applications

Applicant	Affiliation	Proposal title	h requested	h used	Host	Period
Marie Vanstalle	Institut Pluridisciplinaire Hubert Curien (IPHC), Strasbourg	Measurements of damages to biomolecules in solution induced by carbon ions and their secondary fragments	24	30,5	CNAO	April 14/15 & May 26/27, 2023
Christophe Badie	UK Health Security Agency	Assessing space like radiation dose exposure and long-term risks in humans by using real-time differential gene expression sequencing analysis	6	8	CNAO	May 13, 2023
Ilaria Rinaldi	MAASTRO	Stopping power ratio measurements of electron density phantom	5	5	HIT	December 20, 2022
Fernando Dominguez	USC Spain	Silver atomic Quantum Clusters of five atoms (Ag5-AQCs), radiosensitizer for heavy-ion particle therapy.	8	6	GSI	February 11th & April 18th, 2024
Aleksandra Wronská	Jagiellonian University in Kraków	SiFi-CC – commissioning of a setup for prompt-gamma imaging	12	16	HIT	January 12/13, 16/17, 2023
Anne Klimpel	TU Dresden	Spectral Fibre Dosimetry for Heavy Ion Radiotherapy	8	7	CNAO	March 6, 2023
Charles-Antoine Collins-Fekete	University College London	Mixed beam image guidance for particle therapy applications	8	4	GSI	December 18/19, 2023
Krishna Prasad Subedi	Nepal	Spot scanning proton arc therapy for head and neck cancer patients	-	-	HIT	declined
Sara Marcatili	CNRS/IN2P3, Grenoble, France	Test of TIARA detector with protons from synchrotron and carbon ions	24		CNAO	upcoming
Armin Durakovic	Cantonal hospital Zenica, Bosnia and Herzegovina	Angular distribution measurements of neutron fields generated with a typical clinical ion beams (proton and carbon) applied to anthropomorphic phantom	16		CNAO	May 10/11, 2024

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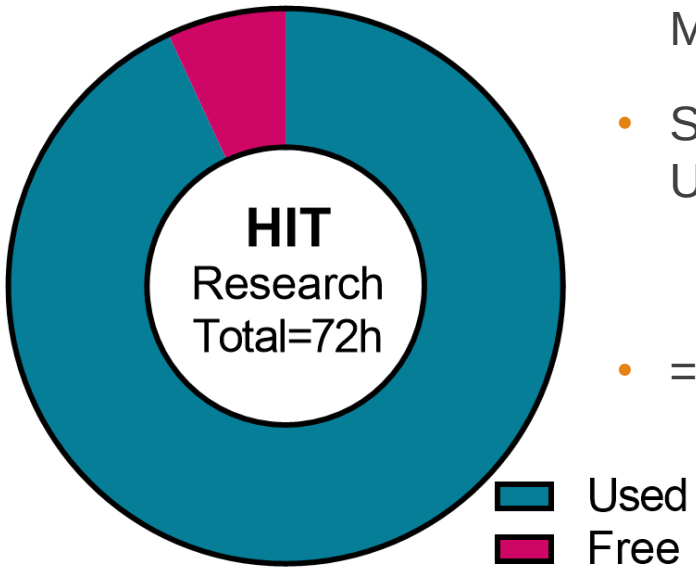
Research access to HIT



- Stopping power ratio measurements of electron density phantom, MAASTRO Maastrich, Rinaldi, December 2022
- SiFi-CC – commissioning of a setup for prompt-gamma imaging, Jagellionian University Cracow, Wronská, January 2023
- => Obligation has almost been fulfilled.

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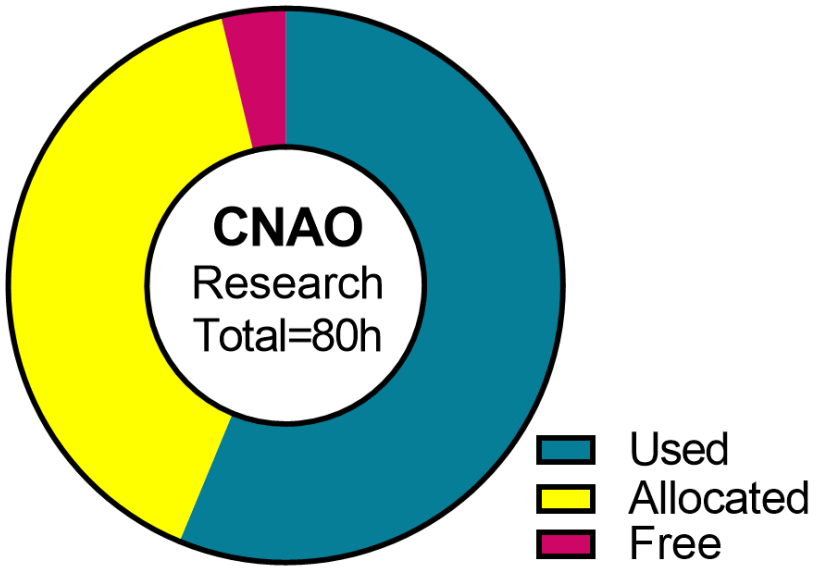
Research access to CNAO



