

Association of Collegiate Educators in Radiologic Technology

47th Annual Conference

February 9-11, 2022

Abstracts

1. R(AI)diology: Beginner's Guide to Artificial Intelligence and Its Role in Radiology

Artificial intelligence (AI) is a futuristic technology only used in the plots of science-fiction movies, or is it? This presentation begins with a review of the foundations of AI, what it is, and the general idea of how it works as well as the current state of AI in common public use, its use in healthcare, and its use specifically in radiology. For example, its role with identifying and confirming cases of COVID-19 based on radiographic image data will be discussed. The science and technology of AI continue to make increasing gains in functionality, but ethical/legal implications may be quickly outpaced by these advancements. The implications of AI are profound, and it may change the landscape of not only radiology, but also of future healthcare delivery as a whole.

3. Benefits of Adopting Meditation, Mindfulness, and Positive Mindsets

Adopting and devoting time to meditate, to practice mindfulness, and to develop positive mindsets has many reported benefits. Research indicates the benefits include reduced anxiety and stress, improved focus and attention, and increased motivation and momentum.

4. ARRT Continuing Quality Requirements

As the time approaches for more individuals to get started on the continuing qualifications requirements, or CQR for short, the interest in learning more about the requirements has increased. This presentation will provide you with the information you need to know.

5. Impact of Virtual Scenario-Based Branching Simulations Among Radiology Program Students

The presentation will explore the impact of using an innovative teaching method for teaching advanced modalities in a fully online environment using eAuthoring software and tools that integrate into current LMS platforms. Research into the impact of virtual scenario-based branching simulations will be discussed in regard to radiology program students. This teaching method was designed and implemented in CT and MRI program courses at MSU. It is a virtual 2D role-playing scenario in which the student plays the role of a new technologist in an advanced imaging suite. This provides students an opportunity for experiential learning online, and the branching design, in which the patient and storyline evolves with the learner's decisions requires the learner to think critically and draw upon previous knowledge to make decisions about what should be done. Each decision the student makes changes the direction of the stories and the outcomes of the virtual patients.

6. United in Diversity

Our country has experienced many feelings of division and exclusion. As professionals, we work with diverse persons and patients. This talk is meant to address bias, challenge assumptions, enhance objectivity, and broaden perspectives.

7. Preparing for the Certification Exam

Assessing the content of the certification exam and one's own strengths and weaknesses are keys to a successful outcome. This presentation will lead the student through a process designed to encourage self-reflection, knowledge of test content, and the mechanics of test taking. Students will learn strategies for concentrating their study time on specific areas of test content. The test day and test center scenario will be simulated to establish student familiarity with the event.

8. Accreditation During a Pandemic

The COVID-19 pandemic presented unique issues never addressed previously by institutions of higher education and programmatic accreditors. This 50-minute session will address how the JRCERT dealt with challenges over the past two years. It will focus on benefits and challenges of accreditation while working remotely.

9. From Roots to Results: Tips to Help Them Bloom and Flourish

One of the biggest challenges facing Clinical Instructors is how to engage in effective feedback. Based on publications from Bene Brown, an American researcher, storyteller, professor, lecturer, author and podcast host, we will discuss the nuances and challenges of feedback. There are many methods that can overcome those challenges and obstacles and will be highlighted. It is also a time of self-reflection for Clinical instructors to determine if they are being effective and help support the Clinical Instructor experience. The focus is to learn ways to overcome feedback hiccups and to help students Bloom and Flourish as technologists.

10. Graduation...Now What?

This presentation will discuss tips on resume writing, interviews and email etiquette. It will also discuss the do's and don'ts of social media and how to properly present themselves for employment or even furthering their education. Students are lacking this knowledge and need to know this information in order to be able to enter the workforce successfully.

11. Compliance with the JRCERT Standards: Avoiding Common Pitfalls

This discussion will address the 2021 Standards for an Accredited Educational Program and how to maintain compliance. Commonly cited objectives and suggestions for how programs may maintain compliance will be reviewed. Participants will have the opportunity to gain information from the JRCERT Executive Staff.

