

# Katie W Hulme, MS, DABR

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## Certifications and Licenses

2014 P5705 **American Board of Radiology - Diagnostic Medical Physics**  
2015 - present #143 **State of Florida - Diagnostic Radiological Physicist**  
2012 - present #338 **State of Ohio - Certified Radiation Expert**  
*Mammography and Diagnostic other than Mammography*

## Education

2009 MS **Medical Physics (CAMPEP Accredited)**  
*University of Texas, MD Anderson Cancer Center, Houston, TX*  
2007 BS **Physics**  
*Duke University, Durham, NC*

## Employment

2018 - present **Mammography Phantom Reviewer**  
*American College of Radiology, Reston, VA*

2010 - present **Diagnostic Medical Physicist - Associate Staff**  
*Cleveland Clinic, Cleveland, OH*

- Primary physicist for Mammography, including, but not limited to, acceptance testing, annual testing, post-repair testing, oversight of quality control, and support for MQSA inspections
  - 70 mammography units (55 DBT-capable)
  - 8 prone stereotactic units (4 capable of DBT-guided biopsy)
  - 6 stereotactic attachments (2 capable of DBT-guided biopsy)
  - 44 mammographic primary display workstations
- Secondary physicist for General Radiography, including, but not limited to, acceptance testing, post-repair testing, oversight of annual testing, and oversight of quality control
  - 167 stationary radiographic units
  - 81 mobile radiographic units
  - 33 bone density units
  - 19 intra-oral dental units
  - 3 pan-oral dental units
  - 5 hand-held dental units
  - 154 primary display workstations
- Certified Radiation Expert of record for:  
South Pointe Hospital, Ashtabula County Medical Center, Conneaut Family Health Center, Euclid Hospital, Willoughby Hills Family Health Center, Amherst Family Health Center, Sheffied Family Health Center, and Beachwood Family Health Center

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### Professional Societies

- 2010 - present **American Association of Physicists in Medicine (AAPM)**  
2018 - present **The American College of Radiology**

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### Committees

- 2020 - present **ABR DMP Oral Exam Committee**  
2019 - present **ACR Subcommittee on Breast X-ray Imaging Physics**  
2018 - present **AAPM - Task Group No. 282 (Member)**  
*Task group on development of a new universal dosimetry method*  
2018 - present **AAPM - Task Group No. 323 (Member)**  
*Task group on development of a new breast dosimetry phantom*  
2017 - present **AAPM - Task Group No. 305 (Member)**  
*Task group on development of standards for vendor-neutral reject analysis in radiography*  
2012 - 2018 **AAPM - Task Group No. 232 (Member)**  
*Clinical use of CR/DR exposure indices*

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### Academic Appointments

- 2016 - present **Clinical Assistant Professor of Radiology**  
*Cleveland Clinic Lerner College of Medicine of Case Western Reserve University  
Cleveland, OH*

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### Teaching Experience

- 2017 - present **Lecturer for Cleveland State University Medical Physics Graduate Program**  
*Cleveland State University, Cleveland, OH*  
Teach a portion of the following courses at CSU:  
PHY 532 - Radiation Safety  
PHY 597 - Clinical Rotations - Imaging
- 2016 - present **Program Faculty for Cleveland Clinic Diagnostic Medical Residency Program**  
*Cleveland Clinic, Cleveland, OH*  
Member of the steering committee and teach the following rotations:  
Mammography Rotation (Primary Mentor)  
Informatics Rotation (Primary Mentor)  
Radiography (Secondary Mentor)
- 2013 - present **Medical Technology Management Institute**  
*Continuing Education Division - Hertzing University, Menomonee Falls, WI*
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| 2020 | Annual Mammography Update for Physicists (Lecturer)             |
| 2019 | Hands-on CT Physics Workshop (Lecturer and Lab Instructor)      |
| 2019 | Hands-on Digital Breast Tomosynthesis Workshop (Co-Director)    |
| 2018 | Hands-on CT Physics Workshop (Lecturer and Lab Instructor)      |
| 2016 | Hands-on Digital Breast Tomosynthesis Workshop (Lab Instructor) |
| 2014 | Hands-on CT Physics Workshop (Lecturer)                         |
| 2014 | Hands-on CR/DR Workshop for Physicists (Director)               |
| 2014 | Hands-on CR/DR Workshop for Physicists (Director)               |
- 2011 - present **Lecturer for Cleveland Clinic Radiology Resident Program**  
*Cleveland Clinic, Cleveland, OH*  
Teach a portion of the physics curriculum to the CCF radiology residents. Commitment involves several lectures, a hand-on lab session, and a review session.
- 2004 -2008 **Teaching Assistant - Duke Mathematics Department**

