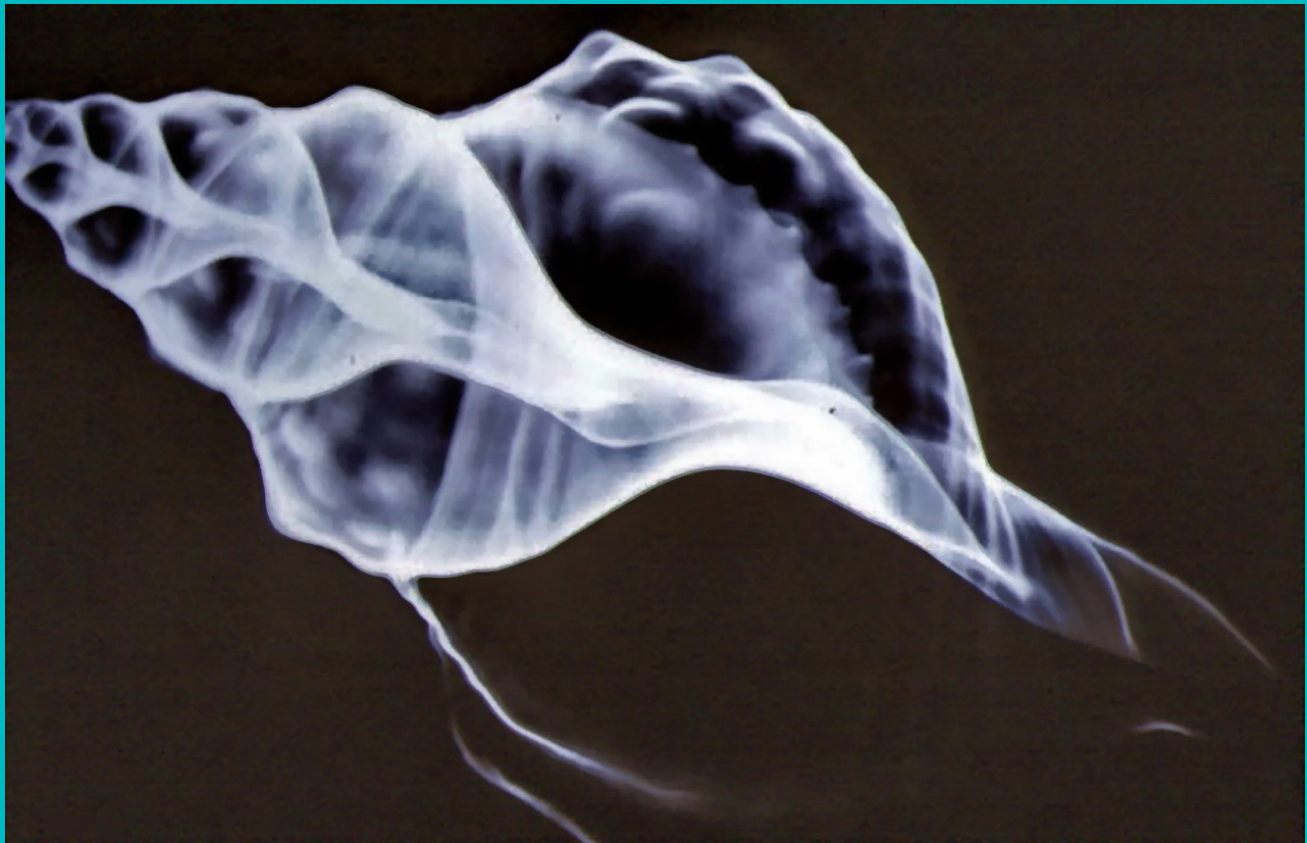


# The Rotating Anode

SUMMER 2022



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## Table of Contents

Board of Directors .....	2	Post-Convention Executive	
Committees .....	2	Committee Minutes .....	4
Pre-Convention Executive		Post-Convention Board of	
Committee Minutes .....	3	Directors Minutes .....	4
Pre-Convention Board of		Second-place Essay .....	5-6
Directors Minutes .....	3	Memberplanet .....	7
Save the Date .....	3	Scholarship Application .....	8-9

