

The Rotating Anode

FALL 2018



Table of Contents

Board of Directors ...	2
Committees	2
Executive Committee	
Minutes	3
Board of Directors	
Minutes	3-4
Radiation Therapy in Brain Cancer	4-6
Annual Convention	
Competition	8-17
KSRT Application ...	18
Scholarship	
Application	19

KSRT BOARD OF DIRECTORS

Chair of the Board

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

President

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

Past President

Brian Ralph, RPA, RA, RT(R)
bralph@eaglecom.net

President-Elect

Ronda Sunnenberg, RT(R)
ronda.sunnenberg@yahoo.com

Vice President

Dawn Williams, RT(R)
dawnwilliams08@gmail.com

Secretary-Treasurer

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

Director at Large

Kenny Rounkles, RT(R)
karounkles@mail.fhsu.edu

Education Chair

Megan Rucker, Ms.Ed., LRT(R)(M)(CT)
meganrucker86@gmail.com

Professional Development Chair

Katilyn Slaton
kmkurtz@mail.fhsu.edu

ASRT Senior Delegate

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

Area Representative, West

Judy Lynch, MSRS, RT(R)(M)(QM)
(CT)
xraylady@outlook.com

Area Representative, East

Vacant

Area Representative, Central

Vacant

Student Representative

Vacant

KSRT COMMITTEE CHAIRS AND APPOINTMENTS

Bylaws

Brian Ralph, RPA
bralph@eaglecom.net

Fellows

Janie Ward, MS Ed, RT(R)(M)
wardjanie48@gmail.com

Legislative

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

Membership

Dawn Williams, RT(R)
dawnwilliams08@gmail.com

Media Coordinator

Megan Rucker, Ms.Ed., LRT(R)(M)(CT)
meganrucker86@gmail.com

Nominations

Jeff Vaughn, MS, RT(R)
vaughnjf@yahoo.com
Kyle Ibarra, RT(R)(MR)
ibarrakb@gmail.com

Scholarship

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

Profess. Development Vice Chair

Susan Dumler, MS, RT(R)(M)(CT)
(MR)
suekaycooper@hotmail.com

Historian

Doug Billings, BA, RT(R),CNMT
dougbillings1625@gmail.com

Editor, *The Rotating Anode*

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

Executive Secretary

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

Student Interns

Cody Ray, vice president intern
Aubrey Stimpert, president-elect intern

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

EXECUTIVE COMMITTEE MEETING MINUTES

9:30 a.m. Sept. 8, Hutchinson and Zoom meeting

Call to order: The meeting was called to order at 9:40 a.m.

Members present: Jen Smith, chair of the board; Brian Ralph, past president; and Toni Caldwell, president. A quorum was present.

Approval of minutes: Toni moved and Brian seconded to approve the minutes. Motion approved.

Financial report: Denise presented the financial report through Sept. 3. The report showed income of \$2,499.00 and expenses of \$5,228.22. The net worth report showed a checking account balance of \$1,197.82 and certificates of deposit worth \$56,040.42 for a total net worth of \$56,040.42. Toni moved to approve, Brian seconded to accept the report as presented. Motion passed.

Unfinished Business:

Affiliate Development Program: Jason Bradley is our ASRT contact. Toni submitted our financial request asking

to pay for JotForm, Weebly, and \$500 to print extra copies of *The Rotating Anode* to send to hospitals. Our report is due Sept. 30 to inform ASRT how we have met goals for digital marketing. We completed the membership survey, PR tools, funding for email blast, and digital advertising prior to education event. Facebook is tied to Twitter so Facebook posts go directly to Twitter.

Kansas Hospital Association: We have not heard anything yet about our application.

Cleveland Chiropractic School RT program: Toni has been in contact with the program and will talk to the students about the KSRT.

Old Business: None.

New Business: None.

Announcements: None.

Adjournment: Toni moved to adjourn. Brian seconded. Adjourned at 9:58 a.m.

BOARD OF DIRECTORS MEETING MINUTES

Sept. 8, Hutchinson

Members in attendance: Toni Caldwell, president; Jen Smith, chair of the board; Denise Orth, executive secretary; Megan Rucker, education chair; Harmony Ibarra, secretary-treasurer; Susan Dumler, vice chair of professional development; Alexa Ritter, student representative; Judy Lynch, west area representative; Kyle Ibarra, vice chair of nominations; via phone: Rhonda Sunnenberg, president-elect; Bryan Ralph, past president; Kara Stockton, student leadership development committee chair.

Call to order: President Toni Caldwell called the meeting to order at 10:12 a.m.

Quorum: A quorum was met.

Approval of minutes: Jen Smith moved to accept the minutes from the last board of directors meeting. Megan Rucker seconded the motion. Motion passed.

Financial report: Judy Lynch moved to accept the financial report presented by Denise Orth. Jen Smith seconded the motion. Motion passed.

