# INFORMATICS

**104TH Scientific Assembly and Annual Meeting**
Radiological Society of North America
McCormick Place, Chicago

**November 25–30**
Meeting.RSNA.org #RSNA18

RSNA® 2018
TOMORROW'S RADIOLOGY TODAY

## Accreditation and Designation Statements

The Radiological Society of North America (RSNA®) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The RSNA designates this live activity for a maximum of **99.25** *AMA PRA Category 1 Credits*™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

The Commission on Accreditation of Medical Physics Education Program (CAMPEP) has approved the direct transfer of *AMA PRA Category 1 Credit*™ to MPCEC on a credit-for-credit basis for medical physicists.

## 3D Printing SIG Kiosk

In addition to many hands-on courses, the Learning Center will include a 3D Printing SIG Kiosk featuring 3D prints, posters, and information and resources on how to get involved in the 3D printing medical community.

## Corporate Symposium

Please refer to each course description in the online program to determine if CME credit is offered for the session. Instructions on claiming credit will be provided during the course. CME credit for the Corporate Symposiums will be provided through a third party provider and not through RSNA.

Program information is subject to change. For the most up-to-date information, please use your Meeting App or visit *Meeting.RSNA.org*.

# Walk Through The Week

### Demonstrations

National Cancer Institute Image Perception Research Lab
**Session DM002. . . . . Learning Center, Hall D Lakeside Center East**

Common Data Elements
**Session IN050. . . . . IN Community, Learning Center**

RadReport 2.0
**Session IN051 . . . . . IN Community, Learning Center**

Computer Assisted Radiology and Surgery (CARS)
**Session IN053. . . . . IN Community, Learning Center**

The Society for Imaging Informatics in Medicine (SIIM)
**Session IN054. . . . . IN Community, Learning Center**

## SUNDAY, NOV 25, 2018

### 8:30–10:15 AM

### Plenary Sessions

Opening Session
**Session PS10 . . . . . Arie Crown Theater**

### 10:45 AM–12:15 PM

### Scientific Papers Sessions

Science Session with Keynote: Informatics (Artificial Intelligence in Radiology: Cutting Edge Deep-Learning)
**Session SSA12 . . . . . S406B**

### 11:00 AM–12:30 PM

### Educational Courses

Radiology Search and Analytics Software Tools for Clinical and Practice Quality Optimization (Hands-on)
**Course RCA11 . . . . . S401AB**

Teaching Congenital Heart Morphology with 3D Print Models II: Understanding Surgical Procedures in Congenital Heart Diseases with Illustrations and 3D Print Models (Hands-on)
**Course RCB11 . . . . . S401CD**

### 12:30–1:00 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Sunday Poster Discussions
**Session AIS-SUA . . . . . AI Community, Learning Center**

Informatics Sunday Poster Discussions
**Session INS-SUA . . . . . IN Community, Learning Center**

## 1:00–1:30 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Sunday Poster Discussions
**Session AIS-SUB . . . . . AI Community, Learning Center**

Informatics Sunday Poster Discussions
**Session INS-SUB . . . . . IN Community, Learning Center**

## 2:00–3:30 PM

### Educational Courses

Deep Learning in Radiology: How Do We Do It?
**Course RC153 . . . . . E450A**

Leveraging IT to Optimize Quality in Radiology
**Course RC154 . . . . . N229**

Technologies for Creating Educational Content and Teaching Files (Hands-on)
**Course RCA12 . . . . . S401AB**

RSNA Diagnosis Live Interactive and Mobile Device Integrated Audience Response: Tips, Tricks, and How to Get Started (Hands-on)
**Course RCB12 . . . . . S401CD**

Core Cybersecurity for Imaging Departments and Imagers: Threats, Vulnerabilities and Best Practices Part 1
**Course RCC12 . . . . . S501ABC**

## 4:00–5:30 PM

### Educational Courses

3D/VR/AR Imaging: Staying on the Cutting Edge of Brain Anatomy/Pathology (Hands-on)
**Course RCA13 . . . . . S401AB**

Introduction to 3D Medical Printing
**Course RCC13 . . . . . S501ABC**

# MONDAY, NOV 26, 2018

## 7:15–8:15 AM

### Educational Courses

Hot Topic Session: 3D Printing in Urologic Oncology
**Session SPSH20. . . . . E450A**

## 8:30–10:00 AM

### Educational Courses

Preparing your Radiology Practice and IT Department for Big Data
**Course RC253. . . . . S503AB**

Next Frontier in Imaging: Disease-specific Radiology Reports
**Course RC254. . . . . S402AB**

Deploying an Open-Source DICOM Archive and Web Viewer with OHIF and Orthanc (Hands-on)
**Course RCB21 . . . . . S401CD**

