

## GIORGIO GRANI Curriculum Vitae

Rome, 27/09/2021

### Part I – General Information

Full Name	Giorgio GRANI
Spoken Languages	Italian, English

### Part II – Education

Type	Year	Institution	Notes (Degree, Experience,...)
University graduation	2009	Sapienza University of Rome	Medical Degree (Laurea Specialistica in Medicina e Chirurgia), <i>cum laude</i>
Specialty	2015	Sapienza University of Rome	Endocrinology and Metabolic Diseases (Diploma di specializzazione in Endocrinologia e Malattie del Metabolismo), <i>cum laude</i>
PhD	2019	Sapienza University of Rome	PhD in Biotechnologies in Clinical Medicine (Dottorato di ricerca in Tecnologie Biomediche in Medicina Clinica, Ciclo XXXI), <i>cum laude</i>
Licensure	2009		Medical license (Abilitazione all'esercizio della professione di medico-chirurgo)
Other training	2019	Sapienza University of Rome	Training course Teaching techniques in Medicine (Corso di Alta Formazione in Pedagogia e Didattica Medica)

### Part III – Appointments

#### IIIA – Academic Appointments

Start	End	Institution	Position
March 2019	March 2022	Sapienza University of Rome	<b>Assistant professor of Internal Medicine (RTD di tipo A, Settore scientifico-disciplinare MED/09)</b>
May 2019	April 2021	Sapienza University of Rome, Medical & Dental School (Facoltà di Medicina ed Odontoiatria)	Member of the working group for scientific communication training (Formazione alla Divulgazione Scientifica)
November 2020	November 2029	MIUR	<b>National Scientific Qualification for Associate Professor (Abilitazione Scientifica Nazionale</b> alle funzioni di Professore universitario di seconda fascia nel settore concorsuale 06/B1 - Medicina interna; bando D.D.

November 2019	<i>ongoing</i>	STITCH, Sapienza information-based Technology Innovation Center for Health (Centro di ricerca interdipartimentale)	2175/2018) Steering Committee Member (Consiglio Tecnico Scientifico)
April 2021	April 2021	Università Cattolica del Sacro Cuore, Roma	Evaluation and Ph.D.-granting Committee (Commissione Giudicatrice per il conferimento del Titolo di Dottore di Ricerca in Scienze della Nutrizione, del Metabolismo, dell'invecchiamento e delle Patologie di Genere, nominato con decreto rettorale n. 7347 del 06/04/2021)
April 2021	<i>ongoing</i>	Sapienza University of Rome, Medical & Dental School (Facoltà di Medicina ed Odontoiatria)	Member of the working group for Public Engagement e Divulgazione Scientifica

### IIIB – Clinical Appointments

Start	End	Institution	Position
April 2021	<i>ongoing</i>	AOU Policlinico Umberto I, Rome	Attending Physician of Internal Medicine (Dirigente Medico di Medicina Interna presso i DAI di Emergenza e Accettazione, Anestesia e Aree Critiche e di Medicina Interna e Specialità Mediche)

### IIIC – Other Appointments

Start	End	Institution	Position
2020	2023	Springer Nature	Associate Editor of <i>Endocrine</i>
September 2021	<i>Ongoing</i>	BMC (BioMed Central) Springer Nature	Member of the Editorial Board of <i>Thyroid Research</i>
January 2022	-	American Thyroid Association	Member of the Editorial Board of <i>Clinical Thyroidology</i>
2018	<i>Ongoing</i>	European Thyroid Association	Member of ETA Website and Social Media Board
10/03/2017	31/03/2017	Società Italiana di Endocrinologia	Member of the Abstract evaluation committee (39° Congresso Nazionale SIE)
2019	<i>Ongoing</i>	Italian Thyroid Cancer Observatory Foundation	Board Member (Membro del Consiglio Direttivo ITCO Foundation con il ruolo di Segretario e Tesoriere)
2019	<i>Ongoing</i>	International Thyroid Nodule Ultrasound Working Group (ITNUWG)	Member