# KSRT BOARD OF DIRECTORS

## Chair of the Board

Harmony Ibarra, RT(R)(CT)  
hiradct@gmail.com

## President

Gale Brown, EdS, RT(R)(CT)  
galeb@labette.edu

## Past President

Katilyn Slaton, BS, RT(R)(MR)(CT)  
slatonk8@gmail.com

## President-Elect

Denise Orth, MS, RT(R)(M)  
ksrt.exsec@gmail.com

## Vice President

Lisa Eddy, RT(R)  
lmeddy04@yahoo.com

## Secretary-Treasurer

Jason Elliott, MHA, CRA, RT(R)(CT)  
jason.elliott@cleveland.edu

## Director at Large

Kirsten Oswald  
Kirsten.Oswald@washburn.edu

## Education Co-Chairs

Becky Dodge, PhD, RT(R)(T)  
becky.dodge@washburn.edu  
Shanna Bennett, RT(R)  
borednknasas@att.net

## Professional Development Chair

Tara Rohn, BS, RT(R)(CT)(MR)  
tkrohn@fhsu.edu

## ASRT Senior Delegate

Toni Caldwell, MHA, RT(R)  
mmcaldwell@aol.com

## Area Representative, East

Vacant

## Area Representative, Central

Kyle Ibarra, RT(R)(MR)  
ibarrakb@gmail.com

## Area Representative, West

Kelly Denton, RT(R)(M)  
dentonkellyann@gmail.com

## Student Representative

Zoey Harrison  
zoey.harrison@washburn.edu

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# KSRT COMMITTEE CHAIRS AND APPOINTMENTS

## Bylaws

Katilyn Slaton, BS, RT(R)(MR)(CT)  
slatonk8@gmail.com

## Fellows

Denise Orth, MS, RT(R)(M)  
ksrt.exsec@gmail.com

## Legislative

Toni Caldwell, MHA, RT(R)  
mmcaldwell@aol.com

## Membership

Lisa Eddy, RT(R)  
lmeddy04@yahoo.com

## Profess. Development Vice Chair

Katilyn Slaton, BS, RT(R)(MR)(CT)  
slatonk8@gmail.com

## Media Coordinator

Jen Smith, BSJ, RT(R)(M)(CT)  
jen.smith.rtr@gmail.com

## Social Media Co-Coordinator

Toni Caldwell, BA, RT(R)  
mmcaldwell@aol.com

## Nominations

Vacant

## Scholarship

Melinda Chiroy, RT(R)(T)(CT)  
melindachiroy@yahoo.com

## Historian

Kyle Ibarra, RT(R)(MR)  
ibarrakb@gmail.com

## Editor, *The Rotating Anode*

Jen Smith, BSJ, RT(R)(M)(CT)  
jen.smith.rtr@gmail.com

## Executive Secretary

Denise Orth, MS, RT(R)(M)  
ksrt.exsec@gmail.com

## Student Interns

Vacant

Editor: Jen Smith  
BSJ, BS, RT(R)(M)(CT)

Interested in contributing to  
the *Anode*?  
Contact: Jen Smith  
Email:  
jen.smith.rtr@gmail.com  
(Please put *Anode* in the subject  
line)

Official Publication of the  
Kansas Society of Radiologic  
Technologists  
Denise Orth, Executive Secretary  
1702 Mermis Ct.  
Hays, KS 67601

# PRE-CONVENTION EXECUTIVE COMMITTEE MINUTES

3:15 p.m. March 31

Lawrence

**Members present:** Harmony Ibarra, immediate past president; and Gale Brown, president-elect.

**Call to order:** The meeting was called to order at 3:15 p.m.

**Quorum:** There is no quorum.

**Financial report:** Denise presented

the year-end financial report through March 31. The report showed income of \$23,478.28 and expenses of \$21,596.54. The net worth report showed a checking account balance of \$15,808.75 and certificates of deposit worth \$45,077.52 for a total net worth

of \$60,886.27.

