**Huanjun Ding, Ph.D. DABR**

**Position:** Certified Medical Physicist
Therapy Physics, Inc.
2501 Cherry Ave., Suite 270,
Signal Hill, CA 90755
Tel: 562-317-0650, Fax: 562-317-0661, Cell: (310) 256-1231
Email: huanjun@TherapyPhysics.com

**Certification:**

American Board of Radiology - Diagnostic Medical Physics, May 2018

**State of California Approved Physicist List:**

Approved to provide Medical Physics support service for:
Mammography in the State of California - MQA #0250
Qualified in Digital Mammography and Tomosynthesis Mammography

**ACR Accreditation Programs Qualified For:**

| | |
|---|---|
| Mammography and Tomosynthesis Mammography | MRI |
| Stereotactic Breast Biopsy | Breast MRI |
| Ultrasound | PET |
| Breast Ultrasound | CT |

**Education:**

**Ph. D. in Physics,** Sep 2003 to May 2010
Department of Physics and Astronomy, University of Rochester, Rochester, NY
**M. A. in Physics,** Sep. 2000 to Jun. 2003
Department of Physics, Fudan University, Shanghai, China
**B. A. in Physics,** Sep. 1996 to Jun. 2000
Department of Physics, Shandong University, Ji'Nan, China

**Working Experience:**

Diagnostic Medical Physicist Sep. 2016 to present
Therapy Physics, Inc
Assistant Adjunct Professor Apr. 2014 to Aug. 2016
Assistant Project Scientist, Jan.2012 to Mar. 2014
Post-Doctoral Research Associate, Jul. 2010 to Dec. 2011
Department of Radiological sciences, University of California, Irvine, CA

**Professional Societies:**

American Association of Physicists in Medicine (AAPM)

**Initial Education for Mammography Physics (≥15 total credits, incl. ≥8 FFDM credits)**

October 1-2, 2016: MTMI 20th Annual Mammography Update for Physicists, Alexandria, VA
Mammography CEU's = 15.75 (8 FFDM credits)
**TOTAL Initial Mammography Credits = 15.75 Credits**
**TOTAL Initial FFDM Credits = 8 Credits**

**Initial Education for Tomographic Mammography Physics (≥8 total credits)**

October 1-2, 2016: MTMI 20th Annual Mammography Update for Physicists, Alexandria, VA
Digital Breast Tomosnythesis = 2.5 credits
September 15, 2016: Hologic Selenia Dimensions Training for Medical Physicists, Orange Coast Women's Medical Group, Laguna Woods, CA
Digital Breast Tomosnythesis = 3 credits
January 4, 2017: Hologic Selenia Dimensions Training for Medical Physicists, Newport Diagnostic Center, Newport Beach, CA
Digital Breast Tomosnythesis = 3 credits

**TOTAL Initial Tomographic Mammography Credits = 8.5 Credits**

**Continuing Education for Mammography Physics (≥15 total credits in the past three years)**

July 30 - August 3, 2017 - AAPM 59th Annual Meeting, Denver, CO = 6 Units
July 30 - August 2, 2018 - AAPM 60th Annual Meeting, Nashville, TN = 2 Units
July 14 – July 18, 2019 - AAPM 61st Annual Meeting, San Antonio, TX = 7.25 Units
February 27, 2019 - AAPM Online Continuing Education = 1 Unit
May 3, 2019 - AAPM Online Continuing Education = 1 Unit

**TOTAL Continuing Education for Mammography Credits = 17.25 Credits**

**Continuing Education for Diagnostic Physics (≥75 total credits in the past three years)**

July 30 - August 3, 2017 - AAPM 59th Annual Meeting, Denver, CO = 39.09 Units
July 30 - August 2, 2018 - AAPM 60th Annual Meeting, Nashville, TN = 22 Units
July 14 – July 18, 2019 - AAPM 61st Annual Meeting, San Antonio, TX = 33.75 Units
February 27, 2019 - AAPM Online Continuing Education = 1 Unit
May 3, 2019 - AAPM Online Continuing Education = 1 Unit

**TOTAL Continuing Education for Diagnostic Physics Credits = 96.84 Credits**

**Research Experience:**

- Spectral breast CT based on energy-resolved photon-counting detectors.
- Breast density quantification with spectral mammography.
- Quantitative contrast-enhanced spectral mammography.
- Quantification of breast artery calcification and its correlation with cardiac disease.
- Quantitative dual-energy material decomposition for tissue chemical compositional analysis.

**Selected Publications:**


1. **H. Ding**, D. Sennung, H. Cho and S. Molloi, "Quantification of breast lesion compositions using low-dose spectral mammography: A feasibility study" Medical Physics, 43, 5527 (2016).
2. J. Liu, **H. Ding**, S. Molloi, X. Zhang, and H. Gao, "TICMR: Total Image Constrained Material Reconstruction via nonlocal total variation regularization for spectral CT" IEEE Trans Med Imaging. 35, 2578 (2016)


* A complete list of 58 publications can be found through http://www.ncbi.nlm.nih.gov/sites/myncbi/14yzoyWBzT0kT/bibliography/48083866/public/?sort=date&direction=ascending

# Therapy Physics, Inc.

*Diagnostic Radiology Physics Services*
*Radiation Protection Shielding Design*
*Radiation Oncology Physics Services*

**2501 Cherry Ave, #270** **(562) 317-0650**
**Signal Hill, CA 90755** **(562) 317-0661 (Fax)**
**www.therapyphysics.com**

**Melissa C. Martin, M.S., DABR, FACR** **Tyler S. Fisher, M.S., DABR**
**Steven LaFontaine, M.S., DABR** **Katie L. Darner, M.S., DABR**
**Mike Masiar, M.S., DABR** **Huanjun Ding, Ph.D.**


Date: October 31, 2017

Subject: Initial Mammography Training for Huanjun Ding, Ph.D., MQA#0250 CA

To Whom It May Concern:

Per MQSA requirements on the Initial Application to Provide Mammography Support Services, we attest that through direct training provided under our direct supervision, Huanjun Ding, Ph.D., MQA#0250 CA, has satisfied the following requirements:

- Documentation of the specialized training in conducting mammography surveys (20 contact hours).