Consent agenda: Jen Smith moved to accept the consent agenda. Megan Rucker seconded the motion. Motion passed.

SPECIAL VOTE

Aug. 17, via email

An email discussion was held regarding the location and dates for the 2019 annual convention. Harmony Ibarra moved to hold the 2019 KSRT Convention at the Best Western North in Wichita on March 29-30. Jen Smith seconded the motion. The motion passed.

Consent Agenda

President: Activity since the last BOD meeting included speaking with Cleveland Chiropractic, speaking with ASRT concerning the Affiliate Development Program, signing the contract with hotel for the 2019 annual convention, speaking with Washburn students regarding involvement in the KSRT, writing a letter to Washington regarding ASRT support of radiologist assistants, attending a meeting with the Missouri Society of Radiologic Technologists to speak about the KSRT, submitting a letter of recommendation to the governor for Kyle Ibarra to be part of the Kansas Board of Healing

Arts, reformatting the membership survey, and updating Facebook, which generated more interest.

Legislative: Activity since the last BOD meeting included participating in the Regional 4 meeting for ASRT, speaking with legislative liaison at the capitol about a day on the hill, announcing news about radiologist assistants on social media, attending a Missouri Society of Radiologic Technologists meeting for legislative updates, and speaking with Washburn students regarding the legislature.

Education: Activity since the last BOD meeting included securing the 2019 convention location and date (Best Western North in Wichita on March 29-30; hotel rates are \$99.99/night); submitting information to three different speaker bureaus, requesting information from ARRT regarding CE compliance for CQR, and providing information to the social media coordinator to publish on the webpage.

Social media coordinator: Activity since the last BOD meeting included working with Kara Stockton to publish student membership information on Facebook and the webpage, updating the 2019 convention information on

Continued on Page 4

the webpage, publishing a legislative update regarding radiologist assistants on the webpage, and adding Toni Caldwell as an editor on the Facebook page.

Membership: Several attempts have been made to reach out to the members who have allowed their memberships to lapse through emails, phone calls and social media. There is no return responses. Our current membership total is 278 members.

Chair of the board: Nothing to report.

The Rotating Anode editor: The next deadline for *The Rotating Anode* was Sept. 24.

Financial report: The financial report is posted on Google Drive and was sent out in an email. The board will need to review and discuss the red highlighted items.

Western area representative: Denise Orth provided the email addresses of western area members and they have been contacted to inquire about interest in future Zoom meetings as a group. Managers and Pioneer Health Network members will hold a Zoom meeting on Sept. 19.

Unfinished business:

KHA: No report.

ASRT Affiliate Development

Program: A request was made to the ASRT for extra funds to put toward Weebly website funding and additional printed copies of *The Rotating Anode* to be printed and distributed to radiology departments around the state.

Student leadership development

committee report: Two applications were received for the Student Leadership Development Program. Cody Ray from Newman University has been assigned to the vice president and Aubrey Stimpert from Fort Hays State University to the president-elect. The board of directors mentors will attend the first committee meeting, contact the student once a month, and mentor the students in the ways of the board. The students' guidelines are to attend at least two board meetings.

Old business:

Cleveland Chiropractic: They have started sending in membership applications. President Caldwell has a meeting set up with them.

Membership survey: President Caldwell has put the survey results into a readable format and is preparing it for distribution.

Financials: Total projected income equals \$2722.85. Total upcoming expenses equal \$8035.89. Megan Rucker moved to cash in the CD that expires on Feb. 1, 2020, totaling \$12,316.89 minus the early withdrawal penalty fee to cover our upcoming expenses. Judy Lynch seconded the motion. Motion passed.

2019 convention: Discussion was held regarding food cost. With the addition of breaks the cost is \$32.99 per person with half of the audio-visual fee to be waived.

Senior/Student fees:

- Friday or Saturday only – \$40 early bird, regular \$55
- Friday and Saturday – \$55 early bird, regular \$85

Member fees:

- Friday or Saturday only – \$80 early bird, regular \$110
- Friday and Saturday both – \$160 early bird, regular \$180

Nonmember fees:

- Friday or Saturday only – \$160 early bird, regular \$220
- Friday and Saturday both – \$320 early bird, regular \$360

Megan Rucker moved to increase the fee structure as listed above. Jen Smith seconded the motion. Motion passed.

Speakers are still needed; please give any speaker information to Megan Rucker.

New business:

2020 convention: Potential location were discussed. Megan Rucker will reach out to Topeka and Lawrence area convention centers.

Announcements:

Harmony Ibarra moved to send a \$50 memorial to The Southeast of Saline Foundation in honor of technologist Neil Albrecht, who recently died. Megan Rucker seconded the motion. Motion passed.