2021	2021	Endocrine Society	Member of the Abstract evaluation committee (International Meeting <i>ENDO2021</i> )
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IIID – Coordination or participation to research groups

### **Coordination**

Start	End	Partners	Project
January 2018	ongoing	Department of Nuclear Medicine and Endocrine Oncology, Gustave Roussy and University Paris-Saclay, Villejuif, Francia	Optimizing the follow-up of differentiated thyroid cancer patients (J Clin Endocrinol Metab. 2019;104(11):4981-4989. doi: 10.1210/jc.2019-00962; Nat Rev Endocrinol. 2018 Sep;14(9):538-551. doi: 10.1038/s41574-018-0068-3
April 2016	11/08/2017	Unità di Endocrinologia, Ospedale di Tinchi-Pisticci, Matera, Dipartimento di Scienze della Salute, Università di Catanzaro Magna Graecia, Unità Operativa Semplice Dipartimentale di Endocrinologia, Ospedale di Bentivoglio, Bologna, Dipartimento di Medicina, Università di Perugia, Unità Operativa di Endocrinologia, IRCSS “Casa Sollievo della Sofferenza”, San Giovanni Rotondo, Dipartimento di Scienze Mediche e Pediatriche, Università di Catania, Unità Operativa di Endocrinologia, Azienda Ospedaliera Ospedali Riuniti Villa Sofia-Cervello, Palermo, Department of Internal Medicine, Institut Jules Bordet Comprehensive Cancer Center, Brussels, Belgium, and Division of Endocrinology, Diabetes, and Metabolism, The Johns Hopkins University School of Medicine, Baltimore, Maryland, USA	Temporal Changes in Thyroid Nodule Volume (Thyroid. 2017;27(11):1378-1384. doi: 10.1089/thy.2017.0201)
1/04/2017	17/04/2018	Dipartimento di Scienze della Salute, Università di Catanzaro Magna Graecia	Association between obesity and aggressiveness of differentiated thyroid cancer (J Endocrinol Invest. 2019 Jan;42(1):85-90. doi: 10.1007/s40618-018-0889-x)

01/11/2015	ongoing	<p><i>Sponsor:</i> University of Roma La Sapienza</p> <p><i>Collaborators:</i> Italian Thyroid Cancer Observatory (ITCO) Foundation - Catholic University of the Sacred Heart; Participants; more than 40 Italian clinical sites</p>	<p>Multicenter, Prospective, Observational Study of Clinical Outcomes of Thyroid Cancer - ClinicalTrials.gov ID: NCT04031339</p>
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### **Participation**

Start	End	Partners	Project
08/03/2014	19/07/2016	Sezione di Endocrinologia, Diabete e Metabolismo, Dipartimento di Medicina, Università di Verona, Unità di Endocrinologia e Diabetologia, Dipartimento di Medicina dei Sistemi, Università di Roma Tor Vergata	Italian multicenter study: Severe hypoglycemia in patients with known diabetes requiring emergency department care (J Clin Transl Endocrinol. 2016;5:46-52. doi:10.1016/j.jcte.2016.08.004)
01/05/2015	21/02/2016	Department of Internal Medicine, Institut Jules Bordet Comprehensive Cancer Center, Bruxelles, Belgium	Risk Stratification of Neck Lesions Detected Sonographically During the Follow-Up of Differentiated Thyroid Cancer (J Clin Endocrinol Metab. 2016 Aug;101(8):3036-44. doi: 10.1210/jc.2016-1440)
01/06/2015	10/10/2017	Dipartimento di Area Medica, Università di Udine, Dipartimento di Scienze della Salute, Università "Magna Graecia" di Catanzaro	Oncogenic effect of a synonymous RET substitution (PLoS Genet. 2018 Oct 15;14(10):e1007678. doi: 10.1371/journal.pgen.1007678)
01/06/2015	16/12/2019	Università di Bologna	Risk stratification of papillary microcarcinomas: the role of position within the thyroid gland (Cancers (Basel). 2020 Jan 19;12(1):246. doi: 10.3390/cancers12010246)
01/10/2015	09/12/2016	Dipartimento di Oncologia Sperimentale dell'Istituto Mediterraneo di Oncologia, Viagrande, Dip. di Medicina Clinica e Sperimentale e di Istopatologia dell'Università di Pisa, Dipartimento di Scienze della Salute Università 'Magna Graecia' di Catanzaro	micro-RNA based molecular classification of papillary thyroid cancer (Int J Oncol. 2017 May;50(5):1767-1777. doi: 10.3892/ijo.2017.3960)
01/10/2015	25/10/2016	Dipartimento di Scienze	Thyroid-specific circulating micro-RNA

