**Activities 2018-2019**

**Published and Accepted Research Articles in Refereed Journals:**

1. Tesche C, Otani K, **De Cecco CN**, Coenen A, De Geer J, Kruk M, Kim YH, Albrecht MH, Baumann S, Renker M, Bayer RR, Duguay TM, Litwin SE, Varga-Szemes A, Steinberg DH, Yang DH, Kepka C, Persson A, Nieman K, Schoepf UJ. [Influence of Coronary Calcium on Diagnostic Performance of Machine Learning CT-FFR: Results From MACHINE Registry.](https://www.ncbi.nlm.nih.gov/pubmed/31422141) JACC Cardiovasc Imaging. 2019 Aug 8. [Epub ahead of print]
2. Wichmann JL, Takx RAP, Nunez JH, Vliegenthart R, Otani K, Litwin SE, Morris PB, **De Cecco CN**, Rosenberg RD, Bayer RR 2nd, Baumann S, Renker M, Vogl TJ, Wenger NK, Schoepf UJ. [Relationship Between Pregnancy Complications and Subsequent Coronary Artery Disease Assessed by Coronary Computed Tomographic Angiography in Black Women.](https://www.ncbi.nlm.nih.gov/pubmed/31303028) Circ Cardiovasc Imaging. 2019 Jul;12(7):e008754. [Epub ahead of print]
3. Kolossváry M, **De Cecco CN**, Feuchtner G, Maurovich-Horvat P. [Advanced atherosclerosis imaging by CT: Radiomics, machine learning and deep learning.](https://www.ncbi.nlm.nih.gov/pubmed/31029649)  Cardiovasc Comput Tomogr. 2019 Apr 21. [Epub ahead of print]
4. Muscogiuri G, Suranyi P, Eid M, Varga-Szemes A, Griffith L, Pontone G, Schoepf UJ, **De Cecco CN.** [Pediatric Cardiac MR Imaging: Practical Preoperative Assessment.](https://www.ncbi.nlm.nih.gov/pubmed/30910096) Magn Reson Imaging Clin N Am. 2019 May;27(2):243-262.
5. De Santis D, **De Cecco CN**, Schoepf UJ, Nance JW, Yamada RT, Thomas BA, Otani K, Jacobs BE, Turner DA, Wichmann JL, Eid M, Varga-Szemes A, Caruso D, Grant KL, Schmidt B, Vogl TJ, Laghi A, Albrecht MH. [Modified calcium subtraction in dual-energy CT angiography of the lower extremity runoff: impact on diagnostic accuracy for stenosis detection.](https://www.ncbi.nlm.nih.gov/pubmed/30805703) Eur Radiol. 2019 Sep;29(9):4783-4793.
6. van Assen M, **De Cecco CN**, Eid M, von Knebel Doeberitz P, Scarabello M, Lavra F, Bauer MJ, Mastrodicasa D, Duguay TM, Zaki B, Lo GG, Choe YH, Wang Y, Sahbaee P, Tesche C, Oudkerk M, Vliegenthart R, Schoepf UJ. [Prognostic value of CT myocardial perfusion imaging and CT-derived fractional flow reserve for major adverse cardiac events in patients with coronary artery disease.](https://www.ncbi.nlm.nih.gov/pubmed/30796003) J Cardiovasc Comput Tomogr. 2019 May - Jun;13(3):26-33.
7. van Assen M, Lavra F, Schoepf UJ, Jacobs BE, Williams BT, Thompson ZM, Varga-Szemes A, Ruzsics B, Oudkerk M, Vliegenthart R, **De Cecco CN**. [Iodine quantification based on rest / stress perfusion dual energy CT to differentiate ischemic, infarcted and normal myocardium.](https://www.ncbi.nlm.nih.gov/pubmed/30777202) Eur J Radiol. 2019 Mar;112:136-143.
8. Yang J, Dou G, Tesche C, **De Cecco CN**, Jacobs BE, Schoepf UJ, Chen Y. [Progression of coronary atherosclerotic plaque burden and relationship with adverse cardiovascular event in asymptomatic diabetic patients.](https://www.ncbi.nlm.nih.gov/pubmed/30744612) BMC Cardiovasc Disord. 2019 Feb 11;19(1):39.
9. Saba L, Ajossa S, Ledda G, Balestrieri A, Schirru F, **De Cecco CN**, Suri JS, Melis GB, Lavra F, Guerriero S. [Does the clinical information play a role in the magnetic resonance diagnostic confidence analysis of ovarian and deep endometriosis?](https://www.ncbi.nlm.nih.gov/pubmed/30730754) Br J Radiol. 2019 Apr;92(1096):20180548. [Epub ahead of print]
10. Albrecht MH, Varga-Szemes A, Schoepf UJ, Nance JW, **De Cecco CN**, De Santis D, Tesche C, Eid MH, Penmetsa M, Lesslie VW, Piccini D, Goeller M, Wichmann JL, Vogl TJ, Chowdhury SM, Nutting A, Hlavacek AM. [Diagnostic Accuracy of Noncontrast Self-navigated Free-breathing MR Angiography versus CT Angiography: A Prospective Study in Pediatric Patients with Suspected Anomalous Coronary Arteries.](https://www.ncbi.nlm.nih.gov/pubmed/30655052) Acad Radiol. 2019 Jan 14. [Epub ahead of print]