12. The ‘Joint’ Effort

This presentation will focus on case studies of common musculoskeletal injuries and how they appear. The presenters will review the anatomy, etiology, and image indicators of joint pathologies within multiple modalities.

13. Caldwell, Towne, and Waters: A Review of Methods

This presentation will include a review of Caldwell, Towne, and Waters as imaging methods. Topics will include cranial positioning lines and topography, positioning, and image evaluation.

14. ASRT Curriculum Revision Projects and Artificial Intelligence Concepts

To keep curricula documents up to date, curriculum revision work groups follow a philosophy with four key concepts. This presentation aims to address how to assure a finished curriculum document is relevant, representative, adaptable, and predictive. The speaker will discuss the process of inspecting the existing document, researching data for change management, and exchanging suggestions for proposed curriculum improvements. Additionally, the lecturer will speak to why and how topics are removed to renovate space as a means of introducing newer and sometimes more advanced content areas such as artificial intelligence, to build on the foundation of knowledge for schools aiming to expand their programs. Lastly, the presenter will discuss basic artificial intelligence concepts that have the potential to appear in revised curricula document sooner rather than later.

15. Creative Instruction Strategies to Promote Effective Learning

Being an expert in the field of instruction does not necessarily mean instructors are well-equipped to teach others. In this course, we will discuss effective teaching strategies and various ways to convey information. This class will outline a brief review of the science of pedagogy and examine creative ideas to promote successful learning. The presentation will outline ways to teach complex medical concepts in ways to encourage learning. Five fundamental pedagogical approaches, including constructivism, integrative approach, collaborative approach, inquiry-based approach, and a reflective approach, will be discussed and related to teaching healthcare topics. The presentation will outline the importance of content structure to promote learning. Other considerations will include basic techniques like the SQR3 method for engaged academic reading and some advanced techniques such as problem-based learning and the Socratic method. The presentation objective is, providing faculty ideas for presenting information that will engage student learning.

16. Forensic Radiology

Forensic Radiology is a field of medical imaging that provides valuable service to the community via data-driven techniques in imaging science. The interprofessional aspects of this subspecialty differ from those required of traditional radiology, and thus invoke collaboration with other professionals outside of the healthcare field. In working with law enforcement, pathologists, and anthropologists, various medical imaging modalities afford the examiners the opportunity to examine people and remains in order to gain more information about their condition. Through the use of virtual autopsy, remains can be examined without the need for invasive techniques, providing a non-invasive alternative to traditional autopsy. Textbook authors and the ASRT now recognize Forensic Radiography as an

educational pathway and a specialized training area. This new and topical subject is essential for educators and very interesting to educators, technologists, and students alike.

17. Educational Impact of the COVID-19 Pandemic: Lessons Learned

The researcher will discuss the study which was conducted to evaluate the educational impact of the COVID-19 pandemic on radiologic technology educators. A cross-sectional survey design was conducted to evaluate virtual technology integration and intention for continued use in the radiologic technology classroom. The survey measured the constructs of behavior, perceived behavioral control, perceived ease of use, perceived usefulness, attitude, and continuance intention. The study also evaluated pre- and post uses of virtual technology and perceived barriers. Lastly, the study also contained a pseudo-qualitative component to add meaning to the quantitative data.

18. CT Imaging Capabilities for GI Bleeding

Gastrointestinal (GI) bleeding is the most common cause of hospitalization of all gastrointestinal diseases. Without diagnosis and treatment, increase in morbidity and mortality can occur. Effective treatment demands timely and accurate diagnostic testing. Computed tomography (CT) is gaining popularity in imaging GI bleeding because it can be acquired quickly to distinguish active bleeding from other emergent non-bleeding bowel diseases. CT's ability to yield critical information in the presence, location, and severity of GI bleeding provides clinicians with valuable information when deciding an individualized, optimized treatment plan. Recent technological advancements have helped reduce the radiation exposure associated and contrast media volume required with these CT GI protocols making it a potential first-line tool for evaluating GI bleeding.