The next board meeting will be Jan. 12 at the Salina Public Library. The executive committee will meet at 10 a.m. and the full board at 10:30 a.m. In case of inclement weather, the board will meet Jan. 19.

Bylaw changes and board recommendation will need to be prepared for a vote at the January board meeting.

Adjournment: Jen Smith moved to adjourn the meeting. Judy Lynch seconded the motion. The meeting adjourned at 11:59 a.m.

RADIATION THERAPY RISK VS. REWARD IN CASES OF BRAIN CANCER

By Bailey Harris, Washburn University, Second-place essay

Abstract

Radiation therapy is a form of cancer treatment in which radiation is introduced into the body with the intent to attack the DNA of cancer cells. While it is meant to kill cancer cells, it does incidentally kill living cells, and this can lead to long-term issues depending on the area destroyed. With the brain being a small section of the body but affecting every other part, any small amount of damage to healthy tissue can leave devastating effects. Researchers now are taking note of this fact and

creating elaborate studies to try to determine whether the risk of this damage is worth the reward of destroying a brain tumor.

Body

What is radiation therapy? According to the National Cancer Institute on their website cancer.org, radiation therapy is the use of extremely high-energy rays of radiation to shrink tumors

Continued on Page 5

and kill cancer cells. Even though it has been used for many years to treat cancer, in recent years there has been a lot of debate about the risks of radiation therapy versus the reward in specific cases of brain cancer. In this paper, I will first explain more about radiation therapy and its many forms and uses. Then, I will highlight a sampling of different studies that have been conducted on this topic.

To begin, the radiation used in radiation therapy can include x-rays, gamma rays, and general charged particles. It can be introduced to the body in a couple different ways. One way is pushed through a beam coming from a machine, another is coming from a radioactive material placed within the body near the cancer cells, and one more is through radioactive substances whose purpose is to travel in the blood to attack cancer cells. No matter the entry, all have one goal: to kill cancer cells. As DNA is the most crucial element of a cell, the way to accomplish this is by either damaging each cell's DNA directly or by creating charged particles that will remain within the cells for a period of time and, in turn, damage their DNA. Once a cell's DNA has been damaged, the cell cannot repair itself and can no longer divide. This means that the cancer can no longer continue causing damage or metastasizing (National Cancer Institute, 2010).

Next, radiation therapy can have a couple of different purposes. First, it is often used with a curative intent, meaning that treatment is done in hopes that the therapy will destroy a tumor and prevent spreading or reoccurring. This form of treatment commonly can be used alongside chemotherapy as a part of a patient's treatment plan. Second, another purpose of radiation therapy can be a more palliative approach, meaning the therapy is not used to get rid of the cancer but rather relieve symptoms and alleviate any pain or discomfort a patient may experience from the cancer.

While radiation therapy can be an essential part of a cancer treatment plan, it is important to remember radiation in general can cause serious harm to a patient's body. One way that radiation therapy actually can do harm is through the tissues surrounding a tumor. Radiation does not kill only cancer cells, but it also can cause damage to normal cells. No matter how precise a radiation therapist is, there always will be incidental irradiation of normal brain tissue. While it is unavoidable when the whole brain needs radiation therapy, it is very beneficial to protect even the smallest areas in the brain from radiation whenever possible. Specific areas such as the hippocampus, where memories are created and stored, should be avoided in order to greatly improve a patient's quality of life. In cases where whole brain radiation therapy is not needed, oncologists work to create a radiation plan that minimizes dose to all areas not needing radiated.

Keeping all of this in mind, there is a concern for the risk of harm versus the potential rewards, and this concern needs to be taken into account for each individual patient and their specific type of cancer. Fortunately, though, researchers have discovered and recorded the amount of radiation normal tissue within different parts of the body can safely receive, and on-

cologists know not to exceed those doses when constructing treatment plans.

Researchers all over the world now are taking this risk versus reward debate even further and applying it to studies involving all areas of the human body. One area in particular, however, has caught the attention of many researchers, most likely because of its significance to all basic human function. The brain is the main coordinating center of all sensation, emotion, and intellectual capacity in all living beings. As significant as it may be, though, it is not immune to many diseases that can affect the rest of the body. According to MD Anderson, more than 200,000 people in the United States alone will be diagnosed and treated for brain cancer this year (The University of Texas MD Anderson Cancer Center, 2017).

While radiation therapy can be a crucial part of a patient's treatment, whole brain radiation therapy may not be the best answer for every individual case. We already know radiation therapy can cause uncomfortable side effects that reach almost every part of the body, but radiation therapy can have extremely significant effects on the brain. Some common side effects are dry mouth, difficulty swallowing, jaw stiffness, nausea, tooth decay, swelling in the arms and legs, and mouth and gum sores. Radiation treatment directly to the brain, however, is being found to cause long-term impaired structural and cognitive function. Many researchers are noting this and conducting new studies to determine if these side effects and loss of function are beneficial in comparison to the tumor reoccurring. As radiation therapy gains new advances, more patients are finishing treatment and surviving their cancer. This allows us to study these long-term complications and be able to look at them more thoroughly.