**Old business:** None.

**New business:** None.

**Announcements:** The next meeting is post-convention on April 1.

**Adjournment:** The meeting was adjourned at 3:30 p.m.

# PRE-CONVENTION BOARD OF DIRECTORS MINUTES

3:30 p.m. March 31

Lawrence

**Voting members present:** Gale Brown, president-elect; Harmony Ibarra, immediate past president and education co-chair; Alexa Ritter, vice president; Ronda Sunnenberg, chair of the board and east area representative; Tara Rohn, professional development chair; Jason Elliott, secretary-treasurer; Becky Dodge, education co-chair; Kirsten Oswald, student representative; Kelly Denton, west area representative; Kyle Ibarra, central area representative and historian; Toni Caldwell, ASRT senior delegate and legislative chair.

**Non-voting members present:** Denise Orth, executive secretary; Jen Smith, editor of *The Rotating Anode*; Melinda Chiroy, scholarship chair.

**Call to order:** Gale called the meeting to order at 3:30 p.m.

**Quorum:** Jason established a quorum.

**Approval of the consent agenda:** Ronda moved to approve the consent agenda, Becky seconded. Motion passed.

**Approval of minutes:** Harmony moved to approve the minutes from the last meeting, Toni seconded. Motion passed.

**Reports:** Reports were emailed to members ahead of the meeting.

**Financial report:** The financial report was discussed during the Executive Committee meeting, and all voting members were present for that discussion.

**Old business:**

**ASRT Financial Assistance Program:** \$5,000 was received from the program, and it will be used for website development.

**1861 Consulting:** A refund was received for a month not under contract during the last period. President Katilyn Slaton renewed the contract.

**Website:** The board voted via email to not renew the Weebly website contract in May. After convention a contract for website development by Cara Myers will be written and voted on by the board.

**CEUs:** The board also discussed the five-state CEU collaboration.

**New business:**

**Legislative:** Toni discussed practice standard changes. She is going to send changes to the board in sections for feedback. The final product will be submitted later. A formal letter of support for Brian Ralph to join the Rad Council was sent to the Kansas Board of Healing Arts.

**Convention:** Before the pre-convention meeting, the board started a discussion via email regarding what the mask policy would be at convention. The board decided to follow local guidelines and let the individual attendee decide for themselves. Harmony moved to give away two one-year KSRT memberships during convention, Alexa seconded, motion passed.

**2023 convention:** The contract to have the 2023 convention in Hays was signed. The 2024 convention in Wichita was discussed. Katilyn and Jen went to look at the venue. Harmony received a contract, which she shared with Becky

and decided to revisit at a later date.

**Other business:** The board discussed attendees and guidelines for ASRT delegates and alternates.

**Adjournment:** Toni moved to adjourn the meeting, Harmony seconded. Motion passed. Meeting adjourned at 3:51 p.m.

## SAVE DATE

**March 30  
to April 1  
2023**

86<sup>th</sup> Annual KSRT Convention  
Hilton Garden Inn in Hays, Kansas  
221 West 43rd Street, Hays, Kansas 67601  
*Watch [www.ksrad.org](http://www.ksrad.org) & *The Rotating Anode* for more details!*

A limited block of sleeping rooms has been secured. Reservations may be made by phone at (785) 727-7721 (mention **KSRT22**) or online using the QR code to the right or this link: <https://www.hilton.com/en/hotels/hysiigi-hilton-garden-inn-hays/> (enter **KSRT22** into the *code group box* when booking online). Deadline is February 28, 2023.