Getting Stuff Done: A Mindful Approach to Personal Productivity
**Course RCC21 . . . . . S501ABC**

## 10:30 AM–12:00 PM

### Educational Courses

Getting Stuff Done: A Hands-on Technology Workshop to Enhance Personal Productivity (Hands-on)
**Course RCB22. . . . . S401CD**

Using Imaging Informatics to Enable Patient Experience Improvements in Radiology
**Course RCC22. . . . . S501ABC**

## 10:30 AM–12:00 PM

### Scientific Papers Sessions

Science Session with Keynote: Informatics (Artificial Intelligence in Radiology: Bleeding Edge)
**Session SSC09 . . . . . E450A**

## 12:15–12:45 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Monday Poster Discussions
**Session AIS-MOA . . . . . AI Community, Learning Center**

Informatics Monday Poster Discussions
**Session INS-MOA . . . . . IN Community, Learning Center**

## 12:30–2:00 PM

### Educational Courses

Introduction to Machine Learning and Texture Analysis for Lesion Characterization (Hands-on)
**Course RCA23 . . . . . S401AB**

A Hands-on Introduction to Using the NIH/NCI's Cancer Imaging Archive (TCIA) (Hands-on)
**Course RCB23. . . . . S401CD**

Structured Reporting and the RSNA/ESR Reporting Initiative
**Course RCC23. . . . . S501ABC**

## 12:45–1:15 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Monday Poster Discussions
**Session AIS-MOB . . . . . AI Community, Learning Center**

Informatics Monday Poster Discussions
**Session INS-MOB . . . . . IN Community, Learning Center**

### 2:30–4:00 PM

**Educational Courses**

Creating Patient-Specific Anatomical Models for 3D Printing and AR/VR (Hands-on)
**Course RCA24** . . . . . **S401AB**

Clinical Decision Support: From Theory to Clinical Practice
**Course RCC24**. . . . . **S501ABC**

### 3:00–4:00 PM

**Scientific Papers Sessions**

Informatics (Artificial Intelligence in Radiology: More Cutting-Edge Deep Learning)
**Session SSE14** . . . . . **E353C**

### 4:30–6:00 PM

**Educational Courses**

Image to 3D Prints: How 3D Printing Works (Hands-on)
**Course RCA25** . . . . . **S401AB**

Intro to Statistics with R (Hands-on)
**Course RCB25**. . . . . **S401CD**

3D Medical Printing Applications I
**Course RCC25**. . . . . **S501ABC**

Special Interest Session: Demystifying Machine Learning and Artificial Intelligence for the Radiologist
**Session SPSI24** . . . . . **E451A**

## TUESDAY, NOV 27, 2018

### 8:30–10:00 AM

**Educational Courses**

Deep Learning & Machine Intelligence in Radiology
**Course RC353**. . . . . **S406A**

How Did I Miss That? Perceptual and Attentional Roots of Medical Errors
**Course RC354**. . . . . **N226**

RSNA Diagnosis Live Interactive and Mobile Device Integrated Audience Response: Tips, Tricks, and How to Get Started (Hands-on)
**Course RCB31**. . . . . **S401CD**

Interoperability: Imaging and Beyond - IHE, Standards, and the RSNA Image Share
**Course RCC31**. . . . . **S501ABC**

### 8:30 AM–12:00 PM

**Educational Courses**

Neuroradiology Series: Artificial Intelligence in Neuroradiology
**Course RC305**. . . . . **S406B**

## 10:30 AM–12:00 PM

### Educational Courses

Understanding the Critical Relationships of Quality, Experience, and Performance for Effective Imaging Services (Interactive Session)
**Course MSAS32** . . . . . **S105AB**

3D/VR/AR Imaging: Staying on the Cutting Edge of Brain Anatomy/Pathology (Hands-on)
**Course RCA32**. . . . . **S401AB**

RadLex: Semantics for Smart Workflows and Enterprises
**Course RCC32**. . . . . **S501ABC**

## 10:30 AM–12:00 PM

### Scientific Papers Sessions

Informatics (Artificial Intelligence in Radiology: No Pixels or Fake Pixels)
**Session SSG06**. . . . . **N230B**

Musculoskeletal (Machine Learning and Artificial Intelligence)
**Session SSG08**. . . . . **S102CD**

Physics (CAD/Machine Learning)
**Session SSG13** . . . . . **S404AB**

## 12:15–12:45 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Tuesday Poster Discussions
**Session AIS-TUA** . . . . . **AI Community, Learning Center**

Informatics Tuesday Poster Discussions
**Session INS-TUA** . . . . . **IN Community, Learning Center**

## 12:30–2:00 PM

### Educational Courses

Secure Image Sharing for Education and Patient Care in Radiology
**Course RCC33**. . . . . **S501ABC**