One example of this new research is a study published in Brain Connectivity by researchers at the University of California San Diego School of Medicine stating that the brain being exposed to such high levels of radiation actually can change the structural networks within the brain. Once this change has occurred, it often leads to impaired brain function which cannot be regained. (Radiation News, 2017)

This study was comprised of 54 patients with brain tumors. Using previous research that found that radiation therapy causes cortical atrophy in certain regions of the brain, these researchers already had an elaborate mathematical model to go off of in determining the effects of radiation therapy on these patients. Their study focused on the thickness of each patient's brain cortex both before and after therapy. Their findings showed the therapy actually caused the brain cortex to thin at a quick rate as well as a separation between regions of the brain to form. This separation is especially destructive because adjacent regions of the brain all need to work together to carry out important daily functions. This study emphasized the need to continually improve the area of radiation therapy on the brain so as to stop these harmful side effects from severely altering patients' lives following treatment.

It is unfortunate but radiation therapy is being found to affect the brains of children just as much, if not worse, than adults.

The reason this could be more severe is that at very young ages, a child's brain is still developing and they still have a lot to learn. An impairment in function can in turn hinder the learning ability of a child. Children receiving radiation therapy can experience deficits in learning, memory, and spatial information processing abilities. It is known that radiation can cause adverse effects for some time even after treatment has ceased. However, it has been discovered that a different kind of radiation therapy, using protons rather than photons, can lessen the permanent effects on the brain. In a study written about by David Emerson on PeopleBeatingCancer.org, it was found that children with brain tumors who received typical photon radiation therapy experienced a significant decline in IQ. Typically, a child's IQ may decline 2 to 4 points each year after therapy has ended, with this risk being even higher depending on the age of the child, the amount irradiated, and the dose received. With this study specifically, though, the decline for a child who underwent photon therapy was more than half a standard deviation with each year that passed after treatment. In contrast, children who underwent proton irradiation were able to sustain a generally stable IQ for three years after therapy (Emerson, 2013).

Another study on the matter is one by Dr. Paul Brown, a professor of radiation oncology at MD Anderson. This study claims that whole brain radiation therapy can lead to significantly poorer cognitive function than radiosurgery. Whole brain radiation therapy entails a patient receiving radiation to the entire brain over a period of many weeks, while radiosurgery differs in that it is an extremely high dose of radiation delivered to a very small, precisely selected area over a shorter period of time. Side effects of whole brain radiation therapy can include but are not limited to hair loss, skin redness, dry mouth, and fatigue while side effects of radiosurgery are minimal. Brown argues that, for this reason, whole brain radiation therapy should no longer be used when radiosurgery is also an option. Other studies state that whole brain radiation therapy significantly improves tumor control, but Brown points out that none of those studies show a long-term survival benefit.

To prove his point, Brown conducted a study of his own which involved 213 patients of all different brain tumor etiologies. These patients were randomized and received either radiosurgery alone or radiosurgery alongside whole brain radiation therapy. Brown put each patient through one of seven cognitive tests before and after treatment. His results revealed that after three months of treatment, 92 patients who received both radiosurgery and whole brain radiation therapy showed a decline in any of the cognitive tests, whereas 64 of patients who received only whole brain radiation therapy showed a similar decline. More specifically, those patients who underwent both radiosurgery and whole brain radiation therapy showed a 30% deterioration in immediate recall, a 51% deterioration in delayed recall, and a 19% deterioration in verbal fluency, whereas those who received only whole brain radiation therapy showed an 8% deterioration in immediate recall,

a 20% deterioration in delayed recall, and a 2% deterioration in verbal fluency. To conclude his studies, Brown explains that oncologists are faced with a dilemma being which are the lesser of the two evils: the whole brain radiation therapy causing impaired brain function or the brain tumors not shrinking or potentially reoccurring. To further conclude this study, Brown and his colleagues plan to research and analyze the cost effectiveness associated with radiosurgery alone and whole brain radiation therapy along with radiosurgery as a treatment.

In conclusion, radiation therapy is the use of extremely high-energy radiation to take part in cancer treatment by shrinking tumors and killing cancer cells. It does this by attacking the DNA of a cell, which without a cell can no longer function or spread. Radiation includes a couple different types of radiation and enter the body in a couple different ways. Therapy can be an absolute necessity to an individual regarding their cancer treatment plan. However, as more and more advances in technology and research become available, researchers are finding out that radiation therapy can be harmful to treatment performed on the brain. Many researchers have taken it upon themselves to conduct studies on the manner and while many surprising results have been found, there is still an ongoing debate. The decision at hand is whether the risk of long-term impaired brain function is worth a brain tumor shrinking and having a less likely opportunity for the cancer to come back. One day with more research, we may have a set opinion on which risk outweighs the other but for now, it is up to each doctor to determine what is best for each individual patient. And the debate of risk versus the reward regarding cases of brain cancer continues.