# POST-CONVENTION BOARD OF DIRECTORS MINUTES

7:20 p.m. April 1

Lawrence

**Voting members present:** Gale Brown, president; Harmony Ibarra, chair of the board; Denise Orth, president-elect and executive secretary; Tara Rohn, professional development chair; Jason Elliott, secretary-treasurer; Kelly Denton, west area representative; Kyle Ibarra, central area representative and historian; Toni Caldwell, ASRT senior delegate and legislative chair.

**Non-voting members present:** Jen Smith, editor of *The Rotating Anode*; Melinda Chiroy, scholarship chair; Alexa Ritter; Ronda Sunnenberg; Kirsten Oswald.

**Call to order:** Gale Brown called the meeting to order at 7:20 p.m.

**Quorum:** Jason Elliott established a quorum.

**Executive Committee:** The executive committee ratified appointments at its meeting.

Chair of the board: Gale Brown.

Executive secretary: Denise Orth.

Professional development chair: Tara Rohn.

Education co-chairs: Becky Dodge and Shanna Bennett.

Denise will send a contact list of volunteers to serve on committees. Follow-up will occur at the summer meeting of the board of directors.

**Education Committee:** Harmony provided a preliminary report of 82 registrants. The approximate profit and loss is still to be determined. Because the number of attendees was lower than anticipated, food was under budget and the venue is going to write it off without a penalty.

## **Committee appointments:**

Membership (vice president): Lisa Eddy.

Bylaws (immediate past president):

## POST-CONVENTION EXECUTIVE COMMITTEE MINUTES

7:15 p.m. April 1

Lawrence

**Voting members present:** Harmony Ibarra, chair of the board; and Gale Brown, president.

**Call to order:** Gale called the meeting to order and nominated Harmony Ibarra as chair of the board. Harmony assumed control of the meeting.

## **Appointments:**

**Executive secretary:** Denise Orth.

**Education committee co-chairs:** Becky Dodge and Shanna Bennett.

**Professional development chair:** Tara Rohn.

**Adjournment:** The meeting was adjourned at 7:18 p.m.

Katilyn Slaton.

Nominations committee: Alexa Ritter.

Legislative committee: Toni Caldwell.

Historian: Kyle Ibarra.

Fellows: Denise Orth.

*Rotating Anode* editor: Jen Smith.

Scholarship chair: Melinda Chiroy.

East area representative: Vacant (going to ask Ronda Sunnenberg).

Central area representative: Kyle Ibarra.

West area representative: Kelly Denton.

## **Tentative board meeting dates and locations:**

Summer: 11 am. July 9 in Wichita.

Fall: 10 a.m. Sept. 24 via Zoom.

Winter: 10 a.m. Jan. 21 via Zoom.

A list of officers and appointee addresses and phone numbers will be placed in the Google Drive, and new board members will have the documents shared with them.

**Unfinished business:** Head shots of board members are needed for the website and *The Rotating Anode*.

**New business:** The board discussed the 2022 Ray Bowl competition and how the incorrect answer key may have affected team responses and final team ranking. The board determined as a solution to recognize Fort Hays State University and Washburn University both as first place in the 2022 Ray Bowl competition. Harmony made a motion that Washburn University with receive equal first place recognition and awards, including a plaque, website and publication recognition, and monetary awards. Kelly seconded, motion passed.

## **Announcements:**

**2023 Convention:** The 86th annual KSRT convention will be March 30-April 1 at the Hilton Garden Inn in Hays.

The deadline for *The Rotating Anode* is April 25.