		della Salute, Università di Catanzaro e U.O. Chirurgia Endocrina e Metabolica, Policlinico "A. Gemelli", Università Cattolica del Sacro Cuore	(J of the Endocrine Society. 2017; 1 (1): 3-13. doi: 10.1210/js.2016-1032)
01/11/2015	ongoing	Università Cattolica del Sacro Cuore, dipartimento di Area Medica, Università di Udine e Dipartimento di Scienze della Salute, Università "Magna Graecia" di Catanzaro	Development of a double component molecular testing approach for thyroid nodules (Endocrine. 2020 doi: 10.1007/s12020-020-02271-y; Endocrine 2020 doi 10.1007/s12020-020-02372-8)
01/02/2016	08/03/2018	Università di Ferrara, AUSL Bologna-Ospedale Bentivoglio, Bologna, Dipartimento di Scienze Mediche, Università di Torino	Thyroid nodule recurrence following lobo-isthmectomy: incidence, patient's characteristics, and risk factors (J Endocrinol Invest. 2018 Dec;41(12):1469-1475. doi: 10.1007/s40618-018-0946-5)
03/03/2017	22/05/2019	IRCCS Istituto Nazionale Tumori, Milano	Real-world efficacy and safety of lenvatinib: data from a compassionate use in Italy (Eur J Cancer. 2019 Sep;118:35-40. doi: 10.1016/j.ejca.2019.05.031)
01/11/2017	24/01/2019	Clinical University-Hospital, Latvia, Caritas-Krankenhaus, Bad Mergentheim, Germany	Prospective Evaluation of Semiquantitative Strain Ratio and Quantitative 2D Ultrasound Shear Wave Elastography (Ultraschall Med. 2019 Aug;40(4):495- 503. doi: 10.1055/a-0853-1821)
01/01/2018	ongoing	Sezione di Endocrinologia, Diabete e Metabolismo, Dipartimento di Medicina, Università di Verona	Association of Nonalcoholic Fatty Liver Disease (NAFLD) with other medical conditions (Dig Dis Sci. 2018 Jul;63(7):1970-1976; Curr Pharm Des. 2020;26(10):1045-1061. doi: 10.2174/1381612825666191026113119)
01/04/2018	04/04/2019	Ente Ospedaliero Cantonale, Bellinzona, Switzerland, Campus Bio Medico, Roma, A.O. Ordine Mauriziano Torino, Ospedale Galliera, Genova, Università di Messina, IRCCS-Regina Elena, Roma	Prognosis of patients with differentiated thyroid carcinomas having a preoperative cytological report of indeterminate (Endocrine. 2019;66(3):557-562. doi: 10.1007/s12020-019-02013-9)
01/01/2019	ongoing	Ente Ospedaliero Cantonale, Bellinzona, Switzerland	Optimization of sonographic risk-stratification approaches (Cancer Cytopathol. 2020 Apr;128(4):250-259. doi: 10.1002/cncy.22235; Radiol Med. 2020 Apr;125(4):406-415. doi:

**Part IV – Teaching experience***IVA – Academic Teaching*

Year	Institution	Lecture/Course
2020-21	Sapienza University of Rome (CL Tecniche della Riabilitazione Psichiatrica)	Internal Medicine (MEDICINA INTERNA nell'ambito del Corso Integrato di Riabilitazione in Ambito Medico)
2020-21	Dental School, Sapienza University of Rome (CLM Odontoiatria e Protesi Dentaria)	Internal Medicine (MEDICINA INTERNA II nell'ambito del Corso Integrato di Scienze Mediche)
2020-21	Sapienza University of Rome	Tutor for the Medical rotation of the medical graduates (Tirocinio Pratico Valutativo per Esame di Stato - TPVES - Area Medica)
2019-20	Dental School, Sapienza University of Rome (CLM Odontoiatria e Protesi Dentaria)	Internal Medicine (MEDICINA INTERNA II nell'ambito del Corso Integrato di Scienze Mediche)
2019-20	Medicine and surgery, Sapienza University of Rome (Medicina e chirurgia "F")	Clinical Scientific Methods
XXXV cycle	Sapienza University of Rome	Member of teachers' board of PhD Program in Innovative Technologies in Clinical Medicine (Membro del collegio dei docenti del dottorato in Tecnologie Biomediche Innovative in Medicina Clinica)
XXXVI cycle	Sapienza University of Rome	Member of teachers' board of PhD Program in Innovative Technologies in Clinical Medicine (Membro del collegio dei docenti del dottorato in Tecnologie Biomediche Innovative in Medicina Clinica)
XXXVII cycle	Sapienza University of Rome	Member of teachers' board of PhD Program in Innovative Technologies in Clinical Medicine (Membro del collegio dei docenti del dottorato in Tecnologie Biomediche Innovative in Medicina Clinica)

*Part IVB – Invited Speaker at Meetings and Congresses*

18/06/2016	Invited speaker at the Workshop “Variante follicolare incapsulata del carcinoma papillifero della tiroide: tumore benigno o tumore maligno?” (Roma, Sapienza Università di Roma; Italian Thyroid Cancer Observatory). Talk: “ <i>Nomenclature Revision for Encapsulated Follicular Variant of Papillary Thyroid Carcinoma: A Paradigm Shift to Reduce Overtreatment of Indolent Tumors</i> ”
19/11/2016	Invited talk and Scientific Committee Member at the Forum tumore della tiroide: nuove frontiere della diagnosi e terapia (ITCO Foundation, Sapienza Università di Roma, Fondazione Umberto Di Mario Onlus, endorsed by Società Italiana di Ultrasonologia in Medicina e Biologia, Società Italiana di Endocrinologia,