## 12:45–1:15 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Tuesday Poster Discussions
**Session AIS-TUB** . . . . . **AI Community, Learning Center**

Informatics Tuesday Poster Discussions
**Session INS-TUB** . . . . . **IN Community, Learning Center**

## 2:30–4:00 PM

### Educational Courses

Leveraging Machine Learning Techniques and Predictive Analytics for Knowledge Discovery in Radiology (Hands-on)
**Course RCA34** . . . . . **S401AB**

3D Medical Printing Technologies
**Course RCC34**. . . . . **S501ABC**

## 3:00–4:00 PM

### Scientific Papers Sessions

Informatics (Patient Safety, Data Sharing and Security)
**Session SSJ13** . . . . . **N230B**

## 4:30–6:00 PM

### Educational Courses

Mini-course: Image Interpretation Science - Computational Perception
**Course RC425** . . . . . **S103AB**

Deep Learning-An Imaging Roadmap
**Course RC453** . . . . . **E451B**

Enterprise Imaging for the Practicing Radiologist
**Course RC454** . . . . . **E263**

3D Printing Hands-on with Open Source Software: Introduction (Hands-on)
**Course RCA35** . . . . . **S401AB**

Querying, Parsing, and Extracting DICOM Data: Basic Functionality with Real-World Use Cases and Applications (Hands-on)
**Course RCB35** . . . . . **S401CD**

Don't Let MACRA and MIPs Kill Your Practice: How To Optimize Your Participation
**Course RCC35** . . . . . **S501ABC**

# WEDNESDAY, NOV 28, 2018

## 8:30–10:00 AM

### Educational Courses

Deep Learning: Applying Machine Learning to Multi-disciplinary Precision Medicine Data Sets
**Course RC553** . . . . . **E451B**

Next Generation Reporting: Informatics to Improve the Value of Reporting
**Course RC554** . . . . . **S504AB**

Getting Stuff Done: A Mindful Approach to Personal Productivity
**Course RCB41** . . . . . **S401CD**

Advanced Cybersecurity for Imaging Departments and Imagers: Threats, Vulnerabilities, and Best Practices
**Course RCC41** . . . . . **S501ABC**

## 10:30 AM–12:00 PM

### Educational Courses

From Texture Analysis to Deep Learning for Lesion Characterization (Hands-on)
**Course RCA42** . . . . . **S401AB**

Getting Stuff Done: A Hands-on Technology Workshop to Enhance Personal Productivity (Hands-on)
**Course RCB42. . . . . S401CD**

3D Medical Printing Applications II
**Course RCC42. . . . . S501ABC**

## 12:15–12:45 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Wednesday Poster Discussions
**Session AIS-WEA . . . . . AI Community, Learning Center**

Informatics Wednesday Poster Discussions
**Session INS-WEA . . . . . IN Community, Learning Center**

## 12:30–2:00 PM

### Educational Courses

Image to 3D Prints: How 3D Printing Works (Hands-on)
**Course RCA43 . . . . . S401AB**

AI, Radiomics, Text Mining, and More: 2018's Key Advances in Imaging Informatics
**Course RCC43. . . . . S501ABC**

## 12:45–1:15 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Wednesday Poster Discussions
**Session AIS-WEB . . . . . AI Community, Learning Center**

Informatics Wednesday Poster Discussions
**Session INS-WEB . . . . . IN Community, Learning Center**

## 2:30–4:00 PM

### Educational Courses

Advanced AI Tools for Radiologist-driven Mining of Imaging and Hospital-based Data Sets for Developing and Testing Hypothesis from Clinical Practice (Hands-on)
**Course RCA44 . . . . . S401AB**

Cinematic Rendering: Principles, Pearls, and Clinical Applications
**Course RCC44. . . . . S501ABC**

## 3:00–4:00 PM

### Scientific Papers Sessions

Informatics (Quantitative Imaging)
**Session SSM12 . . . . . E353B**

Informatics (3D Printing and Alt Realities - AR/VR)
**Session SSM13 . . . . . E353C**

## 4:30–6:00 PM

### Educational Courses

Creating Patient-Specific Anatomical Models for 3D Printing and AR/VR (Hands-on)
**Course RCA45 . . . . . S401AB**

Informatics Strategic Planning and Execution: How-To's and Lessons Learned
**Course RCC45** . . . . . **S501ABC**

# THURSDAY, NOV 29, 2018

## 8:00–9:00 AM

### Educational Courses

ASRT@RSNA 2018: Working Together to Create 3D Printed Models in Medicine
**Course MSRT51** . . . . . **N230B**

## 8:30–10:00 AM

### Educational Courses

The Impact of Artificial Intelligence on Radiology Training and Practice Around the World (Sponsored by RSNA Committee of International Radiology Education)
**Course RC616** . . . . . **E350**