11. van Assen M, Pelgrim GJ, **De** **Cecco CN**, Stijnen JMA, Zaki BM, Oudkerk M, Vliegenthart R, Schoepf UJ. [Intermodel disagreement of myocardial blood flow estimation from dynamic CT perfusion imaging.](https://www.ncbi.nlm.nih.gov/pubmed/30599857) Eur J Radiol. 2019 May;29(5):2378-2387
12. von Knebel Doeberitz PL, **De** **Cecco CN**, Schoepf UJ, Duguay TM, Albrecht MH, van Assen M, Bauer MJ, Savage RH, Pannell JT, De Santis D, Johnson AA, Varga-Szemes A, Bayer RR, Schönberg SO, Nance JW, Tesche C. [Coronary CT angiography-derived plaque quantification with artificial intelligence CT fractional flow reserve for the identification of lesion-specific ischemia.](https://www.ncbi.nlm.nih.gov/pubmed/30523456) Eur Radiol 2019 May;29(5):2378-2387
13. Mastrodicasa D, Albrecht MH, Schoepf UJ, Varga-Szemes A, Jacobs BE, Gassenmaier S, De Santis D, Eid MH, van Assen M, Tesche C, Mantini C, **De** **Cecco CN**. [Artificial intelligence machine learning-based coronary CT fractional flow reserve (CT-FFRML): Impact of iterative and filtered back projection reconstruction techniques.](https://www.ncbi.nlm.nih.gov/pubmed/30391256) J Cardiovasc Comput Tomogr. 2018 Oct 26. [Epub ahead of print]
14. van Assen M, **De** **Cecco CN**, Sahbaee P, Eid MH, Griffith LP, Bauer MJ, Savage RH, Varga-Szemes A, Oudkerk M, Vliegenthart R, Schoepf UJ. [Feasibility of extracellular volume quantification using dual-energy CT.](https://www.ncbi.nlm.nih.gov/pubmed/30377090) J Cardiovasc Comput Tomogr. 2019  Jan - Feb;13(1):81-84.
15. Tesche C, Duguay TM, Schoepf UJ, van Assen M, **De** **Cecco CN**, Albrecht MH, Varga-Szemes A, Bayer RR 2nd, Ebersberger U, Nance JW, Thilo C. [Current and future applications of CT coronary calcium assessment.](https://www.ncbi.nlm.nih.gov/pubmed/29734858) Expert Rev Cardiovasc Ther. 2018 Jun;16(6):441-453
16. Singh G, Al'Aref SJ, Van Assen M, Kim TS, van Rosendael A, Kolli KK, Dwivedi A, Maliakal G, Pandey M, Wang J, Do V, Gummalla M, **De Cecco CN**, Min JK. [Machine learning in cardiac CT: Basic concepts and contemporary data.](https://www.ncbi.nlm.nih.gov/pubmed/29754806) J Cardiovasc Comput Tomogr. 2018 May - Jun;12(3):192-201
17. De Santis D, Eid M, **De** **Cecco CN**, Jacobs BE, Albrecht MH, Varga-Szemes A, Tesche C, Caruso D, Laghi A, Schoepf UJ. [Dual-Energy Computed Tomography in Cardiothoracic Vascular Imaging.](https://www.ncbi.nlm.nih.gov/pubmed/29936945) Radiol Clin North Am. 2018 Jul;56(4):521-534
18. Albrecht MH, **De** **Cecco CN**, Schoepf UJ, Spandorfer A, Eid M, De Santis D, Varga-Szemes A, van Assen M, von Knebel-Doeberitz PL, Tesche C, Puntmann VO, Nagel E, Vogl TJ, Nance JW. [Dual-energy CT of the heart current and future status.](https://www.ncbi.nlm.nih.gov/pubmed/30017266) Eur J Radiol. 2018 Aug;105:110-118
19. De Santis D, Caruso D, Schoepf UJ, Eid M, Albrecht MH, Duguay TM, Varga-Szemes A, Laghi A, **De Cecco CN**. [Contrast media injection protocol optimization for dual-energy coronary CT angiography: results from a circulation phantom.](https://www.ncbi.nlm.nih.gov/pubmed/29488083) Eur Radiol. 2018 Aug;28(8):3473-3481
20. Albrecht MH, Bickford MW, Schoepf UJ, Tesche C, De Santis D, Eid M, Jacobs BE, Duguay TM, Schmidt BT, Canstein C, Varga-Szemes A, Leithner D, Martin S, Vogl TJ, **De Cecco CN**. [Beam-hardening in 70-kV Coronary CT angiography: Artifact reduction using an advanced post-processing algorithm.](https://www.ncbi.nlm.nih.gov/pubmed/29571783) Eur J Radiol. 2018 Apr;101:111-117