	Associazione Medici Endocrinologi, Associazione Italiana della Tiroide. Talk: <i>"Scenari clinici - Presentazione di casi clinici"</i>
21/06/2017	Invited speaker at the Meeting "2017 Thyroid Carcinoma". Satellite Event to the Congresso Nazionale 2017 della Società Italiana di Endocrinologia - ENDO 2.0, Roma. Talk: <i>"Diagnosi e monitoraggio del nodulo tiroideo: scenari clinici"</i> .
21/04/2018	Invited speaker at the "2° Forum noduli della tiroide - nuove frontiere nella diagnosi e terapia" (Sapienza Università di Roma – ITCO Foundation). Talk: <i>"Stratificazione ecografica del rischio di malignità e gestione dei noduli tiroidei: scenari clinici"</i>
15-16/06/2018	Invited speaker at the "8th Thyroid Cancer Forum: Frontiers in Diagnosis and Management" (ITCO Foundation, Sapienza Università di Roma, Università Cattolica del Sacro Cuore, Università degli Studi di Perugia, Perugia). Talk: <i>"Follow-up del carcinoma differenziato della tiroide, Context and paradigms"</i>
29/09/2018	Invited talk at the 6th Thyroid UptoDate – Linee guida e pratica clinica (Associazione Medici Endocrinologi, Roma). Talk for Marco Attard Prize: <i>"Temporal Changes in Thyroid Nodule Volume: Lack of Effect on Paranodular Thyroid Tissue Volume"</i>
06/04/2019	Invited talk and Scientific Committee Member at the 3° Forum Noduli della Tiroide: Nuove frontiere nella diagnosi e terapia (ITCO Foundation, Fondazione Umberto di Mario ONLUS, endorsed by Società Italiana di Endocrinologia and Associazione Medici Endocrinologi). Talk: <i>"Dalla corretta refertazione agli ausili tecnologici: un'app ci può aiutare?"</i>
12/04/2019	Invited talk at the 1st Italian Thyroid Preceptorship–The cutting edge stage in thyroid research (endorsed by Associazione Italiana della Tiroide), Roma Talk: <i>"Thyroid nodule - Machine Learning"</i>
22/06/2019	Invited talk at the WCTC 3.5 – World Congress of Thyroid Cancer, Rome (endorsed by 25 scientific societies, including Società Italiana di Chirurgia and Società Italiana di Endocrinologia). Invited Faculty, Talk: <i>"Advanced US Course - Nodules Risk Assessment Strategies"</i>
07/09/2019	Session Chairman at the 42nd Annual Meeting of the European Thyroid Association, Budapest, Hungary - Chair Poster Session: P1-05 Nodules 1
18/10/2019	Invited talk at the Corso di aggiornamento Giornate Scientifiche dell' Ospedale del Mare: Ambiente e Malattie endocrino-metaboliche, organized by ASL Napoli 1 Centro, endorsed by Federazione delle Associazioni dei Dirigenti Ospedalieri Internisti, Associazione Medici Endocrinologi. Talk: <i>"Stato dell'arte nel trattamento delle neoplasie tiroidee"</i>
07/11/2019	Invited talk at the 18° Congresso Nazionale Associazione Medici Endocrinologi – Joint Meeting with ACE Italian Chapter, Roma. Symposium: Citologia tiroidea indeterminata: come uscire dal labirinto? Talk: <i>"Real clinical practice"</i>
19/11/2019	Invited talk at the Congresso Nazionale Società Italiana di Ultrasonologia in Medicina e Biologia, Rome – Talk for Young Investigator Prize <i>"Sonographically estimated risks of malignancy for thyroid nodules computed with five standard classification systems: changes over time and their relation to malignancy"</i>
03/10/2020	Invited talk and Scientific Committee Member at the Virtual Meeting 4° Forum Noduli della Tiroide: Nuove frontiere nella diagnosi e terapia, organized by ITCO Foundation. Lecture: <i>"Ruolo dei test molecolari nella classificazione del rischio di malignità dei noduli tiroidei"</i>
17/04/2021	Discussant and Scientific Committee Member at Webinar 5° Forum Noduli della Tiroide: Nuove frontiere nella diagnosi e terapia, organized by ITCO Foundation
28/05/2021	Invited talk at the Webinar "Novità nella pratica clinica della patologia tiroidea"