References

- The National Cancer Institute. (30 Jun. 2010). Radiation therapy for cancer. The National Cancer Institute. Retrieved from <https://www.cancer.gov/about-cancer/treatment/types/radiation-therapy/radiation-fact-sheet>.
- Wilcox, B. (16 Jun. 2017). Radiation therapy for brain cancer found to cause significant damage to the brain. Radiation. news. Retrieved from <http://radiation.news/2017-06-16-radiation-therapy-for-brain-cancer-found-to-cause-significant-damage-to-the-brain.html>.
- Emerson, D. (21 Sept. 2013). Radiation therapy and the brain for pediatric cancer – short, long and late side effects. People Beating Cancer. Retrieved from <https://peoplebeatingcancer.org/radiation-therapy-and-the-brain-for-pediatric-cancer-short-long-and-late-side-effects>.
- Le Pechoux, C., Dhermain, F., & Besse, B. (04 Sept. 2016). Whole brain radiotherapy in patients with NSCLC and brain metastases. *The Lancet*, Volume 388 (no. 10055). Retrieved from [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(16\)31391-5/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31391-5/fulltext).
- Sussman, Laura. (31 Mar. 2015). Risks of whole brain radiation therapy added to radiosurgery outweigh benefits for patients with limited brain metastases. MD Anderson Cancer Center. Retrieved from <https://www.mdanderson.org/newsroom/2015/05/risks-of-whole-brain-radiation-therapy-added-to-radiosurgery-out.html>.

*Mark your calendars
now!*

*The 2019 Annual
Convention will be
March 29-30
at the Best Western
North
in Wichita.*

KSRT RADIOGRAPH COMPETITION

The radiograph competition awards are open to members of the KSRT, students or technologists. The following rules govern the competition.

Films and Scientific Exhibit entry forms are due by Feb. 15, 2019. Essays are due by Jan. 31, 2019.

Categories for the 2019 Annual Convention

- General: Sunrise patella, submentovertex skull, anterior oblique ribs
- Contrast: Barium enema lateral rectum

ELGIBILITY

- Any student radiologic technologist or radiologic technologist who is a member in good standing of the KSRT is eligible to compete. A copy of the KSRT membership card must accompany the application form.

***Members of the Radiograph Competition Committee, the Chair or members of the Professional Development Committee and the Judge Assistants are not eligible to compete.**

FILM ELIGIBILITY

1. Only one radiograph per person per category is allowed.
2. No tomographic radiographs will be accepted.
3. Images must be in electronic form such as USB drive, CD, or e-mailed.
4. Any identifying name or marker **MUST** be masked. This includes patient name, technologist name and/or initials, and the name of the institution.
5. Right or Left markers must be clearly visible.
6. All images must be actual patients and ordered by a physician.
7. All radiographs must be taken following the close of the prior annual meeting and **before** the deadline.
8. All films must be submitted to the Professional Development Chair and postmarked on or before the deadline date. Any radiograph postmarked after this date will be disqualified from the competition.
9. A copy of the application form provided on the KSRT website, www.ksrad.org, must accompany each entry.
10. A copy of the KSRT membership card must accompany the application form.

HOW TO COVER INITIALS

Films must have initials on markers removed for judging purposes. Save the radiographs into a JPEG format. Once it is in a JPEG format you can open the image in Paint. Proceed to black out the initials using the paintbrush tool.

MOST INTERESTING CASE

Any imaging modality can be used to:

1. Demonstrate a rare disease or fracture
2. Demonstrate a common disease or fracture
3. Normal variants
4. Any other unusual findings

Each applicant must submit a **typed synopsis** detailing the following:

- Patient history
- Diagnostic finding
- Related imaging procedures
- Justification as to why the case should be awarded title of most interesting case

JUDGING OF CONVENTIONAL RADIOGRAPHS

- Three judges will be selected by the Professional Development Committee. It is suggested that two of the judges be radiologic technologists and the third a radiologist.
- Judges will award each radiograph points according to the given scales and without knowledge of scores given by the other judges. All scores will be given to the Radiograph Competition Committee. The decision of the judges will be final. There will be one winner per category – no ties.
- There will be a total of 100 points possible scored by each judge for each radiograph in the following categories:
 - Technical Excellence (30 points possible) – detail, density, contrast, radiation protection, collimation, clarity of anatomical part to be demonstrated compared to the overlying anatomy.
 - Positioning (60 points possible) – marking, alignment of the patient, centering of the anatomical part, proper demonstration of essential anatomy, evidence that proper positioning was achieved.
 - Imaging Processing Excellence (10 points possible) – special attention to artifacts, condition of processing solutions, anything detrimental to the finished radiograph.