- Documentation of experience performing surveys on a total of at least 10 mammography units of at least one facility. No more than one survey of a specific unit within a period of 60 days can be counted towards the survey requirement. These surveys must have been performed under the direct supervision of a qualified medical physicist who meets the requirements of 21 CFR 900.12(a)(3)(i) and (a)(3)(iii) if you are applying for initial qualification evaluation.

The relevant units and contact hours are attached below.

Steven M. LaFontaine, M.S., DABR, MQA#0203
Certified Medical Physicist

Tyler S. Fisher, M.S., DABR, MQA#0183 CA
Certified Medical Physicist

Katie L. Darner, M.S., DABR, MQA#0166 CA
Certified Medical Physicist

| Index | Site | Mammography System | Survey Date | Supervising Medical Physicist | Contact Hours |
|---|---|---|---|---|---|
| 1 | Orange Coast Women's Medical Group | Selenia Dimensions | September 15, 2016 | Tyler S. Fisher M.S., DABR, MQA # 0183 | 2 |
| 2 | Beaver Medical Group | Selenia Dimensions | September 19, 2016 | Steven M. LaFontaine, M.S., DABR, MQA # 0203 | 2 |
| 3 | Newhope Imaging Center | Selenia Dimensions | October 6, 2016 | Tyler S. Fisher M.S., DABR, MQA # 0183 | 2 |
| 4 | Barstow Community Hospital | GE Senographe Essential | October 21, 2016 | Tyler S. Fisher M.S., DABR, MQA # 0183 | 2 |
| 5 | Providence Little Company of Mary Women's Imaging Center | Selenia Dimensions -RM 3 | November 15, 2016 | Katie Darner, M.S., DABR, MQA # 0166 | 2 |
| 6 | Providence Little Company of Mary Women's Imaging Center | Selenia Dimensions -RM 4 | November 15, 2016 | Katie Darner, M.S., DABR, MQA # 0166 | 2 |
| 7 | Magan Medical Clinic | Selenia Dimensions | November 16, 2016 | Tyler S. Fisher M.S., DABR, MQA # 0183 | 2 |
| 8 | Orange County Diagnostics - Irvine | Fisher Senoscan | November 16, 2016 | Tyler S. Fisher M.S., DABR, MQA # 0183 | 2 |
| 9 | Memorial Care Breast Center | Selenia Dimensions | November 21, 2016 | Steven M. LaFontaine, M.S., DABR, MQA # 0203 | 2 |
| 10 | Imaging Center at St. Mary | GE Senographe DS | December 9, 2016 | Katie Darner, M.S., DABR, MQA # 0166 | 2 |
| 11 | Imaging Center at St. Mary | Siemens Mammomat Inspiration | December 9, 2016 | Katie Darner, M.S., DABR, MQA # 0166 | 2 |
| | | | | **Total Contact Hours** | 22 |

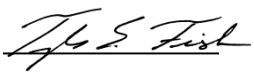
**Continuing Medical Physics Experience**
**Huanjun Ding, Ph. D. - MQA # 0250**

**To demonstrate compliance with 21CFR 900.12 (a) (3) (iii) (B) - "the medical physicist shall have surveyed at least two mammography facilities and a total of at least six mammography units during the 24 months immediately preceding the date of the facility's annual MQSA inspection or the last day of the calendar quarter or any date in-between the two."**

**I have provided the mammography physics services to the following facilities on the mammography units as listed below:**

| | | |
|---|---|---|
| Saddleback MemorialCare Breast Center, Laguna Hills, CA | Lorad Dimensions | January 16, 2019 |
| Women's Imaging Center, Orange, CA | Lorad Dimensions | April 12, 2019 |
| Long Beach Memorial Breast Center, Long Beach, CA | Lorad Dimensions | April 15, 2019 |
| Palm Imaging, San Bernardino, CA | GE Essential | June 7, 2019 |
| ICM Medical Group, Inc., Inglewood, CA | Lorad Selenia | July 10, 2019 |
| PIH Health Breast Center, Whittier, CA | Lorad Dimensions | August 29, 2019 |
| Beaver Medical Group, Redlands, CA | Lorad Dimensions | September 10, 2018 |
| Desert Comprehensive Breast Center, Palm Spring, CA | Lorad Dimensions | September 6, 2019 |

Huanjun Ding, Ph. D., DABR, MQA#250
Certified Medical Physicist



Tyler S. Fisher, M.S., DABR, MQA#0183 CA
Certified Medical Physicist

**Continuing Medical Physics Experience**
**Huanjun Ding, Ph. D. - MQA # 0250**

**To demonstrate compliance with ACR Stereotactic Breast Biopsy Accreditation Program - "upon renewal, the medical physicist shall have surveyed at least two stereotactic breast biopsy units in the prior 24 months."**

**I have provided physics surveys to the following facilities on the stereotactic breast biopsy units as listed below:**

| | | |
|---|---|---|
| Anaheim Regional Medical Center, Breast Center, Anaheim, CA | Hologic MultiCare Platinum | March 4, 2019 |
| Long Beach Memorial Breast Center, Long Beach, CA | Hologic Affirm | April 15, 2019 |
| Desert Comprehensive Breast Center, Palm Springs, CA | Hologic MultiCare Platinum | September 6, 2019 |

Huanjun Ding, Ph. D., DABR
Certified Medical Physicist

# Continuing Medical Physics Experience

**I have provided medical physics services in accordance with ACR guidelines to the following facilities as listed below:**

**Computed Tomography**

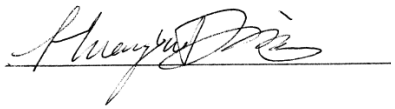
| | | |
|---|---|---|
| **Alhambra Hospital, Alhambra, CA** | **Toshiba Aquilion 64** | **May 22, 2019** |
| **Placentia Linda Hospital, Placentia Linda CA** | **GE Lightspeed 16** | **April 25, 2019** |
| **San Antonio Regional Hospital, Upland CA** | **Siemens Somatom Definition AS** | **May 13, 2019** |