Duke University, Durham, NC

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### Publications

- 2018 Dave J., Jones A., Fisher R., **Hulme K.**, et. al, Current state of practice regarding digital radiography exposure indicators and deviation indices: Report of AAPM Imaging Physics Committee Task Group 232, Med Phys 45(11): e1146-31160, 2018.
- 2015 Goenka A., Dong F., Wildman B., **Hulme K.**, Johnson P., Herts B., CT Radiation Dose Optimization and Tracking Program at a Large Quaternary-Care Health System, J Am Coll Radiology 12(7): 703-10, 2015.
- 2014 **Hulme K.**, Kappadath S.C, Implications of CT noise and artifacts for quantitative 99m Tc SPECT/CT imaging, Med Phys 41(4): 042502-1-10, 2014.
- 2011 **Hulme K.**, Rong J., Chasen B., Chuang H., Cody D., Rong, J., Wong H., Kappadath S.C., A CT Acquisition Technique to Generate Images at Various Dose Levels for Prospective Dose Reduction Studies, AJR 196: W144-W151, 2011.
- 2006 Badavi F., **West K.**, Nealy J., Wilson J., Abrahms B., and Luetke N., A Dynamic/ Anisotropic Low Earth Orbit (LEO) Ionizing Radiation Model, NASA/TP-2006-214533, 2006.

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### Invited Lectures

- 2020 Diagnostic SAM session "Implementation of the ACR DMQC Manual in a Large-Scale Enterprise", AAPM Annual Meeting, July 14, 2020
- 2019 Diagnostic SAM session "Radiology Workflow: Understanding Technologists' Image QC", AAPM Annual Meeting, San Antonio, TX July 18, 2019
- 2019 Diagnostic SAM session "Exposure Index Tracking", AAPM Spring Clinical Meeting, Kissimmee, FL, April 1, 2019.
- 2017 Diagnostic SAM session "Current implementation status of IEC Standard 62494-1: Exposure index (EI) for digital radiography", AAPM Annual Meeting, Denver, CO, July 31, 2017
- 2016 Diagnostic SAM session "Unique Features of the Siemens Inspiration Digital Breast Tomosynthesis System", AAPM Spring Clinical Meeting, Salt Lake City, UT, Mar 6, 2016
- 2015 Diagnostic SAM session "Digital Radiography QC", Implementation of a Large-Scale DR QC Program, AAPM Spring Clinical Meeting, St. Louis, MO, March 10, 2015
- 2013 Practical Medical Physics Session "TG-151", Radiography System Quality Control, AAPM Annual Meeting, Indianapolis, IN, August 3, 2013

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### Published Abstracts and Proceedings

- 2020 Topbas C., Fong G., Singh V., **Hulme K.**, Li X, Using Exposure Index to Develop Thickness-Based Technique chart for Cross-Table Lateral Hip Radiography, Blue Ribbon poster at AAPM Annual Meeting, July, 2020.
- 2020 Chaudhary P., **Hulme K.**, Li X., Implementation of Flag Criteria to Establish Target Exposure Indices and Identify Practice Variation in Digital Radiography, Presented at AAPM Annual Meeting, July 14, 2020 (Oral)
- 2019 Barretto M., Turk P., Fong G., Saha K., Wuderle K., **Hulme K.**, Image Quality Comparison between Enhanced Multiple Parameter Iterative Reconstruction (EMPIRE) and Filtered Back Projection in Digital Breast Tomosynthesis (DBT) using the American College of Radiography (ACR) Digital Mammography Phantom. Accepted for presentation at RSNA, Chicago, IL, November 26, 2019 (Electronic Poster, alternate for Oral)
- 2019 Doyle E., **Hulme K.**, Preliminary Assessment of Reject Rates in Digital Radiography (DR) and Computed Radiography (CR) for a Large-Scale Enterprise, Presented at AAPM Penn-Ohio Chapter Meeting, Cleveland, OH, October 25, 2019 (Oral)