**Invitations to National/International, Regional, and Institutional Conferences:**

1. Low kV Imaging: Current Scientific View and Outlook. Bayer Workshop. *Invited Lecturer.* European Congress of Radiology (ECR), Vienna, Austria, February 28 –March 4, 2018
2. Artificial Intelligence Symposium. *Moderator.* North American Society of Cardiovascular Imaging (NASCI). Annual Meeting, Charleston, SC, USA, September 22-25, 2019
3. Beyond the Buzzwords: Current Status, Challenges, and Opportunities of Artificial Intelligence in Cardiovascular Applications. *Invited Speaker*. North American Society of Cardiovascular Imaging (NASCI) Annual Meeting, Charleston, SC, USA, September 22-25, 2019
4. FFR vs CT Myocardial Perfusion – Which Should Be Incorporated into Routine Clinical Practice? *Invited Speaker*. North American Society of Cardiovascular Imaging (NASCI) Annual Meeting, Charleston, SC, USA, September 22-25, 2019
5. Myocardial CT Perfusion. *Invited Speaker*.  Society of Computed Body Tomography and Magnetic Resonance (SCBT-MR) Annual Meeting, Washington, DC, USA, October 6-10, 2019.
6. Clinical Implementation of Machine Learning Algorithms in Cardiovascular Imaging & Development of a Regulatory Framework. *Invited Speaker*. BMI Seminar Series, Department of Biomedical Informatics, Atlanta, GA, USA, November 14, 2018
7. Congenital Heart Disease. *Invited Speaker*. Radiological Society of North America (RSNA), Chicago, IL, USA, November 26, 2018
8. Dual Energy CT - Cardiothoracic Imaging. *Invited Speaker*. 2019 CT Symposium, Winship Cancer Institute, Atlanta, GA, USA, January 12, 2019
9. Artificial Intelligence/Machine Learning Clinical Applications: Development of a regulatory Framework in the US. *Invited Speaker.* 13th Netherlands Heart Days (NHD). Curaçao, NL, January 18, 2019
10. Machine Learning in Cardiovascular Imaging. *Moderator.* 13th Netherlands Heart Days (NHD). Curaçao, NL, January 18, 2019.
11. State of the Art in Cardiac CT: From Functional Imaging to Artificial Intelligence. *Invited Speaker*. ADCR Talk, Atlanta, GA, USA, January 24, 2019
12. What is the potential of machine learning? *Invited Speaker.* Innovations in Cardiology - When Cardiac Imaging meets Clinical needs. Bari, Italy, February 16, 2019
13. State of the Art in Cardiac CT: From Functional Imaging to Artificial Intelligence. *Invited Speaker*. Emory University Department of Medicine Grand Rounds, Atlanta, GA, USA, February 19, 2019
14. Modern Techniques for Cardiac CT: Anatomy or Function or Both? Assessment of Coronary Stenosis and FFR. *Invited Speaker*. European Society of Cardiovascular Radiology (ESCR) Webinar Series, March 13, 2019.
15. Coronary Track: Risk Stratification & Revascularization Options for Stable CAD. *Moderator*. EPIC-SEC 2019, Atlanta, GA, USA, May 2, 2019
16. Role of Artificial Intelligence in Cardiac Imaging. *Invited Speaker*. Italian Society of Medical Radiology (SIRM) Webinar Series, May 23, 2019.
17. Artificial intelligence in abdominal imaging: how shall we reshape our future? *Moderator*. European Society of Gastrointestinal and Abdominal Radiology (ESGAR) 30th Annual Meeting and Postgraduate Course, Rome, Italy, June 6, 2019
18. AI in Cardiac Imaging: Regulatory Framework Development & Implementation in the US. *Invited Speaker*. 14th Somatom World Summit, Toronto, Canada, June 27, 2019
19. Multienergy CT in Oncology. *Invited Speaker*. Innovations in CT Meeting, Rome, Italy, July 12, 2019