**Magnetic Resonance Imaging**

| | | |
|---|---|---|
| **Inglewood Imaging Center, Inglewood, CA** | **Siemens Symphony** | **April 11, 2019** |
| **Lakewood Regional Hospital, Lakewood , CA** | **GE Signa** | **June 12, 2019** |
| **Torrance Memorial Medical Center, Torrance, CA** | **Siemens Skyra** | **March 12, 2019** |

**Ultrasound**

| | | |
|---|---|---|
| **San Antonio Regional Hospital, Upland, CA** | **Philips Epiq 7G** | **August 7, 2018** |
| **Imaging Partners of Orange County, Orange, CA** | **Siemens S2000** | **January 31, 2018** |
| **Scripps Coastal Medical Center, Vista CA** | **GE Logiq E9** | **December 5, 2018** |



**Huanjun Ding, Ph.D., DABR**

**Certified Medical Physicist**

**CAMPEP**
**Commission on Accreditation of Medical Physics Education Programs, Inc.**
**Certificate of Medical Physics Continuing Education Credits**
**----Transcript----**

**Huanjun Ding**
1 cherry N
Irvine, CA 92612
US

Participated in the following CAMPEP accredited educational program(s) and is awarded Medical Physics Continuing Education Credits (MPCECs) as designated

| Program Title | Date Credits Earned | Category/SubCategory | EA Title | Credits |
|---|---|---|---|---|
| 2019 61st AAPM Annual Meeting & Exhibition | 07/17/2019 | Diagnostic Radiology: Mammography | Contrast-enhanced and Functional Imaging of the Breast | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/15/2019 | Diagnostic Radiology: Mammography | From Breast Cancer Screening to Stereotactic Biopsy: A Technological, Clinical, and Patient Perspective | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/17/2019 | Diagnostic Radiology: Mammography | In Memoriam of Libby Brateman: Education, Licensure, Guidance and Mammography-Enhancing the Recognition of the Medical Physics Profession | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/16/2019 | Diagnostic Radiology: Mammography | Mammography and Other Breast Imaging | 1.25 |
| 2019 AAPM Online Continuing Education | 02/27/2019 | Diagnostic Radiology: Mammography | 2484-N Mammography 1 Contrast Enhanced Spectral Mammography | 1 |
| 2019 AAPM Online Continuing Education | 05/03/2019 | Diagnostic Radiology: Mammography | 2516-N How does c-view image quality compare with conventional 2D FFDM? | 1 |
| 59th AAPM Annual Meeting & Exhibition | 08/02/2017 | Diagnostic Radiology: Mammography | Advanced Breast Imaging: Stereotactic Breast Biopsy Updates and Contrast Enhanced Spectral Mammography | 1 |
| 59th AAPM Annual Meeting & Exhibition | 08/02/2017 | Diagnostic Radiology: Mammography | Implementation of the 2016 ACR Digital Mammography Quality Control Manual | 2 |
| 59th AAPM Annual Meeting & Exhibition | 08/02/2017 | Diagnostic Radiology: Mammography | MamTomoMBI | 1.5 |
| 59th AAPM Annual Meeting & Exhibition | 08/01/2017 | Diagnostic Radiology: Mammography | Non-conventional Multi-source X-Ray Imaging: Cardiac, Breast Imaging and Cone Beam CT | 1.5 |
| 60th AAPM Annual Meeting & Exhibition | 07/31/2018 | Diagnostic Radiology: Mammography | Breast Imaging | 2 |
| | | | Total Released Credits: | 17.25 |

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**CAMPEP**
**Commission on Accreditation of Medical Physics Education Programs, Inc.**
**Certificate of Medical Physics Continuing Education Credits**
**----Transcript----**

**Huanjun Ding**
1 cherry N
Irvine, CA 92612
US

Participated in the following CAMPEP accredited educational program(s) and is awarded Medical Physics Continuing Education Credits (MPCECs) as designated

| Program Title | Date Credits Earned | Category/SubCategory | EA Title | Credits |
|---|---|---|---|---|
| 2017 AAPM Diagnostic Review Course | 07/29/2017 | Diagnostic Radiology: Computed Tomography | CT Technology Dosimetry | 1 |
| 2017 AAPM Diagnostic Review Course | 07/30/2017 | Diagnostic Radiology: Radiography | Diagnostic X-Ray Equipment Testing | 1 |
| 2017 AAPM Diagnostic Review Course | 07/30/2017 | Diagnostic Radiology: Radiography | Fluoroscopic Image Quality and Radiation Dosimetry | 1 |
| 2017 AAPM Diagnostic Review Course | 07/29/2017 | Diagnostic Radiology: Radiation Protection | Hospital Radiation Protection | 1 |
| 2017 AAPM Diagnostic Review Course | 07/30/2017 | Diagnostic Radiology: PACS | Informatics Essentials for the Medical Physicist | 1 |
| 2017 AAPM Diagnostic Review Course | 07/30/2017 | Diagnostic Radiology: Magnetic Resonance | MRI Principles and Quality Characteristics | 1.5 |
| 2017 AAPM Diagnostic Review Course | 07/29/2017 | Diagnostic Radiology: Dosimetry | Patient and Fetal Dose | 1 |
| 2017 AAPM Diagnostic Review Course | 07/29/2017 | Diagnostic Radiology: Radiation Protection | Radiation Shielding Design | 1 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/16/2019 | Diagnostic Radiology: Computed Tomography | ACR Updates:Digital Mammography/CT/ | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/14/2019 | Diagnostic Radiology: Computed Tomography | Computed Tomography: Characterization and Methods | 1 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/14/2019 | Diagnostic Radiology: Computed Tomography | Computed Tomography: Processing and Analysis | 1 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/15/2019 | Diagnostic Radiology: Computed Tomography | Cone-beam CT | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/17/2019 | Diagnostic Radiology: Mammography | Contrast-enhanced and Functional Imaging of the Breast | 2 |