Machine Learning and Artificial Intelligence: The Non-Interpretive Considerations
**Course RC653** . . . . . **E450A**

The Use of Business Analytics for Improving Radiology Operations, Quality, and Clinical Performance (In Association with the Society for Imaging Informatics in Medicine)
**Course RC654** . . . . . **S104A**

Intro to Statistics with R (Hands-on)
**Course RCB51** . . . . . **S401CD**

Virtual Reality and 3D Printing
**Course RCC51** . . . . . **S501ABC**

## 10:30 AM–12:00 PM

### Educational Courses

Hands-on Introduction to Social Media: Core (Hands-on)
**Course RCB52** . . . . . **S401CD**

Novel Discoveries Using the NCI's Cancer Imaging Archive (TCIA) Public Data Sets
**Course RCC52** . . . . . **S501ABC**

## 10:30 AM–12:00 PM

### Scientific Papers Sessions

Informatics (Reporting, Education Decision Support)
**Session SSQ11** . . . . . **S103AB**

## 12:15–12:45 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Thursday Poster Discussions
**Session AIS-THA** . . . . . **AI Community, Learning Center**

Informatics Thursday Poster Discussions
**Session INS-THA** . . . . . **IN Community, Learning Center**

## 12:30–2:00 PM

### Educational Courses

Leveraging Machine Learning Techniques and Predictive Analytics for Knowledge Discovery in Radiology (Hands-on)
**Course RCA53**. . . . . **S401AB**

Growing Your Business with Social Media: Tips and Tricks for Department and Practice Managers
**Course RCC53**. . . . . **S501ABC**

## 12:45–1:15 PM

### Posters and Exhibits: Discussions

Artificial Intelligence Thursday Poster Discussions
**Session AIS-THB . . . . . AI Community, Learning Center**

Informatics Thursday Poster Discussions
**Session INS-THB . . . . . IN Community, Learning Center**

## 2:30–4:00 PM

### Educational Courses

Reject Rate Analysis in the Digital Era: Leveraging Informatics to Enhance Quality Control in Radiography
**Course RCB54**. . . . . **S401CD**

IHE on FHIR
**Course RCC54**. . . . . **S501ABC**

## 4:30–6:00 PM

### Educational Courses

Platforms and Infrastructures for Accelerated Discoveries in Machine Learning and Radiomics
**Course RC753**. . . . . **E451A**

Value-based Imaging in the Accountable Care Organization Model
**Course RC754**. . . . . **N230B**

3D Printing Hands-on with Open Source Software Introduction (Hands-on)
**Course RCA55**. . . . . **S401AB**

Transpositions of the Great Arteries in Your Hands (Hands-on)
**Course RCB55**. . . . . **S401CD**

Patient-Centric Radiology
**Course RCC55**. . . . . **S501ABC**

# FRIDAY, NOV 30, 2018

## 8:30–10:00 AM

### Educational Courses

Want to Learn More About Imaging Informatics? Education, Resources and Certifications
**Course RC854**. . . . . **E260**

# Posters and Exhibits Discussions

*(CME is available when the author is present for discussion during the lunch period)*

## SUNDAY, NOV 25, 2018

### 12:30–1:00 PM

**Scientific Posters**

Effect of Inter-Observer Variability on Deep Learning in Chest X-Rays
**AI200-SD-SUA1 . . . . . Station #1**

### 12:30–1:00 PM

**Education Exhibits**

Applying Virtual and Augmented Reality to Radiology and Medicine
**IN007-EC-SUA . . . . . Custom Application Computer Demonstration**

Deep Learning-Based Texture Classification for Similar CT Image Retrieval
**AI152-ED-SUA2 . . . . . Station #2**

Improving Radiology Report Quality by Moving a Patient Forward Along a Clinical Spectrum
**IN009-EC-SUA . . . . . Custom Application Computer Demonstration**

Lessons Learned About Diagnostic Radiology Reporting from Practicing Interventional Radiology
**IN140-ED-SUA1. . . . . Station #1**

Real Time Detection and Labeling of Image Objects: YOLO (You Only Look Once), A Case Study (with Pitfalls) in Training and Running a Deep Network to Detect and Label Objects
**AI023-EC-SUA . . . . . Custom Application Computer Demonstration**

### 1:00–1:30 PM

**Scientific Posters**

Automated Foreign Object Detection in Chest X-Ray Images Based on Deep Learning
**AI201-SD-SUB1 . . . . . Station #1**

### 1:00–1:30 PM

**Education Exhibits**

3D Printing for Liver Surgery Planning: A Step by Step Guide
**IN142-ED-SUB2 . . . . . Station #2**