**Adjournment:** Harmony moved to adjourn the meeting, Kirsten seconded. Motion passed. Meeting adjourned at 7:20 p.m.



# THE PAST, PRESENT AND FUTURE OF INTERVENTIONAL RADIOLOGY

By Cade Scheck, Washburn University

Second-place essay

## Abstract

In this document, we will discover the long and brilliant history of interventional radiology as a modality, starting with its creation by Charles Dotter in 1964, using the modality to treat people with blood clots and narrowing arteries. Dotter also was responsible for the implementation of contrast media in IR and concluded that noniodinated contrast would work the best to reduce patient reactions. Next, we dive into where interventional radiology is today: a modality used for a lot of the same practices as when it originally began, but with new procedures added. For example, advancements in technology allow the use of microcatheters to help the modality stay as minimally invasive as possible. IR also has become a staple in treating cancer patients, allowing more intricate methods to be used in the world of fighting the development of cancerous cells. Lastly, we look at where interventional radiology is heading in the future, with even more advancements in technology to improve the efficiency, reliability, and overall patient results in the field. With the use of such technologies as augmented reality, artificial intelligence, and the development of FORS, we can see that we are not yet at a maximum potential for interventional radiology. There is still much room to grow in this modality, and yet we have come so far. Here, we can appreciate the past, recognize the present, and look ahead to the future of interventional radiology.

Interventional radiology (IR) is a key pillar in the world of health care that we know today. From its initial start in 1964 to where we are today and where we will be heading in the future, interventional radiology has enabled health-care professionals to treat a multitude of diseases and conditions in a much more convenient capacity. Great strides have been made in this field since its beginnings as a humble modality. It has grown and expanded into a versatile and efficient section of radiology. In the following pages, an explanation will be stated of the world of interventional radiology, its history, what it is used for today, and where it will take us.

The history of interventional radiology began in 1963 when Charles Dotter had the idea. This was after Dotter and others already had made huge advances in angiocardiology when they developed a rapid imaging machine using a fluoroscopic tube capable of taking images much more efficiently than previously. Dotter did not stop there, however. He and his team continued making other ad-

vancements in the use of catheterization and other angiographic practices. Then, building from his idea in 1963, he officially began the modality of interventional radiology in 1964 when "Dotter opened a new era of percutaneous angioplasty through accidental operation" (Tang, Jia, Li, & Li, 2014). However, when Dotter first began his work with angiographic procedures, he used tightly wound springs because conventional catheters were not commercially available. In 1966, his team invented a new type of spring that included a safety or "guide" wire to allow for better and safer control during procedures. Dotter also would spend later years determining the best use of contrast media during these procedures. He knew contrast was necessary but finding the right contrast was troublesome. Patient reactions to contrast at this time were very common so most radiologists did not want to get too involved. But Dotter continued, searching for "a contrast agent with sufficient iodine content for cardiovascular visualization, with low viscosity for ease of injection, and with reduced prevalence of reactions" (Kinney, 1996). After various tests, he discovered that noniodinated contrast yielded fewer reactions from patients. Soon after, he made many advancements in new types of catheters and stents and began pushing his technique to radiographic organizations in North America and Europe. He and his colleagues had tested his technique on dozens of patients, placing catheters and stents, starting to use balloons as well to open vascular structures and place their tools, saving various lives and limbs. His practice soon was accepted for treatment of blood clots, aneurysms, and hemorrhages. Thus began the field of interventional radiology.

In present day, interventional radiology has blossomed into a vast modality, tackling a multitude of issues for the population. Today, interventional radiology is used for much more than it was when it began. Interventional radiology is used still for the treatment of blood vessels, whether that be a narrowing or clot. It also can be used for patients who have cancer. Doctors use IR to isolate a tumor and deploy various treatment options to kill the cancer cells. Whether it is a method of chemotherapy, freezing the tumor, or cutting off blood flow to cancerous cells, IR can be used for all of this. Not only that, but IR can be used in the treatment of kidney problems and gallstones or for patients needing a central line placed. The range of interventional radiology has grown tremendously since its beginning, including the

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Continued on Page 6

technology being used. Currently, interventional radiology uses similar equipment to that of an operating room. Fluoroscopic devices are used to navigate the patient's body and treatment. Unlike surgical procedures, the procedures performed in interventional radiology departments are much less invasive, often allowing a patient to be up and about in the same day as their procedure. They can continue their day with less pain and a better overall quality of life, thanks to modern technology. We now have access to such advancements as microcatheters and other devices that allow access to a patient's vessels through small incisions, creating minimally invasive procedures with improved results every day. Interventional radiology has "many minimally invasive image-guided procedures performed by IR [that] have supplanted major surgical procedures by either IR physicians educating other medical fields or IR physicians taking on a clinical role" (Goldberg, 2019). With the education of physicians, extensive surgical procedures can be reduced by implementing an approach through interventional radiology, resulting in less invasive techniques and yielding improved results from procedures performed.