| | | | | |
|---|---|---|---|---|
| 2019 61st AAPM Annual Meeting & Exhibition | 07/18/2019 | Diagnostic Radiology: Magnetic Resonance | Design Elements and Performance Evaluation of MRI Radiofrequency Coils | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/15/2019 | Diagnostic Radiology: Mammography | From Breast Cancer Screening to Stereotactic Biopsy: A Technological, Clinical, and Patient Perspective | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/15/2019 | General Medical Physics: Radiobiology | Imaging of Tumor Response to Radiotherapy: New Results and Radiobiological Principles | 1.5 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/17/2019 | Diagnostic Radiology: Mammography | In Memoriam of Libby Brateman: Education, Licensure, Guidance and Mammography-Enhancing the Recognition of the Medical Physics Profession | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/16/2019 | Diagnostic Radiology: Magnetic Resonance | ISMRM-AAPM Joint Symposia: MR Safety Operations | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/16/2019 | Diagnostic Radiology: Mammography | Mammography and Other Breast Imaging | 1.25 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/15/2019 | General Medical Physics: None | Poster Viewing | 8 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/15/2019 | General Medical Physics: None | President's Symposium: Building Bridges | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/16/2019 | General Medical Physics: Regulatory/Accreditation | Session in Memory of Edward Nickoloff: Joint Commission Update: Satisfying the Joint Commission Fluoroscopy Requirements | 1.5 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/17/2019 | Diagnostic Radiology: Computed Tomography | Spectral and Photon Counting CT | 2 |
| 2019 61st AAPM Annual Meeting & Exhibition | 07/17/2019 | Diagnostic Radiology: Computed Tomography | Tailoring CT Protocol to Patient Age and Size with a Focus On Pediatric Patient | 1.5 |
| 2019 AAPM Online Continuing Education | 02/27/2019 | Diagnostic Radiology: Mammography | 2484-N Mammography 1 Contrast Enhanced Spectral Mammography | 1 |
| 2019 AAPM Online Continuing Education | 05/03/2019 | Diagnostic Radiology: Mammography | 2516-N How does c-view image quality compare with conventional 2D FFDM? | 1 |
| 59th AAPM Annual Meeting & Exhibition | 08/01/2017 | Diagnostic Radiology: Magnetic Resonance | A Concise Introduction to MRI | 2 |
| 59th AAPM Annual Meeting & Exhibition | 08/02/2017 | Diagnostic Radiology: Mammography | Advanced Breast Imaging: Stereotactic Breast Biopsy Updates and Contrast Enhanced Spectral Mammography | 1 |
| 59th AAPM Annual Meeting & Exhibition | 08/01/2017 | Diagnostic Radiology: Patient Safety | Best Practices in Pediatric Imaging | 1.25 |
| 59th AAPM Annual Meeting & Exhibition | 07/30/2017 | Radiotherapy: Image-guided | Cone Beam CT I | 0.92 |

| | | | | |
|---|---|---|---|---|
| 59th AAPM Annual Meeting & Exhibition | 07/30/2017 | Diagnostic Radiology: Computed Tomography | CT | 2 |
| 59th AAPM Annual Meeting & Exhibition | 07/30/2017 | General Medical Physics: None | General Poster Viewing | 6 |
| 59th AAPM Annual Meeting & Exhibition | 08/02/2017 | Diagnostic Radiology: Mammography | Implementation of the 2016 ACR Digital Mammography Quality Control Manual | 2 |
| 59th AAPM Annual Meeting & Exhibition | 08/02/2017 | Diagnostic Radiology: Computed Tomography | Low Dose CT: Where Do We Stand Now | 2 |
| 59th AAPM Annual Meeting & Exhibition | 07/31/2017 | General Medical Physics: None | Machine Learning in Medical Physics | 2 |
| 59th AAPM Annual Meeting & Exhibition | 08/02/2017 | Diagnostic Radiology: Mammography | MamTomoMBI | 1.5 |
| 59th AAPM Annual Meeting & Exhibition | 07/31/2017 | Radiotherapy: Imaging | MR in RT: MR Pulse Sequences and Image Acquisition Including Radiation Therapy Applications | 2 |
| 59th AAPM Annual Meeting & Exhibition | 08/01/2017 | Diagnostic Radiology: Mammography | Non-conventional Multi-source X-Ray Imaging: Cardiac, Breast Imaging and Cone Beam CT | 1.5 |
| 59th AAPM Annual Meeting & Exhibition | 08/01/2017 | Diagnostic Radiology: None | Photon Counting Detectors and Their Applications in Medical Imaging | 2 |
| 59th AAPM Annual Meeting & Exhibition | 07/31/2017 | General Medical Physics: Professional | Presidents Symposium: Connecting Our Pathways Unifying Our Profession | 2 |
| 59th AAPM Annual Meeting & Exhibition | 07/30/2017 | Radiotherapy: Imaging | Radiomics | 0.92 |
| 59th AAPM Annual Meeting & Exhibition | 07/31/2017 | General Medical Physics: None | Statistical Failings that Keep Us in the Dark Practical Statistics | 1.5 |
| 60th AAPM Annual Meeting & Exhibition | 07/31/2018 | General Medical Physics: Regulatory/Accreditation | ACR Updates - CT, MR, NMPET US | 1.5 |
| 60th AAPM Annual Meeting & Exhibition | 07/31/2018 | General Medical Physics: None | Advances in Imaging Technology | 2 |
| 60th AAPM Annual Meeting & Exhibition | 07/31/2018 | Diagnostic Radiology: Mammography | Breast Imaging | 2 |
| 60th AAPM Annual Meeting & Exhibition | 07/30/2018 | Diagnostic Radiology: Computed Tomography | CT Intensive I: Radiology Lite | 2 |
| 60th AAPM Annual Meeting & Exhibition | 07/30/2018 | Diagnostic Radiology: Quality Management | Display QC | 2 |
| 60th AAPM Annual Meeting | 07/29/2018 | General Medical Physics: None | General Poster Credits | 8 |

| | | | | |
|---|---|---|---|---|
| & Exhibition | | | | |
| 60th AAPM Annual Meeting & Exhibition | 07/30/2018 | General Medical Physics: None | Presidents Symposium: Beyond the Future | 2 |
| 60th AAPM Annual Meeting & Exhibition | 07/31/2018 | General Medical Physics: Professional | Role of the Diagnostic Physicist | 1 |
| 60th AAPM Annual Meeting & Exhibition | 07/30/2018 | Diagnostic Radiology: Dosimetry | Session in Memory of Phil Heintz: Patient Dose Calculations in Imaging - Fluoro, CT, and Fetal | 1.5 |
| | | | Total Released Credits: | 96.84 |