Blockchain Technology: Principles and Applications in Radiology
**IN141-ED-SUB1** . . . . . **Station #1**

Code2Vec: A Novel, Vector Space Model Representation of Radiology CPT Codes
**IN010-EB-SUB** . . . . . **Hardcopy Backboard**

Data-Driven Capacity Assessment of Nursing Bay Resources Shared Among Multiple Radiology Modalities
**IN013-EB-SUB** . . . . . **Hardcopy Backboard**

Deep Learning for Discovery of Latent Information in Contrast Free Cardiac CT Images
**AI025-EB-SUB** . . . . . **Hardcopy Backboard**

# MONDAY, NOV 26, 2018

## 12:15–12:45 PM

### Scientific Posters

Automatic Contrast Enhancement Detection on Head CT
**AI202-SD-MOA1** . . . . . **Station #1**

Prostate Cancer Lesion Segmentation and Gleason Score Prediction Using Multi-parametric MRI via Deep Residual Neural Network
**AI203-SD-MOA4**. . . . . **Station #4**

Semi-Automatic RECIST Labeling on CT Scans with Cascaded Convolutional Neural Networks
**AI204-SD-MOA6**. . . . . **Station #6**

## 12:15–12:45 PM

### Education Exhibits

Abdominal Segmentation for Body Composition Using Deep-Learning U-Net
**AI027-EB-MOA** . . . . . **Hardcopy Backboard**

An Artificial Intelligence-Based System for Triaging of Digital Mammography Exams
**AI026-EB-MOA**. . . . . **Hardcopy Backboard**

Application of Radiomics in Pancreatic Imaging – Current Status and Future Directions
**IN144-ED-MOA1** . . . . . **Station #1**

Deep Learning Techniques for Automated Segmentation of Diffuse Lung Disease Opacities on CT Images
**AI143-ED-MOA5** . . . . . **Station #5**

## 12:45–1:15 PM

### Scientific Posters

3D Context Enhanced Region-based Convolutional Neural Network for Universal Lesion Detection in a Large Database of 32,735 Manually Measured Lesions on Body CT
**AI208-SD-MOB3**. . . . . **Station #3**

Improving Radiology Appointment Wait Time Prediction with Machine Learning
**AI206-SD-MOB2** . . . . . **Station #2**

Lossless Compression of Segmented 3D Binary Data for Efficient Telemedicine Applications
**IN207-SD-MOB1** . . . . . **Station #1**

Recognition of Pediatric Long-Bone Fractures in the Setting of Variable Open Growth Plates by Convolutional Neural Networks
**AI209-SD-MOB4** . . . . . **Station #4**

Solid Renal Tumor Detection Using Convolutional Neural Networks
**AI205-SD-MOB1** . . . . . **Station #1**

### 12:45–1:15 PM

**Education Exhibits**
Right Diagnosis, Wrong Patient! A Picture is Worth a Thousand Images: The Value of Photo-Verification Technology
**IN145-ED-MOB2** . . . . . **Station #2**

## TUESDAY, NOV 27, 2018

### 12:15–12:45 PM

**Scientific Posters**
Are Patients Using Online Portals to View Radiology Reports?
**IN214-SD-TUA3** . . . . . **Station #3**

Deep Learning-Enabled Normalization of Reconstruction Kernel-Induced Variability of Emphysema Index in Low-Dose Lung CT
**IN211-SD-TUA2** . . . . . **Station #2**

Improving Computer Aided Classification of Breast Lesions on Mammograms Using Simulated Masses by Generative Adversarial Networks
**IN210-SD-TUA1** . . . . . **Station #1**

Synthetic PET Generator: A Novel Method to Improve Lung Nodule Detection by Combining Outputs from a Pix2pix Conditional Adversarial Network and a Convolutional Neural Network Based Malignancy Probability Estimator
**AI213-SD-TUA2** . . . . . **Station #2**

Transfer-Learning for Imaging-Based Lung Cancer Stratification
**AI212-SD-TUA1** . . . . . **Station #1**

## 12:15–12:45 PM

### Education Exhibits

RadSim: A Single Vendor-Neutral Portal of Real Life Experience to Its Users on All Generic and Specific Aspects of CT Scanning Including Principles of CT Hardware, Scan Parameters, Scanning Protocol, Dual Energy, Image Quality, and Radiation Dose

**IN006-EC-TUA . . . . . Custom Application Computer Demonstration**

## 12:45–1:15 PM

### Scientific Posters

Evaluating the Completeness of a Radiology Glossary for the Vocabulary of Breast Imaging Reports

**IN217-SD-TUB1 . . . . . Station #1**

Impact of Deep Learning-based CT Denoising on Normal Anatomical Structures in Low Dose Chest CT: FBP vs IRT vs Deep Learning