	nell'era del COVID" promoted by AIT – Associazione Italiana Tiroide. Talk: “ <i>Sorveglianza attiva del nodulo tiroideo benigno e maligno</i> ”
18/06/2021	Invited talk at the Webinar “Gestione postoperatoria del carcinoma midollare della tiroide in persistenza di malattia”, organized by ITCO Foundation. Session: “ <i>Scenari clinici</i> ”.
02/07/2021	Invited talk at the CUEM 2021 (Clinical Update in Endocrinologia e Metabolismo). Talk: “ <i>I nuovi farmaci per il carcinoma tiroideo</i> ”.
15/07/2021	Invited talk at the Congresso Nazionale Società Italiana di Endocrinologia (SIE) 2021. Talk: “ <i>MEET THE EXPERT - Gestione multi-integrata della terapia sistemica con mTKI del carcinoma differenziato della tiroide – Caso clinico</i> ”
23/07/2021	Invited talk at the Thyroid Head and Neck Cancer Foundation (THANC) Virtual Journal Club “ <i>Selective Use of Radioactive Iodine Therapy for Papillary Thyroid Cancers with Low or Lower-Intermediate Recurrence Risk</i> ”
06/09/2021	Invited talk at the 43 <sup>rd</sup> Annual Meeting of the European Thyroid Association (online). Session: “Research Grant 2018 & 2019 Winner Presentations”. Talk: “ <i>A Knowledge-Driven Machine Learning Approach for Thyroid Nodule Classification</i> ”

## Part V - Society memberships, Awards and Honors

### *Awards and Honors*

Year	Title
2009	Borsa di Studio Fondazione Cesare Serono in Ginecologia e Medicina della Riproduzione
2010	Premio Tesi Maccaroni
2012	Bando Giovani Soci SIUMB (Società Italiana di Ultrasonologia in Medicina e Biologia)
2012	European Thyroid Association Travel Grant
2013	European Society of Endocrinology Travel Grant
2014	European Thyroid Association Travel Award Grant
2014	Bando Giovani Soci SIUMB (Società Italiana di Ultrasonologia in Medicina e Biologia)
2016	Premio Poster AIT (Associazione Italiana della Tiroide)
2017	European Thyroid Association Travel Award Grant
2018	American Thyroid Association Trainee Grant
2018	Premio Marco Attard – Italian Thyroid Cancer Observatory Foundation – AME Onlus
2019	Premio Biagio Agnes Check-up Salute Italia – Fondazione Biagio Agnes
2019	American Thyroid Association Trainee Grant
2019	Premio SIUMB (Società Italiana di Ultrasonologia in Medicina e Biologia)
2020	Premio Gaetano Salvatore – Cenacolo della Cultura e delle Scienze

### *Society memberships*

2010	<b>AACE</b> – American Association of Clinical Endocrinologists – Member
2010	<b>AME</b> – Associazione Medici Endocrinologi – Membro Ordinario
2010	<b>ATA</b> – American Thyroid Association – Associate Member
2020	<b>ATA</b> – American Thyroid Association – Corresponding Member



2010	<b>ESE</b> – European Society of Endocrinology – Member
2021	<b>ESE</b> – European Society of Endocrinology – Clinician Scientist Full Member
2012	<b>ETA</b> – European Thyroid Association – Junior member
2020	<b>ETA</b> – European Thyroid Association – Member
2011	<b>SIE</b> – Società Italiana di Endocrinologia – Socio
2012	<b>SIUMB</b> – Società Italiana di Ultrasonologia in Medicina e Biologia – Socio
2014	<b>The Endocrine Society</b> – Associate Member
2019	<b>The Endocrine Society</b> – Early Career Member

### Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2020	Evaluating the role of molecular signatures of thyroid cancer in the estimation of recurrence risk using a real-world database [PI]	Sapienza University of Rome Research Grant (Progetti di Ricerca Medi, protocollo: <b>RM120172B1AA6028</b> )	€ 10.000
2019	Deep learning to improve the sonographic classification of thyroid nodules [PI]	Sapienza University of Rome Research Grant (Progetti di Ricerca Piccoli, protocollo: <b>RP11916B881DAA8F</b> )	€ 3.000
2019	TeraStat2: infrastruttura di supercalcolo ad alta densità per la risoluzione di problemi data-centric di elevata complessità [I] – Resp. Prof. U. Ferraro Petrillo	Sapienza University of Rome Research Grant (Progetti di Ricerca -acquisizione di Medie Attrezzature per l'anno 2019, prot. <b>MA31916B8891453A</b> )	€ 55.000
2019	Improving sonographic classification of thyroid nodules [PI]	<b>Google - Google Cloud Platform</b> research credits program.	\$ 5.000
2018	Machine learning to improve the sonographic classification of thyroid nodules [PI]	European Thyroid Association Research Grant for Clinical Science	€ 20.000
2018	Valutazione del ruolo di RUNX2 come marcatore prognostico nei carcinomi papilliferi della tiroide e ricerca delle pathway tumorigeniche ad esso correlate [I] – Responsabile dott.ssa Antonella Verrienti	Sapienza University of Rome Research Grant (Progetti di Ricerca Piccoli, prot. <b>RP118164277DC13D</b> )	€ 3.000
2017	Use of molecular biomarkers in FNA specimens to improve diagnostic accuracy of cytology and personalize management of thyroid cancer patients [I] – Responsabile prof. Sebastiano Filetti	Sapienza University of Rome Research Grant (Progetti di Ricerca Medi, prot. <b>RM11715C7DD0EF56</b> )	€ 10.000 + € 23.750
2016	Utilizzo di scores ecografici multiparametrici nella caratterizzazione del rischio stimato	Sapienza University of Rome Starter Research Grant (Progetti di Avvio alla	€ 2.500

	di malignità di noduli tiroidei sottoposti a citologia per ago sottile [PI]	Ricerca 2016, prot. AR216154C9B479B2)	
2009	Valutazione preclinica degli effetti terapeutici di nuovi inibitori delle chinasi Aurora nei carcinomi anaplastici della tiroide [Sub-I locale] – Coordinatore Scientifico Prof. Piero Berti	Programma di ricerca PRIN 2009, prot. 2009ETKHR2_003	€ 279.866 (cofinanziamento complessivo)

## Part VII – Research Activities

Keywords	Brief Description
Thyroid nodule	Thyroid nodule ultrasound the main tool to stratify the malignancy risk of thyroid nodules; my previous research outlined strengths and weaknesses of the method, with proposals for improvements. Thyroid Imaging Reporting and Data Systems (TIRADS) are now endorsed by scientific societies to reduce the number of performed biopsies and to improve reporting and communication between clinicians. We validated and compared the different systems, providing data about their diagnostic accuracy, the number of avoidable biopsies, the interobserver variability and variations over time. <i>The overall clinical goal is to reduce the number of biopsies for nodules that are likely benign and to improve cost-effectiveness of clinical management algorithms.</i>
NGS	I participated in the development of a double-component molecular testing approach for indeterminate thyroid nodules, including <i>Next Generation Sequencing</i> and miRNA quantification. <i>The testing approach aims to reduce the number of unnecessary thyroid surgeries in clinical practice.</i>
Thyroid cancer	The follow-up of thyroid cancer patients is evolving towards a more conservative approach in the last years. Our group reviewed the literature and documented these changes, highlighting unmet needs. Furthermore, we provided original data about the performance of post-surgical sonographic surveillance, and the potential role of novel circulating biomarkers.
Radiomics	I participate in the activities of the Sapienza Information-Based Technology Innovation Center for Health, a transdisciplinary research center, which coordinates research efforts among various disciplines, including clinicians such as myself, biotechnologists, computer scientists, and engineers. As the PI on university- and European Thyroid Association-funded grants, I already contributed to the development of an algorithm for the automatic classification of thyroid nodule images.
Big Data	“Big data” in healthcare refers to massive volumes of information created by digital technologies (including <i>-omics</i> approaches) or collected in patients' electronic health records. We are trying to derive clinically meaningful knowledge from the intersection of molecular profiles and clinical data of thyroid cancer and diabetes patients.
Medical informatics	More broadly, I collaborate with computer scientists about several topics on the intersection between medicine and computer science (e.g., disease classification, taxonomies, and prediction algorithms).