19. The (Radiation) Safety Dance

This session will review all of the material from the updated content specifications outline (2022) for the safety section of the ARRT exam. Topics include radiation physics, radiobiology and radiation protection. Topics also include biological aspects of radiation, minimizing patient exposure, personnel protection, and radiation exposure and monitoring. Also, the new shielding guidelines will be included.

20. Learning Theories and Theorists

Most educators in the Imaging Sciences teach very well. However, most of them have not had formal educational training such as classroom management and learning theories. They simply teach the way they were taught. This lecturer hopes to inform faculty that there is more than one way to teach. This will be accomplished by introducing several pedagogical theories and theorists. The faculty can then objectively make a decision to change their method of teaching or combine theories to best fit their classroom personality.

21. Overcoming Multicultural Obstacles in a Radiography Program

Radiography is one of many healthcare professions teeming with cultural diversity. Cultural diversity can include race, gender, religion, age, socioeconomic and educational backgrounds, and physical and mental disabilities. These cultural differences can create obstacles that an instructor within a radiography program must face. Radiography instructors work with students in a classroom setting as well as in a clinical environment. Each of these settings pose different situations which require culturally sensitive instructional techniques to ensure a student meets the learning objectives set within the program. Expectations that are placed on students for both didactic and practical training often gets misinterpreted depending on the background of a student. Radiography programs need to recognize the need for instructors to reflect on their own cultural identity in order to make a more culturally sensitive and safe learning environment for such a diverse educational program.

22. Compassionate Leadership as a Healthcare Professional

The Speaker will present and discuss topics regarding leadership skills that will assist the healthcare provider in delivering compassionate care while working with patients. Discussion topics will include communication tools that will promote a more positive experience between the patient and radiographer, as well as provide insight on communication that may be interpreted negatively by the patient. The audience will learn from experiences the Presenter has had both as a radiographer and a patient that will help them determine the most appropriate ways to create a positive environment for the patient.

23. Content Delivery Tools

Program faculty must find ways to uniquely teach concepts. One way we can aid students in learning how to synthesize in writing is by using the synthesis matrix. The matrix is a super-outline and guides students in combing through articles, looking for common points between sources to develop themes for their subject. Another unique way to deliver content is by using a Pecha Kucha (PK), which is a 6-minute, dynamic PowerPoint presentation with voiceover. The PK can be used in discussion boards, where students create a PK on a concept of their choice; their peers listen to the PKs, ask questions, clarify points, etc. to facilitate discussion. Instructors can also use this tool to provide brief chunks of content for students to review before class, thus facilitating in-class interaction and activities.

24. The Development of a Scale to Measure Professionalism for Radiology

As a follow-up of the 2020 article and 2018 presentation at the ACERT Annual Meeting, a scale to measure professional values in radiologic technology was developed and evaluated. The process is presented. The scale was statistically tested to be utilized by radiologic technologists and educators to encourage patterns of behaviors, which are internal motivations to do the right thing. Currently, the profession is guided by two documents, the practice standards and the standards of ethics. The Standard of Ethics provides guidance on what it means to be qualified and to promote a culture of ethical behavior within the profession. The Practice Standards define the practice and establish criteria to determine compliance. These codes have been embraced by the radiologic technology community as guides to professional behavior and decision making for the profession. Through research conducted during my doctoral program professional values of in radiologic technology. The scale will allow educators to measure professional values in students.

25. And You Thought Physics Had to be Boring

Though student radiographers use these principles and equipment every day, many do not stop to think about their overall impact on imaging. This fun and lively review of physics takes those attending through a review of the art and science of medical radiography. Attendees will comprehend key concepts of x-ray physics in a new way making them more understandable and useable in the clinical environment.

26. Hidden Bias in your Courses? Using Universal Design for Learning

This interactive presentation is designed to help both program and clinical faculty recognize possible biases in their course materials and build a more inclusive educational environment. Helpful tools and resources related to Universal Design for Learning (UDL) will be shared with the audience.