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# University of Rochester

*This Diploma witnesses that*

**Huanjun Ding**

*having fulfilled the established requirements for the degree of*

**Doctor of Philosophy**

*has in consequence thereof been admitted to this degree with all rights and privileges that pertain.*

*In official testimony of this action are affixed below the seal of this University and those signatures prescribed for such action by its Board of Trustees on May fifteenth, two thousand and ten.*

Bruce Jacobs
*Vice Provost and Dean*

UNIVERSITY OF ROCHESTER OFFICIALS SEAL
MELIORA
1850

Joel Seligman
*President*

# The American Board of Radiology

*Organized through the cooperation of the*
*American College of Radiology, the American Roentgen Ray Society,*
*the American Radium Society, the Radiological Society of North America,*
*the Section on Radiology of the American Medical Association,*
*the American Society for Radiation Oncology, the Association of University Radiologists,*
*the American Association of Physicists in Medicine, and the Society of Interventional Radiology,*
*the American Board of Radiology hereby certifies that*

## Huanjun Ding, PhD

*Has pursued an accepted course of graduate study and clinical work; has met certain standards and qualifications, including passing the examinations conducted under the authority of the American Board of Radiology, demonstrating to the satisfaction of the Board qualification to practice; and is therefore awarded the Board's certification in*

## Diagnostic Medical Physics

RSO Eligible

*Ongoing validity of this certificate is contingent upon meeting the requirements of Maintenance of Certification.*

*This diplomate of the American Board of Radiology is permitted to use the* DABR *mark to signify this certification.*

DABR

THE AMERICAN BOARD OF RADIOLOGY
INCORPORATED IN THE DISTRICT OF COLUMBIA
1934

President

Secretary-Treasurer

Executive Director

AMERICAN BOARD OF MEDICAL SPECIALTIES
1933
EXCELLENCE
ETHICS HONOR SKILL
OPIBUSQUE

Certificate No. P6888

Effective: May 19, 2018

MEDICAL COLLEGE OF WISCONSIN

# MTMI

Medical Technology Management Institute

THIS CERTIFIES THAT:

## Huanjun Ding

HAS SUCCESSFULLY COMPLETED THE SEMINAR ENTITLED:

## "20TH ANNUAL MAMMOGRAPHY UPDATE FOR PHYSICISTS"

October 1 - 2, 2016

held in Alexandria, VA

This seminar provides 15.75 hours of continuing education in mammography for medical physicists in compliance with the requirements of the Mammography Quality Standards Act of 1992 and FDA final rules (21CFR Part 900).
Credits to be awarded from CAMPEP.
This seminar includes 8 hours training on the surveying of digital mammography units, 3 hours on stereotactic breast biopsy units, and 2.5 hours on digital breast tomosynthesis (DBT).
This training includes the unique features of the Hologic, GE and Siemens DBT units.

18 hours of Category A credit for Radiologic Technologists have been approved by the ASRT.
ASRT# WID0106031 ( 10/03/16 )

Denise Lukasik - Sedmak, EdD, RT(R)(M)(MR)(CT)
Director of Education

**MTMI**
W140 N8917 Lilly Rd.
Menomonee Falls, WI 53051
*A continuing education division of Herzing University*

State of California—Health and Human Services Agency
California Department of Public Health

SONIA Y. ANGELL, MD, MPH
*State Public Health Officer & Director*

GAVIN NEWSOM
*Governor*

December 5, 2019

Huanjun Ding, Ph.D.
2501 Cherry Ave., Suite 270
Signal Hill, CA 90755

Dear Dr. Huanjun Ding:

Registration No.: MQA #0250
Initial Qualification Date: December 9, 2016
Expiration Date: January 13, 2023

**RENEWAL OF APPROVAL TO PROVIDE MEDICAL PHYSICS SUPPORT SERVICES (MAMMOGRAPHY) IN THE STATE OF CALIFORNIA**

Reference:

(a) Application for Renewal of Authorization to Provide Mammography Physics Support Services in the State of California received via U.S. mail on November 19, 2019.

Individuals performing mammography equipment evaluations or annual physics surveys must meet the initial and continuing requirements found in the regulations as set forth in Mammography Quality Standards Act Regulations, 21 Code of Federal Regulations Part 900, Final Rule, effective April 28, 1999, and California Code of Regulations, title 17, subchapter 4, group 3, article 4.5, effective July 18, 2003.

The California Department of Public Health (Department) has reviewed your application and supporting documentation that describes your qualifications to conduct mammographic equipment evaluations and surveys of mammography facilities and provide oversight of their quality assurance programs. Your combination of education and experience demonstrates that you meet the qualifications required by 21 Code of Federal Regulations 900.12(a)(3)(i) and California Code of Regulations, title 17, sections 30315.52 and 30315.60.

You are hereby authorized to provide mammography physics services in California. Although this authorization is valid for three years, your initial qualification date will remain unchanged. **You will be required to renew your authorization by January 13, 2023.** Please use this letter as evidence of your placement on the Department's "Approved Mammography Physicists" List.