## Part VIII – Summary of Scientific Achievements

Product type	Number	Data Base	Start	End
Papers [international]	79	Scopus	2009	2021
Books [scientific]	1	Springer	2021	2021

Total Impact factor	390,11 (Web of Science)
Total Citations	1532 (Scopus)
Average Citations per Product	19,39 (Scopus)
Hirsch (H) index	21 (Scopus)
Normalized H index*	1,75 (21/12)

\*H index divided by the academic seniority.

## Part IX– Selected Publications

List of the publications selected for the evaluation. For each publication report title, authors, reference data, journal IF (if applicable), citations, press/media release (if any).

1. Durante, Cosimo; **Grani, Giorgio**; Lamartina, Livia; Filetti, Sebastiano; Mandel, Susan J.; Cooper, David S. The diagnosis and management of thyroid nodules a review. JAMA 2018; 319 (9):919 - 924. doi:10.1001/jama.2018.0898. **N. of citations (Scopus): 166. Impact factor: 51,273**
2. **Grani, Giorgio**; Lamartina, Livia; Ascoli, Valeria; Bosco, Daniela; Biffoni, Marco; Giacomelli, Laura; Maranghi, Marianna; Falcone, Rosa; Ramundo, Valeria; Cantisani, Vito; Filetti, Sebastiano; Durante, Cosimo. Reducing the number of unnecessary thyroid biopsies while improving diagnostic accuracy: towards the "right" TIRADS. THE JOURNAL OF CLINICAL ENDOCRINOLOGY AND METABOLISM 2019; 104 (1):95 - 102. doi:10.1210/jc.2018-01674. **N. of citations (Scopus): 106. Impact factor: 5,399**
3. **Grani, Giorgio**; Lamartina, Livia; Cantisani, Vito; Maranghi, Marianna; Lucia, Piernatale; Durante, Cosimo. Interobserver agreement of various thyroid imaging reporting and data systems. ENDOCRINE CONNECTIONS 2018; 7 (1):1 - 7. doi:10.1530/EC-17-0336. **N. of citations (Scopus): 89. Impact factor: 2,474**
4. **Grani, Giorgio**; Lamartina, Livia; Durante, Cosimo; Filetti, Sebastiano; Cooper, David S. Follicular thyroid cancer and Hurthle cell carcinoma: Challenges in diagnosis, treatment, and clinical management. THE LANCET DIABETES & ENDOCRINOLOGY 2018; 6 (6):500 - 514. doi:10.1016/S2213-8587(17)30325-X. **N. of citations (Scopus): 72. Impact factor: 24,54**
5. **Grani, Giorgio**; Lamartina, Livia; Ascoli, Valeria; Bosco, Daniela; Nardi, Francesco; D'Ambrosio, Ferdinando; Rubini, Antonello; Giacomelli, Laura; Biffoni, Marco; Filetti, Sebastiano; Durante, Cosimo; Cantisani, Vito Ultrasonography scoring systems can rule out malignancy in cytologically indeterminate thyroid nodules. ENDOCRINE 2017; 57 (2):256 - 261. doi:10.1007/s12020-016-1148-6. **N. of citations (Scopus): 67. Impact factor: 3,179**
6. Rosignolo, Francesca; Memeo, Lorenzo; Monzani, Fabio; Colarossi, Cristina; Pecce, Valeria; Verrienti, Antonella; Durante, Cosimo; **Grani, Giorgio**; Lamartina, Livia; Forte, Stefano; Martinetti, Daniela; Giuffrida, Dario; Russo, Diego; Basolo, Fulvio; Filetti, Sebastiano; Sponziello, Marialuisa MicroRNA-based molecular classification of papillary

- thyroid carcinoma. *INTERNATIONAL JOURNAL OF ONCOLOGY* 2017; 50 (5):1767 - 1777. doi:10.3892/ijo.2017.3960. **N. of citations (Scopus): 46. Impact factor: 3,333**
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