JUDGING OF MOST INTERESTING CASE

- Three judges will rank the image(s) from 1-5. The image awarded the most points will be the winner. There will be no ties.

DISPLAY OF RADIOGRAPHS

- All qualified radiographs entered into the competition will be displayed to the membership during the course of the annual meeting. If this is not feasible, only the top three films in each division and category, and the recipient of the KSRT Outstanding Radiograph Award will be on display.

AWARDS

- A first-, second-, and third-place prize will be awarded.
- An outstanding radiograph award is given to the highest scoring radiograph in the competition.
- Awards will be presented at the banquet during the annual meeting.

RADIOGRAPH COMPETITION APPLICATION

A copy of the KSRT membership card **MUST** accompany this application.

Film Category _____

Name _____

Address _____

City _____ State _____ Zip _____

I am an _____ RT _____ Student (please check and provide employment or school information below)

School _____

Place of Employment _____

Home Phone _____ Work Phone _____

**A completed application, a copy of the KSRT membership card, and films
MUST be submitted by Feb. 15, 2019. Please send to:**

**Susan Dumler
Fort Hays State University
600 Park St. CH 130A
Hays, KS 67601
suekaycooper@hotmail.com**

KSRT SCIENTIFIC EXHIBIT

The scientific exhibit competition awards are open to members of the KSRT, student or radiologic technologist. The following rules govern the competition.

ELIGIBILITY

- Any student radiologic technologist or radiologic technologist who is a member in good standing of the KSRT is eligible to compete. A copy of the KSRT membership card must accompany the application form.

SCIENTIFIC EXHIBIT ELIGIBILITY

- Individuals may only submit one exhibit at the annual conference.
- Radiologic technologists and student radiologic technologists may not submit an exhibit entry together in either of the categories.
- An exhibit submitted for award consideration can NOT be a repeat entry from a previous KSRT annual convention.
- The exhibit must be the original work of the individual and cannot be commercially prepared.
- Identification markers distinguishing the exhibitor must be visible.
- Applications for space in this category must be submitted to the Professional Development Chair before the deadline date. Any application submitted after this date will be disqualified from the competition.
- A copy of the application form provided on the KSRT website, www.ksrad.org, must accompany each entry. In addition, the individual must provide a title, brief description and size of the scientific exhibit at this time. Approximate dimensions of exhibit must be known and stated on application.
- A letter of acceptance will be e-mailed to the applicant(s).

SCIENTIFIC EXHIBIT CONTENTS AND MECHANICS

1. Subject matter

- The subject matter on the exhibit is chosen by the individual.
- The subject should be pertinent to the radiologic sciences and may be supplemented by charts, descriptive material, photographs, etc. deemed necessary as long as all the components stay within the allotted space permitted.
- Exhibits should demonstrate originality of subject matter, general interest and value from both practical and educational viewpoints and technical excellence.
- Exhibits should not show images or markings that could identify the patient, institution, or department.
- Exhibits should not contain excessive written descriptions.

The following subjects are not allowed as entries because of winning awards at the previous convention: Caudal Regression Syndrome, Multiple Myeloma, Bone Age. Entry will be disqualified if it is on any of these topics.

2. Mechanics

- The exhibit may be freestanding or table top. The exhibit may not be any longer than 6 feet.
- The exhibit must be contained on one side of the space allotted.
- If view boxes are necessary, the applicant must provide them. The KSRT will not provide view boxes for this competition.
- Commercially produced programs or copyrighted materials should not be included as part of the exhibit.
- Applicants must provide the materials they will need to setup the exhibit (pins, staples, tape, etc.). Please note that materials such as nails, pins, tape etc. may not be attached to the exhibit hall walls or floor or on the exhibit table. The cost of repair or replacement of any defaced equipment will be charged to the exhibitor.

JUDGING

- The Professional Development Committee will select two or three judges who are radiologic technologists for the scientific exhibit competition. The decisions of the judges will be final and will be based on the following criteria:
 - Professional Value – Is the project of interest and practicality to technologists and students?
 - Educational Value – Does the project contain information enabling observation to be an education experience?
 - Originality of the Subject Matter – Does the project illustrate a new idea or present information in a new, innovative style?
 - Technical Quality – Is the material presented in a neat, well organized, and creative manner?

The following points will be awarded for each of the criteria:

Outstanding – 4

Above Average – 3

Average – 2

Below Average – 1

- Exhibits with the top three point values will be awarded first, second and third place respectively. An average of twelve or more points must be achieved to be considered for an award.

ASSEMBLY AND DISMANTLING

- Exhibit space will be assigned by the KSRT Convention Chair in conjunction with the Professional Development Chair.
- All assembly and dismantling of exhibits must be carried out during the time allocated by the KSRT. If an exhibitor fails to remove an exhibit, arrangements for removal will be made by the KSRT at the expense of the exhibitor.
- Each exhibit will be arranged by the respective applicant.