Requirements for documentation of continuing education and continuing experience can be found in 21 Code of Federal Regulations 900.12(a)(3)(iii) and (iv) and California Code of Regulations, title 17, section 30315.52. This letter does not constitute evidence of meeting either requirement. Such documentation must be provided to each facility for which you provide mammography physics services. Each facility must maintain records to demonstrate that you meet these requirements.

Please be advised that it is your responsibility to notify the Department in writing of any change of name and/or address. If we are unable to contact you, we reserve the right to remove your name from the approved list.

If you have questions regarding this authorization or other areas where the Department may be of assistance, please contact Nawab Kahn at 916-440-7862.

For the Department,

AUTHORIZING:

Nawab Kahn
Associate Health Physicist
Registration Unit
Radiologic Health Branch

CONCURRING:

John Galicia, M.S.
Senior Health Physicist
Registration Unit
Radiologic Health Branch

# Therapy Physics, Inc.

*Diagnostic Radiology Physics Services*
*Radiation Protection Shielding Design*
*Radiation Oncology Physics Services*

**879 W 190th St., Suite 400** **(310) 217-4114**
**Gardena, CA 90248** **(310) 217-4118 (Fax)**
**www.therapyphysics.com**

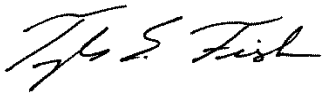
**Melissa C. Martin, M.S., DABR, FACR** **Tyler S. Fisher, M.S., DABR**
**Steven LaFontaine, M.S.** **Katie L. Mavinkurve, M.S., DABR**
**Mike Masiar, M.S., DABR** **Huanjun Ding, Ph. D.**


# Attestation Regarding Requirements of The Mammography Quality Standards Act

I, Tyler S. Fisher, M.S., DABR, attest that, to the best of my knowledge and my belief, the following information provided in this declaration is true and correct. I understand that FDA may request additional information to substantiate the statements made in this declaration:

> On September 15, 2016, I provided 3 hours of training to Huanjun Ding, PhD on the unique features of the Hologic Selenia Dimensions Tomosynthesis system at Orange Coast Women's Medical Group in Laguna Woods, CA. On January 4, 2017, I provided an additional 3 hours of training on the Hologic Selenia Dimensions Tomosynthesis system and the Affirm Up-right biopsy system at Newport Diagnostic Center in Newport Beach, CA. I am a fully qualified medical physicist who has been performing evaluations on Tomosynthesis systems since 2011. I am qualified for the Hologic Selenia Dimensions, GE Senoclaire, and Siemens Tomosynthesis systems. Dr. Ding has previously received 2.5 hours of Tomosynthesis training from MTMI and is now fully qualified to perform medical physics evaluations of Tomosynthesis systems.

I understand that knowingly providing false information in a matter within the jurisdiction of an agency of the United States could result in criminal liability, punishable by up to $10,000 fine and imprisonment of up to fine years, or civil liability under the MQSA or both.



Date Signed: 1/5/2017

Tyler Fisher, M.S., DABR
Certified Medical Physicist

# Therapy Physics, Inc.

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**Mike Masiar, M.S., DABR** **Huanjun Ding, Ph. D.**


# Attestation Regarding Initial Medical Physicist Qualification for ACR Stereotactic Breast Biopsy Program

I, Steven LaFontaine, M.S., DABR, attest that, to the best of my knowledge and my belief, the following information provided in this declaration is true and correct. I understand that ACR may request additional information to substantiate the statements made in this declaration:

> On October 19th, 2016, I provided 3 hours of training to Huanjun Ding, PhD on the unique features of the Hologic MultiCare Platinum stereotactic breast biopsy system at Saddleback Memorial Care Breast Center in Laguna Hills, CA. I am a fully qualified medical physicist who has been performing evaluations on Mammography, Tomosynthesis, and Stereotactic systems since 2015. Dr. Ding has performed hand-on stereotactic breast biopsy physics survey under my supervision. Dr. Ding has previously received 15.75 hours of initial Mammography and 2.5 hours of Tomosynthesis training credits from MTMI and is now fully qualified to perform medical physics evaluations of stereotactic systems for ACR Stereotactic Breast Biopsy Program.

I understand that knowingly providing false information in a matter within the jurisdiction of an agency of the United States could result in criminal liability, punishable by up to $10,000 fine and imprisonment of up to five years, or civil liability under the MQSA or both.

Date Signed: 9/30/2017

Steven LaFontaine, M.S., DABR
Certified Medical Physicist

*MAP ID Nos.* _____

*Each medical physicist who provides medical physics services at this facility* ***must verify that they meet FDA requirements*** *by completing a copy of this form.*

*Please print and complete this form. Signature dates must be within one year from the date of the most recent medical physicist's Annual Survey report. Original, electronic or faxed signatures are required and considered legally binding for this document. Stamped signatures are not acceptable. Complete all sections;* ***an incomplete application will delay your accreditation****.*

**PRIVILEGED and CONFIDENTIAL • PEER REVIEW**
**Code of Virginia 8.01-581.17**

## PERSONNEL • MEDICAL PHYSICIST

**1. Name:** Ding (*LAST NAME*) Huanjun (*FIRST NAME*) ____ (*MI*) Ph. D. (*DEGREE*)

**2. ACR Membership ID#:** *(optional)* _____

**3. Initial qualifying date** (earliest date qualified to do mammography physics. Medical physicists qualifying prior to the MQSA Interim Rules should check "prior to October 1, 1994."):

☐ prior to October 1, 1994 or *specify date after October 1, 1994* Dec (MO) / 2016 (YR)