Where interventional radiology has come today compared to where it began is quite remarkable. With new developments in technology and new procedures being created so quickly, the possibilities of where IR can go is limitless. The two main advancements which could occur in interventional radiology include augmented/virtual reality and artificial intelligence (A.I.). With augmented reality, doctors can see critical information in real time to help them navigate their current procedure. For instance, "an interventional radiologist could visualize vital signs within the same field of vision, overlying the patient during a critical intervention. These numbers could potentially appear on command when performing a key step of a procedure or when the radiologist has a concern" (Makary, Ceme, 2020). This technology also would allow doctors to visualize diagnostic images in real time, whether it be a sonogram or a fluoroscopic image during needle placement. This way, if the doctor cannot acquire an appropriate image, this augmented reality technology will allow them to visualize this information to avoid critical areas of the patient. A.I. will allow doctors to be able to recognize anatomical structures more quickly. The A.I. software will alert the doctor of where they are in the patient so crucial errors from poor visualization will be minimized. Lastly, and possibly the most important

development in this modality, is Fiber Optic RealShape or FORS. This technology, currently being developed, "utilizes catheters embedded with light sensing technology [that] could optimize vascular imaging guidance, drastically decrease the procedural time, and radiation exposure for interventions, drastically increasing the safety for patients and practitioners alike in the future" (Makary, Ceme, 2020). This revolutionary technology would be extremely beneficial to all parties involved. For the radiologist, images would be three dimensional, allowing for more accurate and real-time readings. This also means less time spent on the table for the patient, and radiation exposure also would decrease, which is an always important practice. As mentioned, this technology is currently being pioneered, so the timeframe of implementation is yet to be developed.

In conclusion, interventional radiology is a fascinating modality, from its humble and accidental beginnings with Charles Dotter in 1964 to the strides it has made to today's world with technological advancements and procedures performed. Lastly, the impact that interventional radiology will continue to have in the future with the implementation of augmented reality, artificial intelligence, and FORS. Health-care professionals have much to look forward to in the coming years in IR, all while appreciating the history or the modality and how far it has come along the way. The one thing that is for certain when it comes to interventional radiology, there is always a drive to keep advancing the technology and the overall care for the patients that need it the most.

## References

- Goldberg, M. (2019, September 25). *What is vascular and Interventional Radiology*. What is. Retrieved October 14, 2021, from [https://www.hopkinsmedicine.org/interventional-radiology/what\\_is\\_IR.html](https://www.hopkinsmedicine.org/interventional-radiology/what_is_IR.html).
- Kinney T. B. (1996). Radiologic history exhibit. Charles T. Dotter: a pioneering interventional radiologist. *Radiographics: A review publication of the Radiological Society of North America, Inc*, 16(3), 697-707. <https://doi.org/10.1148/radiographics.16.3.8897633>
- Makary, M. S., & Ceme, J. (2021, June 21). *Future trends and technologies in interventional radiology: What to expect*. Diagnostic Imaging. Retrieved October 14, 2021, from <https://www.diagnosticimaging.com/view/future-trends-and-technologies-in-interventional-radiology-what-to-expect>.
- Tang, Z., Jia, A., Li, L., & Li, C. (2014). *Zhonghua yi shi za zhi* (Beijing, China: 1980), 44(3), 158-165.