27. The Skeletal Outline: Effective Note Taking Practices

Students today normally approach note taking in 2 ways: write down every word the instructor says or take no notes during the lecture. Those who write everything down have difficulty sifting through the important concepts and become overwhelmed. Those who take no notes often study only important concepts to prepare for their upcoming tests missing some of the clarifying ideas which help to illustrate the entire picture. In this lecture we will discuss the benefits of providing a skeletal outline for your students to increase engagement during lecture, retention of material, and achievement of learning outcomes.

28. Comparing Diagnostic Evidence of Cholelithiasis and Cholecystitis Across Multiple Modalities

Abdominal pain is one of the most common symptoms patients present to the Emergency Departments. Many of those patients have severe right upper quadrant (RUQ) pain. Differential diagnoses for right upper quadrant pain include biliary, colonic, hepatic, pulmonary, and renal conditions. Biliary cholecystitis, cholelithiasis are the most common suggested diagnoses. Evaluating right upper quadrant pain requires patient history, physical examination, laboratory tests, and imaging studies. The RSNA recently published an article with a RUQ algorithm which will be presented. A comparison of the differences, strengths, and limitations of each diagnostic imaging procedure will be discussed and will include appropriate images including; ultrasonography, radionuclide imaging, and endoscopic retrograde cholangiopancreatography (ERCP). Conclusion will include a brief description of the treatment of cholelithiasis and cholecystitis

29. Strategies to Increase Scholarly Productivity in Medical Imaging

One way that medical imaging and radiation therapy professionals can advance the profession is by engaging in scholarly practices. This session presents results from an original research study funded by the ASRT Foundation that compared scholarly activities among medical imaging and radiation therapy, nursing, respiratory care, medical laboratory science, and dental hygiene educators. Methods to increase scholarly productivity specific to the medical imaging and radiation therapy profession will be explored. Specifically, the presenters will share strategies that assist with selecting a topic, analyzing literature, conducting research, writing grant proposals, writing for publication, and presenting at conferences. Common pitfalls and challenges will also be discussed.

30. Lessons Learned: Healthcare Students Acting as Victims in Disaster Drill Exercise

A mixed-method design was employed in this study. A survey was administered to students playing victim following their participation in a community full-scale mass casualty disaster drill. The quantitative and qualitative data will be presented. Data demonstrated participants were made aware of their limited knowledge concerning necessary patient care skills needed during a mass casualty incident (MCI). Participants gained new knowledge of how community partners work together in response to an MCI and the different roles each play. Additional take-away lessons revealed an increase in patient empathy. Both qualitative and quantitative questions highlight the students' emotions and behavioral reactions as a result of acting as a trauma patient in the disaster drill. The full-scale disaster drill and results of this study support using simulation as an effective active learning tool that exposes students to the skill set needed when caring for victims of a disaster in their future professional practice.

31. Let's Talk Digital Terminology!

Since the advent of digital radiography, both CR and DR, students, faculty, and staff radiographers have used film/screen terminology to explain digital imaging functions and outcomes. This presentation will attempt to clear confusion regarding image quality, equipment, and image display terminology

32. How to be an Effective Educator

Covey's 7 Habits of Highly Effective People translates across all careers, including those in medical imaging. These principles are best implemented early in a person's career. The attributes of highly effective people are powerful lessons in personal change, yet can be applied to social situations as well. Educators will explore strategies for success, interpersonal communication and interactions, and being a more effective educator, ultimately leading to facilitating more effective students. Applications as they pertain to planning, implementing, and evaluating growth are explored, with skills-building activities that help faculty to apply the habits to their courses and curriculum.

33. Patient Care: ARRT Ready, Set, Go!

The presentation will be a comprehensive review of all content covered in the ARRT radiography patient care section. The focus will be patient interactions and management regarding, ethics, communication, physical assistance and monitoring, medical emergencies, infection control, disposal of hazardous material and pharmacology.