**INITIAL QUALIFICATIONS**

**4. Do you meet FDA requirements for initial qualifications for medical physicists?** *(complete ONLY the column that pertains to you)*

| FDA Requirements | Initial Qualifications (Master's degree or higher) | | Alternative Initial Qualifications *must have met before April 28, 1999* (Bachelor's degree) | |
|---|---|---|---|---|
| Qualified as a medical physicist under FDA's interim regulations and retained that qualification by maintenance of the active status of licensure, approval, or certification? | *Not applicable* | | ☐[1]No ☐[2]Yes | |
| Board Certified by either the<br>1. American Board of Radiology (ABR) in Diagnostic Radiological Physics* (alone or combined with another sub-specialty), Radiological Physics, Roentgen Ray or Gamma Ray Physics or X-Ray and Radium Physics, or<br>2. American Board of Medical Physics (ABMP) in Diagnostic Imaging Physics<br>*also, effective 2011, Diagnostic Medical Physics | **Board** | **Year** | **Board** | **Year** |
| | ABR | 2018 | ABR | |
| | ABMP | | ABMP | |
| State licensed? | ☐[1]No ☒[2]Yes | | ☐[1]No ☐[2]Yes | |
| State approved? | ☐[1]No ☒[2]Yes | | ☐[1]No ☐[2]Yes | |
| Meet the following degree requirement in a physical science from an accredited institution? | ***Master's degree or higher***<br>☐[1]No ☒[2]Yes | | ***Bachelor's degree obtained before training and initial experience***<br>☐[1]No ☐[2]Yes | |
| Have no less than the following semester hours or equivalent of college undergraduate or graduate level physics? | ***20 semester hours or equivalent***<br>☐[1]No ☒[2]Yes | | ***10 semester hours or equivalent***<br>☐[1]No ☐[2]Yes | |
| Have the following contact hours of documented specialized training in conducting surveys of mammography facilities? | ***20 hours***<br>☐[1]No ☒[2]Yes | | ***40 hours***<br>☐[1]No ☐[2]Yes | |
| Have experience conducting surveys of at least one mammography facility and the following number of mammography units? (No more than one survey of a specific unit within a period of 60 days may be counted towards the total mammography unit survey requirement. If experience was acquired after April 28, 1999, it must be under the direct supervision of a qualified medical physicist). | ***10 units***<br>☐[1]No ☒[2]Yes | | ***20 units***<br>☐[1]No ☐[2]Yes | |

*MAP ID Nos.* _____

**New modalities: You must have received at least 8 hours of modality-specific training (e.g., full-field digital or screen-film) in surveying these systems before independently performing surveys on these systems. Have you received this training?** *(may be included in the above formal mammography education or obtained separately)*

| | | |
|---|---|---|
| **Full-field digital mammography** *(direct capture digital and/or computed radiography)* | ☐ 1 No | ☒ 2 Yes |
| **Screen-film mammography** | ☐ 1 No | ☒ 2 Yes |
| **Digital Breast Tomosynthesis (DBT)** | ☐ 1 No | ☒ 2 Yes |

**CONTINUING EXPERIENCE**

**5. How many mammography facilities and units have you surveyed over the previous 24-month period?**

**# facilities:** 14 **# units:** 28

**If less than 2 facilities and 6 units, are you in the process of requalifying?**

☐ 1 No ☐ 2 Yes

**CONTINUING EDUCATION**

**6. Have you earned at least 15 continuing education units in mammography in a 36-month period?** *(see FDA's Policy Guidance Help System for acceptable subject areas)*

☐ 1 No ☒ 2 Yes

**If you answered "No", are you in the process of requalifying?**

☐ 1 No ☐ 2 Yes

---

I certify that the information provided in Section H is true and correct.

**Executed on:** 01/17/2020
DATE

Huanjun Ding Digitally signed by Huanjun Ding DN: cn=Huanjun Ding, o=Therapy Physics, ou=Therapy Physics, email=huanjun@therapyphysics.com, c=US Date: 2019.08.23 13:29:14 -07'00'
SIGNATURE OF MEDICAL PHYSICIST

*Radcal Corporation*

**Ref No:** S125314

## Service Report

**Received:** 11-Feb-19

The equipment was tested for conformance with Radcal specifications using applicable Conformance test procedures. These procedures include inspection, operation with an x-ray machine and electrical test. The results are summarized below:

| Model Number | Serial Number | Description | Meets Mfr Spec | Spec limit (±) | Cal Date |
|---|---|---|---|---|---|
| AGDM+ | 48-0266 | Accu-Gold Digitizer Module | Yes | Pass/Fail | 25-Feb-19 |
| 10X6-3CT | 05-0845 | Ion Chamber | Yes | 4% | 25-Feb-19 |
| AGLS | 01-0165 | Accu-Gold Light Sensor | Yes | Pass/Fail | 25-Feb-19 |
| AGMS-DM+ | 43-0876 | Accu-Gold Multi-Sensor | Yes | Pass/Fail | 25-Feb-19 |

Service requested:

Perform conformance test, inspection and issue certificate.

Service performed:

Upon receipt, the equipment met manufacturer's specifications.
AGMS-DM+ was recalibrated for optimal performance and MQSA Certified Calibration report number 125314MAL.
Issued Certificate of Conformance.

426 W. Duarte Rd. Monrovia, CA 91016
Tel: (626) 357-7921 FAX: (626) 357-8863 email: service@radcal.com

Radcal

Ref No: S125314

# Certificate of Conformance

**Issued to:** Therapy Physics
2501 Cherry Ave .Suite 270
Signal Hill, CA 90755

| Equipment Description | Model | S/N |
|---|---|---|
| Accu-Gold Digitizer Module | AGDM+ | 48-0266 |
| Ion Chamber | 10X6-3CT | 05-0845 |
| Accu-Gold Light Sensor | AGLS | 01-0165 |
| Accu-Gold Multi-Sensor | AGMS-DM+ | 43-0876 |

The equipment identified above has been calibrated and tested using Radcal calibration and acceptance procedure PP1102, Radcal Quality Manual PP1007, Radcal Policy and Procedure PP1038, PI1045, PI1055 and other related documents. The equipment has been found to conform in all respects. These test procedures are designed to ensure that the tested equipment meets or exceeds all aspects of Radcal's published product specifications and requirements. Radcal is an ACLASS accredited calibration lab that meets the requirements of ISO 17025 and ANSI/NCLS Z540-1, cert number AC-1553.

All measurements performed during the testing employ equipment traceable to NIST or another recognized National Laboratory such as Physikalisch-Technische Bundesansalt (PTB).