**AI215-SD-TUB1. . . . . Station #1**

Machine Learning for Identifying the Value of Digital Breast Tomosynthesis using Data from a Multicentre Retrospective Study

**AI216-SD-TUB2 . . . . . Station #2**

Patient Data Adapted Deep Learning for Multi-Label Chest X-Ray Classification

**AI218-SD-TUB3 . . . . . Station #3**

Radiologist Adoption of an Innovative Radiology Reporting Technique: The Inclusion of Active Hyperlinks to Key Image Findings in the PACS

**IN219-SD-TUB2. . . . . Station #2**

## 12:45–1:15 PM

### Education Exhibits

Computational Fluid Dynamics in Practice: An Illustrated "How-To" with Examples from CT Fractional Flow Reserve, Endothelial Shear Stress, Abdominal Aortic Aneurysms, and Congenital Heart Disease

**IN147-ED-TUB3. . . . . Station #3**

Designing and Performing State-of-the-Art Virtual Clinical Trials: Everything You Wanted to Know About VCTs but Dared Not Ask

**IN148-ED-TUB4. . . . . Station #4**

# WEDNESDAY, NOV 28, 2018

## 12:15–12:45 PM

### Scientific Posters

#Radiology: A 7-Year Analysis of Radiology-Associated Hashtags
**IN220-SD-WEA1** . . . . . **Station #1**

Accuracy of Using Google Translate to Convert Radiology Terminology from English to Chinese
**IN222-SD-WEA3** . . . . . **Station #3**

Comparative Analysis of 3D Printed Materials for Cortical Mastoidectomy Simulation
**IN224-SD-WEA5** . . . . . **Station #5**

Direct Validation of Quantitative MRI Cerebral Perfusion at Rest, Stress and Ischemia
**IN223-SD-WEA4** . . . . . **Station #4**

Integrating an Ontology of Radiology Differential Diagnosis with RadLex, SNOMED CT, and ICD-10-CM
**IN221-SD-WEA2** . . . . . **Station #2**

## 12:15–12:45 PM

### Education Exhibits

"Virtual" High-Dose Technology: Radiation Dose Reduction in Thin-Slice Chest CT at a Micro-Dose (mD) Level by Means of 3D Deep Neural Network Convolution (NNC)
**AI146-ED-WEA1** . . . . . **Station #1**

## 12:45–1:15 PM

### Scientific Posters

Characterization of Renal Solid Masses Using Multiparametric Diffusion-Weighted Imaging
**IN229-SD-WEB5** . . . . . **Station #5**

Detection of Pacemaker and Determination of MRI-conditional Pacemaker Based on Deep-learning Convolutional Neural Networks to improve the Patients' MRI Safety
**IN227-SD-WEB3** . . . . . **Station #3**

Development of Patient-Specific 3D Printed Model and Graft Guide for Open Surgical Repair of Thoracoabdominal Aortic Dissection
**IN228-SD-WEB4** . . . . . **Station #4**

Patient Identification on Chest X-Ray Using Artificial Intelligence
**IN226-SD-WEB2** . . . . . **Station #2**

Standardizing the Content and Format of Common Data Elements in Radiology
**IN225-SD-WEB1** . . . . . **Station #1**

### 12:45–1:15 PM

**Education Exhibits**

Quality Assurance for Crowdsource Annotation of the Chest X-ray 14 Dataset for the RSNA-STR Machine Learning Challenge: How We Did It

**AI149-ED-WEB1** . . . . . **Station #1**

## THURSDAY, NOV 29, 2018

### 12:15–12:45 PM

**Scientific Posters**

Markerless Tumor Tracking for Hepatocellular Carcinoma Using Fluoroscopic Imaging with a Deep Neural Network

**AI231-SD-THA2** . . . . . **Station #2**

Morphological Classification of the Cortical Bone Layer Using Deep Learning in Panoramic Radiography

**AI232-SD-THA3** . . . . . **Station #3**

Support Vector Machine Model for Stratification of Liver Stiffness using Clinical Data

**AI230-SD-THA1** . . . . . **Station #1**

Viewing Imaging Studies: How Patient Location and Imaging Site Affect Referring Physicians

**IN233-SD-THA1** . . . . . **Station #1**

### 12:15–12:45 PM

**Education Exhibits**

Emerging Approaches for Applying Artificial Intelligence in Neuroradiology

**AI150-ED-THA4** . . . . . **Station #4**

### 12:45–1:15 PM

**Scientific Posters**

CT Image Enhancement for Lesion Segmentation Using Stacked Generative Adversarial Networks

**AI234-SD-THB1** . . . . . **Station #1**

Readability of Neuroradiology CT and MRI Reports: Are They Over Patients' Heads?