- 2019 Chaudhary P., Li X., **Hulme K.**, Computation of Target Exposure Index for GE Digital Radiography, Presented at AAPM Penn-Ohio Chapter Meeting, Cleveland, OH, October 25, 2019 (Oral)
- 2019 Scilla K., **Hulme K.**, Fisher R., Li X., Implementation of Flag Criteria in Analysis of Digital Radiography Dose Statistics, Med Phys 46(6), 2019.
- 2018 Zhao A., **Hulme K.**, Evaluation of American College of Radiology (ACR) Mammography Accreditation Phantom Image Quality of a Grid-Less and Software-Based Scatter Correction Technology. Presented at RSNA, Chicago, IL, November 26, 2018 (Oral)
- 2018 Scilla K., **Hulme K.**, Fisher R., Analysis of Abdominal Exposure Indices as a Function of Reference Target Exposure Index (TEI) for GE Digital Radiography (DR). Presented at Penn Ohio AAPM Fall Meeting, Triadelphia, WV, November 9, 2018 (Oral)
- 2018 **Hulme K.**, Scilla K., Fisher R., Li X., Investigation of State-of-Practice Using Exposure Index (EI) Data Following Digital Radiography (DR) Retrofits of Eight Radiographic Units, Med Phys 45(6):e694, 2018. Presented at AAPM Annual Meeting, Nashville, TN, August 2018 (Oral)
- 2018 **Hulme K.**, Scilla K., Fisher R., Assessment of Exam-Specific Target Exposure Indices (TEI) as a Function of a Reference Exposure Index (EI) for Agfa Computed Radiography (CR) and Digital Radiography (DR), Med Phys 45(6):e409, 2018.
- 2016 Jones A., Dave J., Fisher R., **Hulme K.**, Rill L., Zamora D., Woodward A, Brady S, MacDougall R, Goldman L, Lang S, Peck D, Apgar B, Shepard SJ, Uzenoff R and Willis C., Variability in Target Exposure Index (TEI) and Deviation Index (DI) among Digital Radiography Practices across the United States. Presented at RSNA, Chicago, IL, November 2016 (Oral)
- 2016 Jones A., Dave J., Fisher R., **Hulme K.**, Rill L., Zamora D., Woodward A, Brady S, MacDougall R, Goldman L, Lang S, Peck D, Apgar B, Shepard SJ, Uzenoff R and Willis C., Distribution of the Deviation Index (DI) in Digital Radiography Practices Across the United States. Med Phys 2016 43(6): 3762. Presented at AAPM Annual Meeting, Washington, DC, 2016 (Oral)
- 2014 Piraino D., Palmer D., Subhas N., Obuchowski N., Ciancibello M., **Hulme K.**, Scalable Distributed Open Source Medical Image Storage, Compute, and Search Platform. Presented at RSNA, Chicago, IL, December 2014 (Oral)
- 2013 He L, Udayasankar U, Park E, Vachhani N, **Hulme K.**, Acute Abdomen Series for Evaluation of Abdominal Complaints in Pediatric Patients: Effects on Patient Management and Radiation Dose. Presented at American Roentgen Ray Society Annual Conference, Washington, DC, May 2013 (Oral)
- 2013 **Hulme K.**, Kubicki V., Dong F., Davros W., Johnson P., A Method for Deriving Exam-Specific Target Exposure Indices (TEI) in Computed Radiography as a Function of a Reference TEI, Med Phys 40(6):426, 2013. Presented at AAPM Annual Meeting, Indianapolis, IN, August 2013 (Oral)
- 2013 Davros W., Hoerprich D., **Hulme K.**, Clinical Ultrasound Units Modes of Failure Survey, Med Phys 40(6):148, 2013
- 2012 Johnson P., Dong F., **Hulme K.**, Development of a Computed Tomography As Low As Reasonable Achievable Program At A Large Medical Institution. Presented at Health Physics Society Annual Conference, Sacramento, CA, July 2012 (Oral)
- 2012 Park E., **Hulme K.**, Dong F., Rodriguez R., Sands M., Reid J., Xtra Care for Xray Dose: A Comprehensive System-Wide Radiation Dose Reduction Initiative in a Large Quaternary Care Referral Center. Presented at American Roentgen Ray Society Annual Conference, Vancouver, BC, May 2012 (Oral)
- 2012 Dong F., **Hulme K.**, Johnson P., Herts B., Schneider E., Davros W., Sands M., Wildman B., Experiences in CT Protocol Optimization and Dose Monitoring. Presented at American

- Roentgen Ray Society Annual Conference, Vancouver, BC, May 2012 (Oral).
- 2009 **Hulme K.**, Kappadath S.C., Propagation of dose- and radial- dependent CT noise into reconstructed SPECT images, J Nucl Med 50(Supplement 2): 106P, 2009. Presented at Society of Nuclear Medicine Annual Meeting, Toronto, Ontario, June 2009 (Oral)
- 2009 **Hulme K.**, Kappadath S.C., Quantitative image quality assessment of high-dose CT images simulated by averaging multiple low-dose CT images for prospective CT dose reduction studies, Med Phys 36(6):2436, 2009

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### Skills

Programming IDL, Matlab, FORTRAN, Java  
OS Microsoft, Windows, UNIX, Mac OSX