- Measurements of damages to biomolecules in solution induced by carbon ions and their secondary fragments, IPHC Strasbourg, Vanstalle, April-May 2023
- Assessing space like radiation dose exposure and long-term risks in humans by using real-time differential gene expression sequencing analysis, UK Health Security Agency, Badie, May 2023
- Spectral Fibre Dosimetry for Heavy Ion Radiotherapy, TU Dresden, Klimpel, March 2023
- Test of TIARA detector with protons from synchrotron and carbon ions, CNRS Grenoble, Marcatili
- Angular distribution measurements of neutron fields generated with a typical clinical ion beams (proton and carbon) applied to anthropomorphic phantom, Cantonal hospital Zenica, Durakovic, May 2024

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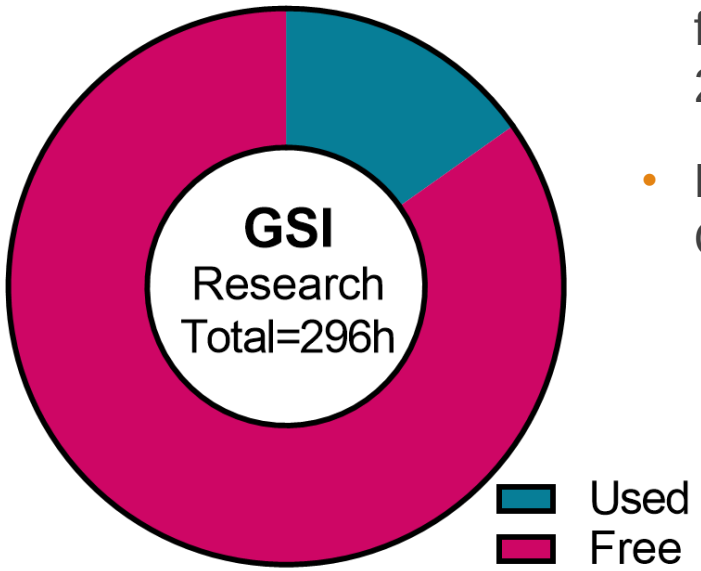
Research access to GSI



- Silver atomic Quantum Clusters of five atoms (Ag5-AQCs), radiosensitizer for heavy-ion particle therapy. USC, Domínguez, February 11th & April 18th, 2024
- Mixed beam image guidance for particle therapy applications, University College London, Collins-Fekete, February 2024

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Beamtime situation at GSI

- High energy prizes led to complete cancelling of beamtime in 2023.
- Ongoing construction of FAIR centre drains available means and interferes with accelerator availability.
- => shortage in beam time; only few days / year
- reassignment of TNA hours to HIT and CNAO is being discussed

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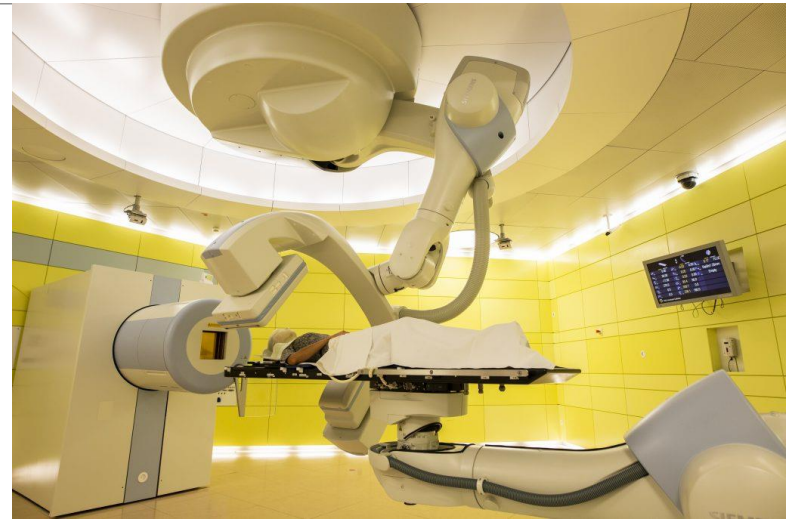
Specific TA to clinical activities