AWARDS

- A first-, second-, and third-place prize will be awarded.
- Awards will be presented at the banquet during the annual meeting.

SCIENTIFIC EXHIBIT COMPETITION APPLICATION

A copy of the KSRT membership card **MUST** accompany this application.

Scientific Exhibit Title _____

Name _____

Address _____

City _____ State _____ Zip _____

I am an _____ RT _____ Student (please check and provide employment or school information below)

School _____

Place of Employment _____

Home Phone _____ Work Phone _____

A completed application, a copy of the KSRT membership card, and a brief description of the scientific exhibit **MUST be submitted by Feb. 15, 2019. Please send to:**

**Katilyn Slaton
44 W. Stevie Ct.
Goddard, KS 67052
kmkurtz@mail.fhsu.edu**

KSRT ESSAY COMPETITION

KSRT is committed to recognizing excellence in scholarly writing by radiologic technologists and student radiologic technologists. The essay competition is open to members of the KSRT. The following rules govern the competition. The following essay topics may not be used this year because of winning awards at the previous convention: Radiology: Benefits to Patients with Breast Cancer, Radiation Therapy Risk vs. Reward with Brain Cancer, and Obstetric Ultrasonography.

ELIGIBILITY

- Any student radiologic technologist or radiologic technologist who is a member in good standing of the KSRT is eligible to compete. A copy of the KSRT membership card must accompany the application form.
- Entry deadline for the essay competition is **Jan. 31, 2019**.

MANUSCRIPT PREPARATION

Submitted manuscripts must meet the following requirements:

General information

1. The length of the text should not exceed 15 pages including body, bibliography, and appendix if applicable.
2. The original and three copies of the manuscript must be submitted.
3. The manuscript must be bound or enclosed in a folder, protector or cover.

Title page

1. This is a separate page, listing the title of the manuscript, author's name, author's permanent home address and telephone number, as well as institution name and telephone number. The title page should be attached to only the original copy.
2. To ensure a blind review, the author's name and any other identifying information must not appear anywhere else in the manuscript.

Abstract

1. Generally should not exceed 75 words, the abstract should summarize significant information in the text.
2. This is best written after the paper is complete.

References

1. References must follow the APA or MLA style format.
2. All non-original artwork, drawings, and photos should be referenced on an individual page.

JUDGING

- Three judges will be selected by the Professional Development Committee. One judge must be a registered radiologic technologist and one judge should be an English professor or teacher.

- Manuscripts will be evaluated with the following criteria:
 - Originality, educational/technical value, and scholarship (65%)
 1. Evidence of original work performed by the author.
 2. Evidence of novel, unique or unprecedented approach to topic.
 3. Contributes to higher radiological standards.
 4. Updates, expands or enhances existing knowledge.
 5. Mastery of subject matter.
 6. Research of literature.
 - Organization of material and mechanics (35%)
 1. Is material orderly and presented in a logical sequence?
 2. Are drawings or illustrations used to support or promote understanding of the text?
 3. Does the paper follow manuscript guidelines?
 4. Is the evidence of proper grammar, spelling, and punctuation?

AWARDS

- A first-, second-, and third-place prize will be awarded.
- Awards will be presented at the banquet during the annual meeting.

ESSAY COMPETITION APPLICATION

A copy of the KSRT membership card MUST accompany this application.

Essay Title _____

Name _____

Address _____

City _____ State _____ Zip _____

I am an _____ RT _____ Student (please check and provide employment or school information below)

School _____

Place of Employment _____

Home Phone _____ Work Phone _____

**A completed application, a copy of the KSRT membership card and 3 manuscripts
bound in folders MUST be postmarked by Jan. 31, 2019. Please send to:**

**Katilyn Slaton
44 W. Stevie Ct.
Goddard, KS 67052**

KSRT STUDENT RAY BOWL COMPETITION

The KSRT Student Ray Bowl competition is to encourage student participation, recognition of expertise in academics, and to build a healthy, competitive atmosphere among Kansas radiography programs.

ELIGIBILITY

- Participants must be enrolled in a Kansas radiography program.
- Participants must be a member in good standing of the KSRT.

COMPETITION

- There will be two (2) rounds of the competition. Participants must report to the designated room before the time posted in the annual conference program.
- Round One: Consists of a written multiple choice test of 50 questions. This test will contain questions similar to the content specifications suggested by the ARRT. The question content will be as follows:
 - Radiation Protection – 8 questions
 - Equipment Operation and Maintenance – 8 questions
 - Image Production and Evaluation – 13 questions
 - Radiographic Procedures – 14 questions
 - Patient Care and Management – 7 questions

*In addition, there will be 10 multiple choice test questions, 2 from each content specification categories above, to be scored only in the event of a tie.