## **KSRT Membership**

powered by..... **memberplanet**

Membership categories include:

Active, Active Military,  
Associate A, Radiologist Assistant,  
Senior & Student

We have a category for everyone!

You can renew your membership,  
join for the first time or rejoin if  
your membership has lapsed.

The KSRT is your professional voice  
in Kansas...be part of that voice  
in matters that concern you!!

Go to [ksrad.org](http://ksrad.org), click on the membership  
tab for a quick link to join.

**Browse the updated look on  
[ksrad.org](http://ksrad.org)**

**Reorganized for ease of use!!**



## KANSAS SOCIETY OF RADIOLOGIC TECHNOLOGISTS

### Scholarship Application Checklist

- Kansas Society of Radiologic Technologists member
  - Scholarship application
    - Essay.
- Students: Official transcript in a sealed envelope and letter of recommendation from clinical instructor or other supervising technologist.
- Technologist: Copy of ARRT card and letter of recommendation from a radiology technology colleague.
- All materials should be in one envelope and postmarked by Feb. 1.  
Mail to:  
Denise Orth, RT(R)(M), FKSRT  
KSRT Executive Secretary  
1702 Mermis Ct.  
Hays, KS 67601
  - Winners will be notified and must attend the Kansas Society of Radiologic Technologists Spring Convention to receive the scholarship.





# KANSAS SOCIETY OF RADIOLOGIC TECHNOLOGISTS

## Scholarship Application

Deadline is Feb. 1

### I. Applicant Certification

I certify that I am a U.S. citizen, U.S. national or U.S. permanent resident, that this application information provided is true and correct to the best of my knowledge. I understand that any false statements made herein will void this application, and I will be ineligible for support from the KSRT Scholarship Fund. I hereby authorize the release of all information contained in this application packet as may be required to determine my eligibility for a scholarship. I hereby waive my rights to review any documents pertaining to my scholarship application once submitted.

\_\_\_\_\_  
Signature of Applicant

\_\_\_\_\_  
Date

### II. KSRT Member

I am a member. Years of membership \_\_\_\_\_

I am sending in my membership now.

### III. Personal Information

Mr. Ms. Name \_\_\_\_\_  
Last First MI

Mailing Address \_\_\_\_\_  
Number/Street (Apt#) City State Zip

E-mail \_\_\_\_\_

Phone (\_\_\_\_\_) \_\_\_\_\_

ARRT Certifications \_\_\_\_\_ ARRT #: \_\_\_\_\_

### IV. Educational Information

Radiologic Science Program \_\_\_\_\_  
Name of Institution City/State

Program Director \_\_\_\_\_

Email Address \_\_\_\_\_ Phone (\_\_\_\_\_) \_\_\_\_\_

Anticipated Graduation date \_\_\_\_\_ / \_\_\_\_\_ GPA \_\_\_\_\_  
Month Year

#### Program Type

- ☐ Certificate Program
- ☐ Associate degree program
- ☐ Bachelor's program

#### Area/Concentration

- ☐ Medical Imaging
- ☐ Nuclear Medicine
- ☐ Vascular
- ☐ Radiation Therapy
- ☐ Sonography
- ☐ Other \_\_\_\_\_

### V. Letter of recommendation

Name: \_\_\_\_\_

Position: \_\_\_\_\_

Email address: \_\_\_\_\_

### VI. Essay

Please provide a one-page typed essay describing why you deserve this scholarship. For objectivity purposes, do not include any statements that would identify your school/instructors or yourself. The essay shall be 12 point font Arial with single spacing and 1-inch margins.

Applications will not be considered if not complete. Please submit application and transcript to:  
Denise Orth, KSRT Executive Secretary  
1702 Mermis Ct., Hays, KS 67601

ADDRESS SERVICE REQUESTED

KANSAS SOCIETY OF  
RADIOLOGIC TECHNOLOGISTS  
1702 MERMIS CT.  
HAYS, KS 67601



FACEBOOK.  
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