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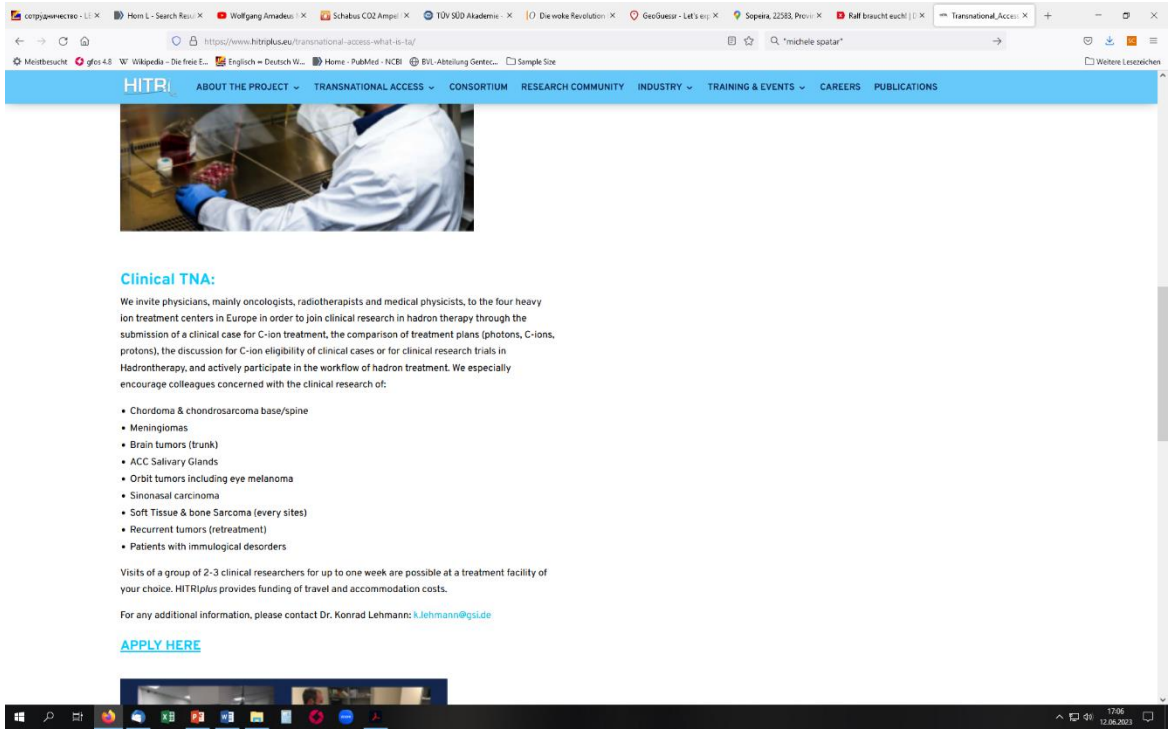
New modality of clinical research TNA

- Following the suggestions of the advisory committee, as of February 2023:
- Call for applications by radiotherapists / oncologists
- Visits to radiotherapy facilities by teams of physicians
- Getting acquainted with treatment planning, work flow, potential of hadron therapy
- No patient required, only submission of clinical case for discussion



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Dissemination

- New flyer distributed at conferences
- Active recruitment by staff physicians through personal contact
- Call published on HITRI+ website

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Clinical research TNA applications

Applicant	Affiliation	Country	Host	Approved	# visitors
Ioannis Boukovinas	Thessaloniki	Greece		no	patient
Rogelio Robaina Escobar	AEPROT	Spain	CNAO	yes	1
Erika Korobeinikova	Hospital of Lithuanian University of Health Sciences	Lithuania	CNAO	yes	3
Renata Zahu	Amethyst Radiotherapy	Romania	CNAO	yes	2
Maria Topalidou	Papageorgiou General Hospital	Greece	CNAO	yes	3
Ghizela Ana Maria Salagean	University of Babes Bolyai Cluj Napoca	Romania	CNAO	yes	2
Juliette Thariat	Centre Baclesse	France	CNAO	yes	1
Zsolt Cselik	Veszprém County Hospital	Hungary	MedAustron	yes	1
Alexandra Kolenova	National Institute of Children's Diseases	Slovakia	MedAustron	yes	1
Ana Perpar	Institute of Oncology Ljubljana	Slovenia	MedAustron	yes	2
Katalin Hideghety	University Szeged, Department Oncotherapy	Hungary	MedAustron	yes	1
Daniel Koffler	Mayo Clinic Florida	USA	MedAustron	yes	1
Roy Holland	Rambam Health Care Campus	Israel	MedAustron	yes	2
Remi Nout	Erasmus MC, University Medical Center Rotterdam	Netherlands	CNAO	yes	3
Linh Tran	Wollongong University	Australia	MedAustron	yes	1

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Countries of origin for clinical research TNA

- 14 applications from 12 different countries
- Notable focal point on SEE:
- Slovakia
- Hungary
- Slovenia
- Romania
- Greece
- (Lithuania)

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Summary

- Research TNA:
  - Applications reflect a very multifaceted research field.
  - CNAO, HIT: Demand exceeds offer. Pledged hours have almost been used up.
  - GSI: Offer and demand exceed availability.
  - => Redistribution of hours is being discussed.
- Clinical research TNA:
  - New modality of informative visits has met with great success.
  - 14 applications have been accepted during the reporting period.
  - Personal commitment and communication by local staff plays a central role.
- General:
  - TNA is a successful tool for research promotion, networking and integration of the field.
  - Constant reflections and adaptations are necessary.

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THANK YOU VERY MUCH!

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