



Courtesy translation of D.R. n. 075/2022

For more details on the selection process, please refer to the Italian version of

D.R. n. 075/2022 available at <http://www.hunimed.eu/it/lavora-con-noi/>

SELECTION PROCEDURE FOR A RESEARCH FELLOWSHIP IN COMPLIANCE WITH ART. 22 OF LAW 240/2010

Research Program Title	Image Mining and ctDNA to Improve Risk Stratification and Outcome Prediction in NSCLC applying Artificial Intelligence
Tutor	Prof. Arturo CHITI
Scientific Area	05 – Biological Sciences
Gross amount of the fellowship	23.000 Euro
Duration of the fellowship	12 months with possibility to extend
Objectives of the research	<p>Lung cancer is the leading cause of cancer-related death in Europe. Pathological staging is the gold standard, but it can be influenced by neo-adjuvant treatment and number of sampled lymph nodes; it is not feasible in advanced stages and in patients with high-risk comorbidities. Therefore, patients with tumors of the same stage can experience variations in the incidence of recurrence and survival, since suboptimal staging leads to inappropriate treatment that result in poorer outcomes. It is still undetermined what are the tumor characteristics that can accurately assess tumor burden and predict patient outcome.</p> <p>Our hypothesis is that image-derived and genetic characteristics are consistent with disease stage and patient outcome. Combining through artificial intelligence techniques data coming from imaging and circulating cell-free tumor DNA (ctDNA) sequencing can provide accurate staging and predict outcome. Our project will be hence developed by pursuing the following two aims:</p>

	<p>1. Assess the role of baseline image mining, ctDNA data and their combination in patient staging and risk stratification .</p> <p>2. Assess the role of baseline and follow-up image mining, ctDNA data, and their combination in predicting disease relapse and progression.</p>
Activities to be carried out	<p>1. Extraction and QC (by qPCR and dPCR) of nucleic acids from blood/plasma.</p> <p>2. Library preparation for whole-exome and targeted resequencing.</p> <p>3. NGS data analysis.</p> <p>4. Validation of mutations through Sanger sequencing.</p> <p>5. Statistical analyses.</p>
Work place	PIEVE EMANUELE - Milan
Mandatory requirements	In order to be considered for the post candidates must hold a MSc in Biotechnology, Biological Science or Medicine and Surgery or related disciplines; scientific and professional CV suitable to the carrying out of the research activities outlines above
Selection process	<p>Application for admissions must be submitted at the following link:</p> <p>https://pica.cineca.it/humanitas</p> <p>No hard copy of the application must be sent by post.</p> <p>At first access, applicants need to register by clicking on “Register” and completing the requested data.</p> <p>If applicants already have LOGINMIUR credentials, they do not need to register again. They must access with their LOGINMIUR username and password in the relevant field LOGINMIUR.</p> <p>Applicants must enter all data necessary to produce the application and attach the required documents in PDF format.</p>
Selection criteria	Selection criteria are predetermined by the Selection Committee. As part of the selection process, the Committee

	<p>will evaluate the curriculum, titles and publications presented by the candidate and will consider, in particular:</p> <ul style="list-style-type: none">- excellent knowledge in the field of molecular biology techniques (nucleic acid extraction, molecular cloning, PCR, RT-PCR, qPCR, dPCR, Sanger sequencing);- experience in the analysis of NGS data (whole-exome sequencing mutational screening, targeted resequencing).- fluent English (written and spoken) is required.
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FURTHER INFORMATION:

In the event of any conflict between Job Opening text and Italian D.R. text, the Italian version will prevail.

For more details on the selection process please refer to the **D.R. n. 075/2022** (<http://www.hunimed.eu/it/lavora-con-noi/>) or send an inquiry to ufficiodocenti@hunimed.eu or telephone +39 02.8224.5642/5421.