**Resident Lectures:**

1. Congenital Cardiac Imaging, Radiology Residents, Jan 4, 2019
2. Board Review Congenital Cardiac Imaging. 3rd year Radiology Residents, May 21, 2019

**Committee Memberships:**

1. National and International:

1. Corporate Relations Committee, Society of Cardiovascular CT (SCCT), 2019 - Present

1. Institutional:

1. Appointments and Promotions Committee, Department of Radiology, Emory University, 2019 - Present

2. CT Quality and Safety Committee, Department of Radiology, Emory University, 2019 – Present

3. PET-MR Protocol Committee, Department of Radiology, Emory University, 2019 - Present

**Editorial Boards:**

1. Editorial Board Member, Radiology: Cardiothoracic Imaging, 2018 – Present
2. Section Editor Artificial Intelligence and Machine Learning, European Journal of Radiology, 2018 – Present

**Visiting Research Scholar:**

1. Caterina Monti, MD, PhD Student, University of Milan, 2019

**Research Grants:**

1. Title: Machine Learning-based automated software prototype for the automated measurement of the aorta. (IRB00108920, 2019)

Investigator Status: PI

Sponsor: Siemens Medical Solution USA

2.SCORE study

Investigator Status: Co-I

Principal Investigator: Arshed Quyyumi

Sponsor:

3. Quantification of myocardial blood flow using dynamic PET/CTA fused imagery to determine the physiological significance of specific coronary lesions.(IRB00107151, 2019)

Investigator Status: Co-I

Principal Investigator: Ernest Garcia

Sponsor: NIH-R01

4. A Pilot Study of Pulmonary and Cardiac Functional Imaging in Locally Advanced Non-Small Cell Lung Cancer Patients Receiving Thoracic Radiotherapy. (IRB00108411, 2019)

Investigator Status: Co-I

Principal Investigator: Kristin Higgins

Sponsor: Internal – Department Rad Onc

5. Using 4D Flow MRI and Computational Fluid Mechanics to Predict Left Ventricular Outflow Tract Obstruction after Transcatheter mitral valve Implantation (2019)

Investigator Status: PI

Co-PI: John Oshinski

Sponsor: Department of Radiology & Imaging Sciences Seed Grant