The written exam will be given the first full day of the annual conference and participants will have 60 minutes to complete the exam. The exam will start at the posted time in the conference program. Once testing begins, no one will be allowed to enter or leave the testing area. Each participant must put name and school name on the test. **Failure to comply will automatically disqualify the participant.**

- Round Two: Consists of a 25 question competition. All teams will be simultaneously asked the same multiple choice question. Each team will write the answer on a slate. Each team will have 15 seconds to complete its written answer. Each correct answer will give the team one point. At the end of 25 questions, the scores will be tallied. If there is a tie, Sudden Roentgen Death will be played for 5 minutes. Following this 5 minute round, scores will again be tallied. Sudden Roentgen Death will continue until there are first-, second-, and third-place winners.

OFFICIALS

The officials will be selected by the Chair of the Professional Development committee and will consist of:

- Three moderators for the written exam who will monitor, proctor, and grade the written exam.
- Two judges for round two of the contest will use references, as needed, to determine if answers are correct or incorrect. The decision of the judges is final.
- Two score keepers who will keep track of team scores.
- One moderator who will read the rules before the competition begins, draw and ask questions to the teams, time the 15-second answer time, view answers, and award points for correct answers. The moderator may ask the judges for help in rendering a decision.
- Two sergeants-at-arms who will assure that the audience is quiet at all times. Any individual stating an answer that a participant may overhear or causing noise that is disruptive will be asked to leave – **there will be no warnings.**

SCORING

- Round One: One point will be given for each correct answer on the 50 question written examination. The three highest participant scores from each radiography program will advance to the second round.
- Round Two: One point will be given to each team for each correct answer giving during the 25 questions competition. Not responding to a question is considered an incorrect answer. No points will be given (or deducted) for an incorrect answer.

AWARDS

- First-, second-, and third-place prizes will be presented to members of the competing teams with the three highest scores in the final round.
- An award will be presented to the highest score on the written exam.
- Awards will be presented at the banquet during the annual meeting.

APPLICATION FOR MEMBERSHIP

THE KANSAS SOCIETY OF RADIOLOGIC TECHNOLOGISTS

By submitting this form, you are agreeing to abide by the Bylaws of the Kansas Society of Radiologic Technologists. You are also acknowledging the information submitted is correct and accurate. Dues must accompany this application.

FULL NAME _____
First Middle Initial Last Credentials

Street City State Zip

DOB _____ Email _____
Month Day Year

Phone Number () _____ Date of application _____

Check membership category.

ACTIVE MEMBER: DUES \$50.00/Year
Certified by ARRT and Member of ASRT and practicing in the field of radiologic technology.
MUST SUBMIT COPIES OF ARRT AND ASRT CARDS

ASSOCIATE A MEMBER: DUES \$50.00/Year
Certified by ARRT and practicing in the field of radiologic technology.
COPY OF ARRT CARD MUST BE SUBMITTED.

ASSOCIATE B MEMBER: DUES \$50.00/Year
Persons practicing in the field of radiologic technology not certified by the American Registry of Radiologic Technologists and are not registry eligible; or, those persons interested in promoting the purposes and functions of the KSRT, but are not eligible for Active, Associate A, Life, Senior or Student membership.

SENIOR MEMBER: DUES \$25.00/Year
Certified by ARRT and 65 years old or more.
SEND COPIES OF ARRT CARD AND BIRTH CERTIFICATE OR DRIVER'S LICENSE.

STUDENT MEMBER: (STATUS APPLIES TO PRIMARY PROGRAM OF STUDY) DUES \$25.00/Year
Enrolled in an approved school of radiography for a MINIMUM of 24 months.

PRESENT EMPLOYMENT or SCHOOL: _____

STUDENTS ONLY: Date of Enrollment _____ Anticipated Date of Graduation _____

Continuous Renewal _____ New applicant _____ (PLEASE CHECK ONE)

Graduate Bridge Program: Certificate must be returned with membership renewal application and dues stated on certificate. Valid for primary program of study.

The KSRT values our volunteers! Which of the following would you be interested in volunteering for?

Circle all that apply: Committee Officer Speaker

"The Rotating Anode" is available electronically for all new members.

I would like to contribute to the Scholarship Fund for the amount of \$ _____ in addition to my dues. This DOES NOT qualify as a charitable deduction OR professional expense for tax purposes.

PLEASE RETURN TO:

Denise K. Orth Executive Secretary, KSRT 1702 Mermis Court Hays, KS 67601 KSRT.exsec@gmail.com
Pay with PayPal or make checks/money orders payable to the KSRT. No partial dues accepted.
\$25.00 CHARGE FOR ALL CHECKS RETURNED FOR INSUFFICIENT FUNDS!

ADDRESS SERVICE REQUESTED

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