For additional information please refer to Radcal's Product note: "The Importance of Conformance Testing". Radcal recommends revalidation in 12 months.

Certificate Issue Date 25-Feb-19

By: _____
Authorized Representative

Radcal Corporation
426 W. Duarte Rd. Monrovia, CA 91016
Tel: (626) 357-7921 FAX: (626) 357-8863 email: service@radcal.com

**Radcal®** CORPORATION
426 WEST DUARTE ROAD
MONROVIA, CA 91016 - USA
TEL: 626.357.7921 FAX: 626.357.8863
EMAIL: service@radcal.com
WEB: www.radcal.com

**Report No:** 125314MAL

# MQSA[1] Certificate of Calibration

**Issued To:** Therapy Physics
2501 Cherry Ave .Suite 270
Signal Hill, CA 90755

| Equipment Description | Model | S/N | Asset No. |
|---|---|---|---|
| Accu-Gold Digitizer Module | AGDM+ | 48-0266 | N/A |
| Accu-Gold Multi-Sensor | AGMS-DM+ | 43-0876 | N/A |

**Condition of Equipment As-Left:**
In Tolerance

Remarks: Prior to calibration, the equipment was examined and found to be in good condition and performed in accordance with the manufacturer's specifications with the exceptions listed below:
1. None

The equipment identified above has been calibrated and tested using standard Radcal calibration and acceptance procedures in accordance with Radcal Quality Manual PP1007, 4600131 - CertCal - Mammo Sensor.XLT Rev:G and technical requirements contained in the customer's order. These procedures are designed to ensure that the tested equipment meets or exceeds the stated specifications and the requirements of ANSI/NCLS Z540-1-1994.
[1]See MQSA Advisory Note attached.

All measurements performed during the testing employ equipment traceable to NIST or another recognized National Laboratory such as Physikalisch-Technische Bundesansalt (PTB). All calibration results included with this certificate were recorded at the time of measurement and shall not imply anything about the instrument's future stability. This must be determined from previous historical data.

Calibration Date: 25 February 2019
Date of Report 25 February 2019
Interval, as defined by MQSA: 12 months after date of calibration
Calibration Due: 25 February 2020

Calibration Tech.: AV

By: Authorized Reviewers
E. Macintosh / M. Bryant

**Radcal®** CORPORATION
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MONROVIA, CA 91016 - USA
TEL: 626.357.7921 FAX: 626.357.8863
EMAIL: service@radcal.com
WEB: www.radcal.com

**Report No:** 125314MAL

# MQSA(1) Certificate of Calibration

## Measurement Test Conditions

A Lorad M-II Mammographic X-ray generator equipped with Molybdenum target and a beryllium window x-ray tube was used as the source of the required mammographic x-ray beam. The generator ripple is less than 1 kV. Filters were added to produce the required beam (see data). The output of the generator was measured with a Radcal Dynalyzer invasive voltage divider. The HV-1 output was measured with an analog-to-digital converter with an uncertainty of ±0.1%. All reported kVp, mA and time measurement results have an uncertainty of better than ±1% at the 95% confidence level. Dose measurements were made using the substitution method and normalized with a reference mammographic dose diode. Reported dose and dose rate measurement results have an uncertainty of better than ±5% at the 95% confidence level.

## Conditions of Measurement

Temperature: 22.8 °C
Pressure: 100.17 kPa
Humidity: 34%

**NOTE:** All dose measurements were normalized to 22°C, 101.3 kPa.
"CF" = correction factor and True Reading = CF x Reading
All exposures were made with the DUT oriented perpendicular to the beam.
The beam is collimated to not expose the chamber stem (if applicable).

All Multi-Sensor readings were captured with: Accu-Gold 2.47.1

## Exposure Properties

| ISO Beam | Added Filtration (µm Mo) | First HVL (mm Al) | Set kV | Avg. Current mA | Avg. Time ms | Distance (Perp.) |
|---|---|---|---|---|---|---|
| **RQR-M-3** | 32.6 | 0.361 | 30.4 | 28.0 | 405 | 48 cm |

## Calibration Results

| Exposure # | Standard Dose mGy | DUT Dose mGy | DUT CF |
|---|---|---|---|
| 1 | 3.197 | 3.189 | 1.002 |
| 2 | 3.196 | 3.190 | 1.002 |
| 3 | 3.196 | 3.189 | 1.002 |
| Avg. | **3.196** | **3.189** | 1.002 |

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# MQSA Advisory Note

**Date:** 15 April 1999
**Revision:** 01 June 2018
**Topic:** FDA-MQSA "Final Rule for Quality Mammography Standards

The FDA-MQSA "Final Rule for Quality Mammography Standards" (effective 28 April 1999). requires that all air kerma measuring instruments used by medical physicists in their annual survey of a mammography unit. must be calibrated at least once every two years. and each time it is repaired. The instrument calibration must be traceable to a national standard and calibrated with an accuracy of ± 6% (95% confidence level) in the mammography energy range. Traceable to a national standard means an instrument is either calibrated at NIST or at a calibration laboratory that participates in a proficiency test with NIST at least every 2 years and the results of the proficiency test shows agreement within 3% of the national standard in the mammography energy range.

Radcal has met these requirements (ref: NIST Proficiency Report DG13398/18 dated 01 June 2018). The repetition of your calibration can wait until up to two years after the last calibration or until after the next repair. whichever comes first.

If your instrument was calibrated in Roentgens. air kerma is related to the exposure by the equation:

$$K = 2.58 \times 10^{-4} \cdot (W/e) \cdot X / (1-g)$$

Where:

K is air kerma in grays (Gy)

W/e is the mean energy per unit charge expended by electrons in dry air in Joules per coulomb (J/C): the value used at NIST is W/e = 33.97 J/C

X is the exposure in roentgens (R)

g is the fraction of the initial kinetic energy of secondary electrons dissipated in air through radiative processes: the value used at NIST is g = 0.00 for x-rays with energy less than 300 keV.