**IN235-SD-THB1** . . . . . **Station #1**

### 12:45–1:15 PM

**Education Exhibits**

A Two-Stage Deep-Learning Scheme for Reducing Radiation Dose in Digital Breast Tomosynthesis (DBT)

**AI151-ED-THB2** . . . . . **Station #2**

Anatomical Borderline Structure Detection in Chest X-Ray by Deep Neural Networks
**AI024-EC-THB . . . . . Custom Application Computer Demonstration**

DeepGrow: A General-Purpose and Interactive Segmentation Tool Based on Deep Learning
**IN008-EC-THB . . . . . Custom Application Computer Demonstration**

# Education Exhibits

| SPACE NO. | EXHIBIT TITLE |
|---|---|
| AI021-EC-X | Methodology to Curate and Crowdsource Annotation of the ChestX-ray14 Dataset for the RSNA-STR Machine Learning Challenge: How We Did It |
| AI022-EC-X | The Next Step in Electronic Cleansing for CT Colonography: Unsupervised Machine Learning |
| IN001-EB-X | The Augmented 3D Printing Technology with Artificial Intelligence of Deep Convolutional Neural Net Based on Medical Images |
| IN002-EB-X | Workflow for Patient-Specific Disease Simulation from CT Images to 3D Printed Model in Thyroid Cancer |
| IN003-EB-X | Enhancing Understanding of Pathology with 3D Printed Prostate Cutting Guides |
| IN004-EC-X | 3D Printing and Virtual Reality Models Using DICOM Data, Inexpensive, Often Free and More Accessible Than You Think: An Introduction to Key Concepts |
| IN005-EC-X | Development Strategy of a Gamified Application for Teaching Chest X-Ray Interpretation |
| IN011-EB-X | Integrating Chatbots in Radiology Workflows: A Primer |
| IN012-EB-X | Design Methods of 3D Printed Patient Specific Vascular Phantoms for Device Testing, Endovascular Treating Planning, and Residency Training |
| IN100-ED-X | Robotic Process Automation: Go Beyond Artificial Intelligence in the Radiology Department |
| IN101-ED-X | Optimization of Imaging Parameters for Use in Medical Imaging Using the Deep Learning Technique |
| IN102-ED-X | Artificial Intelligence Use in Radiology: Development, Current Use, and Present-Day Controversies |
| IN103-ED-X | 3D Finite Element Analysis in Designing, Evaluating, and Improving Inferior Vena Cava (IVC) Filters |

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| **IN104-ED-X** | Automated Construction of the Optimal Structure for 3D CNN by Using the Bayesian Optimization |
| **IN105-ED-X** | Necessity of 3D Imaging in Robot Assisted Surgical Kidney Resection: An Optimal Way to Provide Accurate Images |
| **IN106-ED-X** | 3D Printed, Virtual Reality, or Augmented Reality Urological Cancer Models: What Works Best, When, and Why? |
| **IN107-ED-X** | Data Enhancement of Deep Learning for Medical Image Analysis: How Do We Increase Precisely Labeled Training Images? |
| **IN108-ED-X** | CF-SCRIbeR Study: Cystic Fibrosis Structured Radiology Report, Standardisation of CT Reporting in Patients with Pulmonary Cystic Fibrosis (CF) |
| **IN109-ED-X** | The First Step of Texture Analysis: How to Create Grey Level Co-Occurrence Matrix (GLCM) and Calculate Six Texture Measures |
| **IN110-ED-X** | How to Use PRISMA-DTA to Improve Your Imaging Systematic Review |
| **IN111-ED-X** | Machine Learning: Solutions to Shortcomings |
| **IN112-ED-X** | Learning from Gamers: Multi-Button Mouse, Keypad and AHK Scripts as Tools to Simplify Complex Repetitive Tasks to Improve and Personalize Workflow |
| **IN113-ED-X** | Machine Learning: A Theoretical Stepwise Primer for Radiologists |
| **IN114-ED-X** | Digital Atlas for Radiological Evaluation of Bone Age in Male and Female Gender - Execution of a Digital Tool Based on the Author's Books Greulich & Pyle and Theodore Keats |
| **IN115-ED-X** | Japan Safe Radiology 2018 |
| **IN116-ED-X** | 3-Minute Recipe for Deep Learning: Principle, Hardware, and Software |
| **IN117-ED-X** | What Radiologists Should Learn about Machine Learning? |
| **IN118-ED-X** | Managing Cognitive Load in Multimedia Presentations: Reducing Extraneous Processing |

