BRACCO FELLOWSHIPS
EDUCATION IN RESEARCH
ENROLMENT FORM

Name of Institution Department of Clinical and Experimental Medicine, University of School of Medicine, Foggia (Italy). / Radiology Unit "Dimiccoli" Teaching Hospital, Barletta, Italy.
City and Country of Institution Foggia, Italy.

RESEARCH GROUP

Brief description of the research group and of its mission:

Chief:
Prof. Giuseppe Guglielmi (Full Professor; scientific and disciplinary sector - MED/36 - Diagnostic Imaging and Radiotherapy).
Prof. Guglielmi's research focuses on Molecular Imaging, Digital Radiology Diagnostics, Computed Tomography, Magnetic Resonance, Bone Densitometry, Radiomics, and Radiogenomics.
The study of bone metabolic diseases, rare diseases, geriatric radiology was the focus of his activity in the field of Musculoskeletal Radiology, with particular attention on integrated high-resolution imaging (DXA, US, CT and MRI) for the evaluation of the trabecular bone network and the analysis of the body composition. Forensic Radiology represents another subject of interest, in collaboration with forensic doctors on the Virtopsy project (virtual autopsy) and on the following Virtangio project (virtual angiography) which made it possible for the University of Foggia to be included as the only Italian branch of the Post-Mortem Angiography project in Europe. Finally, since 2003 the position of Radiology and Radiographics RSNA Editorial Fellow represents a further field of interest in the editorial activity (medical writing). This position enables one to engage in significant editorial activity as Editor-in-Chief, Deputy Editor, and Member of the Advisory Board of numerous national and international Radiology journals. Numerous scientific publications, presentations at scientific conferences with both national and worldwide relevance, book chapters and educational initiatives have resulted from these challenges.

TITLE OF PROPOSED RESEARCH PROJECT

From orthopantomographies to Diagnosis of Osteoporosis through AI and Radiomics

OBJECTIVES

- Quantitative assessment of bone mineral density (BMD) deficiency in some elder patients under OPT (diagnosis of osteoporosis by using AI);
- Defined that included all the bone tissue positioned apically to the mandibular canal and distally to the mental foramen, including the angle of the mandible and part of the ascending branch up to the mandibular foramen.
- Preventing bone loss at an earlier time point, improving the overall survival and quality of life;

APPLICANT'S DUTIES

- Diagnostic investigation with OPT through AI and Radiomics;
- Patients recruiting according to the enrolment criteria (random patients from OPT);
- Data processing, data analyses and management in collaboration University of Foggia and Parma;
- Attending regular research meetings and journal clubs. Getting familiar with the current literature;
- Preparing national and international scientific publications.

APPLICANT'S BENEFITS

- The fellowship will lead to a wider understanding of clinical research and research methodology and will lead to learn to acquire and manage data, to review images or procedures, to search for biases, to develop skills in tools and post-processing and to collaborate with statisticians/clinicians/clinical scientists;
- Collaboration in writing articles and participation on scientific outcomes of preventing bone loss and fracture risk in patients with a diagnosis of osteoporosis;
- Drafting oral/written presentations, participation on international Congresses and publications with chance of discussing scientific presentations;

Project Leader: Prof. Giuseppe Guglielmi
Members: Testini V., Guerra F., Mannatrizio D., D'Arma G., Fascia G., Gifuni R., Masciavé M., Masino F., Montatore M., Muscatella G., Sciacqua A., Iacobellis G., Pizzileo S., Pizzolorusso F., De Lorenzis S.