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| IN119-ED-X | The Artificial Intelligence Journal Club: A Multi-Institutional Resident-Driven Web-Based Educational Initiative |
| IN120-ED-X | Historical Overview of Machine Learning (ML) and Deep Learning in Medical Image Analysis - What are the Sources of the Power of Deep Learning? |
| IN121-ED-X | Seeing Through the Eyes (and Visual Cortex) of a Machine: Convolutional Neural Networks at the Forefront of Machine Intelligence in Medical Imaging |
| IN122-ED-X | Concepts in Artificial Intelligence: A Primer for Radiologists |
| IN123-ED-X | Hands-On Machine Learning for Diffusion Tensor Imaging Assessment: From Theory to Practice |
| IN124-ED-X | Artificial Intelligence Using Neural Network Architecture for Radiology (AINNAR): The Decoding of the Technical Terms in AI |
| IN125-ED-X | How to Choose an Appropriate Neural Net Architecture to Solve Radiology Problems |
| IN126-ED-X | Practical Guide to Using PyTorch for Deep Learning Based Image Segmentation in Radiology |
| IN127-ED-X | Case Based Approach to Image Classification with PyTorch: A Primer for Novice Machine Learning Practitioners |
| IN128-ED-X | A Method for the Automated Generation of Patient-Specific Prostate Molds for Guiding Fresh Tissue Procurement and Validating MRI Lesion Localization |
| IN129-ED-X | Application of Deep Learning to Pancreatic Imaging - The Radiologists' Perspective |
| IN130-ED-X | Bringing Breast Imaging to Life: How and Why to Incorporate 3D Printing into Your Practice |
| IN131-ED-X | Decentralized Deep Learning on a Blockchain |
| IN132-ED-X | Supervised vs. Unsupervised Machine Learning for Radiologists in a Nutshell |
| IN133-ED-X | Artificial Intelligence for the Average Intelligence: A Practical Guide |

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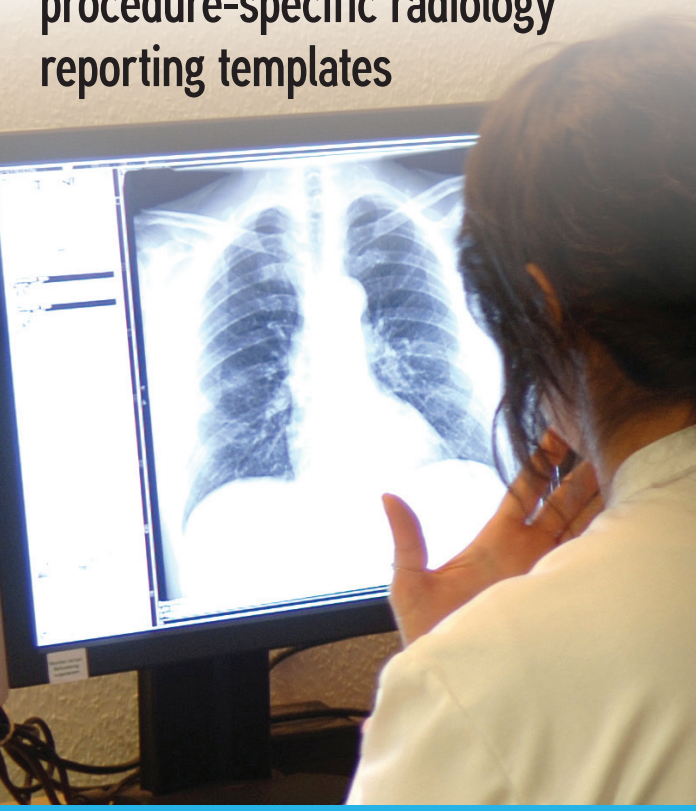
| **IN134-ED-X** | Five Free Radiology Hacks Every Practicing Radiologist Should Know |
| **IN135-ED-X** | Rise of Radiomics in CT: From Burden of Proof to Means of Implementation of Radiomics for Thoracic Oncologic Imaging |
| **IN136-ED-X** | Spatial Medical Imaging Using Virtual Reality, Augmented Reality, and Mixed Reality: How to Use and Evaluate the Effectiveness of Holographic Education |
| **IN137-ED-X** | Virtual Radiologists: Current Status of Deep Learning in Radiology and Its Future Trends |
| **IN138-ED-X** | Strengths, Weakness, Opportunities and Threats: SWOT Analysis of Machine Learning for Radiology Applications |
| **IN139-ED-X** | Designing, Engineering and Building a Custom and Versatile Liver Phantom for Multi-Energy CT using a 3D Printer: Challenges, Pitfalls, and Costs |

# RadReport 2.0

## RSNA's library of detailed procedure-specific radiology reporting templates



RSNA's reporting initiative is improving radiology reporting practices by building a library of clear and consistent report templates.

More than **5 million** views and downloads to-date, with over **250** templates in **20** radiology subspecialties and **8** languages available.
Visit the Informatics Community, Learning Center, Hall D or *RadReport.org* to learn more.

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