# OSU RST NEWS

## June 2018 Rad Sci Newsletter

**Dr. Kevin Evans, PhD**
**Division Director**

**Developing an online curriculum for AS to BS Radiologic Science professionals.** As we prepare for the 2018-19 academic year, we not only enjoy the successes of our programmatic accreditation certifications, we also are planning for the future. To this end, I will be working with Ty Fout, MS, RT(R) (MR), RN to develop an online curriculum for our AS to BS students that meets their needs. This comes at a time when Ohio State is considering not only a new general education set of courses, but also what constitutes a high quality online learning environment. I believe that this curriculum map will also pay dividends to our traditional program as we share online courses and best practices with the AS to BS option. Several key factors are helping us to leverage an AS to BS curriculum that is accessible and rewarding for students. *1. This year, we enrolled 8 new AS to BS students into our traditional curriculum. This is one of the largest cohorts we've admitted in several years. 2. The General Education model for the university has been accepted by the Provost and will now move forward for implementation over the next few years. I have been the Chair of the University Level Advisory Committee for General Education so I am very familiar with the GE template that is being implemented. 3. The Office of Distant Education and eLearning at OSU is a tremendous resource for our Division and Corey Tressler –Associate Director of Learning programs has been meeting with our faculty and his staff are highly supportive. 4. Lastly, but most importantly, we've had the assistance of Eduventures, the eLearning partners who are on contract with OSU to assist us in making our curriculum offering the best.* Eduventures has been a critical partner with the School's Health Sciences program and recently earning a #1 ranking by US News & World Report for online educational programs. See this article: https://news.osu.edu/news/2018/01/09/2018-online-rankings/

Eduventures has already completed a market analysis for our proposed AS to BS online major and these detailed results will be used by our faculty to make informed decisions on what to offer as a unique educational mix. OSU has already provided us with a list of new GE courses that are completely online and are part of the winning formula for Health Sciences. We will be adopting those as part of our curricular revamp. We also have sent Allison Stokes to the American Hospital Radiology Administrators (AHRA) prep course for the Certified Radiology Administrator credential so this will be a fundamental part of providing educational content our practicing radiologic professionals seeking their BS. Over the next few months, Ty and I will be drafting a curricular map that will need to be approved by the School's Curriculum committee, then the College of Medicine's Curriculum committee, and then the Office of Academic Affairs. We hope to get our AS to BS major approved at all levels and then begin working with both Eduventures and ODEE course designers to execute on our plan. **Dr. Randee Hunter is the faculty advisor for our AS to BS students and will hopefully be our program director of this effort.** Dr. Hunter worked for several years clinically as a Nuclear Medicine Technologist and went back to school to further her education. She is emblematic of what it takes to be successful as a working professional.

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**National Rankings for our Radiologic Science programs in 2018**

Again this year, Study.com has continued to rank our OSU **Radiation Therapy program as #4** in the country. Please see this link: https://study.com/articles/Best_Radiation_Therapy_Schools_List_of_Top_US_Schools.html

We are very proud of this continued ranking of our RTT program and it comes on the heels of being granted an 8 year accreditation by the Joint Review Committee on Education in the Radiologic Technology.

An update for this year, Collegechoice.net reviewed the top 25 ultrasound programs in the US continues to rank our **OSU Sonography/Vascular Technology program as #3**. Please see this link: https://www.collegechoice.net/rankings/best-ultrasound-technician-schools/

This coming year, we will be having the Joint Review Committee on Diagnostic Medical Sonography make a site visit to our program as part of our 5 year reaccreditation cycle. We continue to post our student and faculty outcome just like the Radiation Therapy program.

We are so proud to have been issued an **8 year accreditation certificate by the Joint Review Committee on Education in the Radiologic Technology, for our Radiography program**. This is the top level certificate and we are so grateful to the JRCERT and our site visitors for issuing this very strong validation of our OSU Radiography program. The site visitors made their onsite evaluation last year and made this recommendation to the JRCERT Board of Directors. Some of the reasons given for our top level certificate were: 1. Purchase of new x-ray equipment for our simulation lab, 2. Support from the OSU Radiology Department for Seth Sivard, MS, RT(R) as an instructor in our program. 3. The strength of our faculty for classroom instruction. Many thanks goes to Allison Stokes –Program Manager who led this multi-year process for programmatic accreditation. We believe this has already had a major effect on our national rankings as Study.com has ranked the **OSU Radiologic Science program as #1 in the US!!!** Please see this link: https://study.com/articles/Top_Schools_for_Radiological_Science_and_Technologies.html


**Professor Maryanna Klatt, PhD!**
Dr. Klatt has been working as part of the Ohio Bureau of Workman's Compensation grant to reduce the risk of musculoskeletal injuries in our Radiographers, Radiation Therapists, and Sonographers. Dr. Klatt is an internationally known integrative medicine researcher and is sharing her expertise with our undergraduate students to help them to have a long and healthy career. Dr. Klatt has developed exclusive sets of mindful yoga exercises for our students. **Stretching is a good way to get ready for work!!**

**Dr. Maryanna Klatt, PhD**

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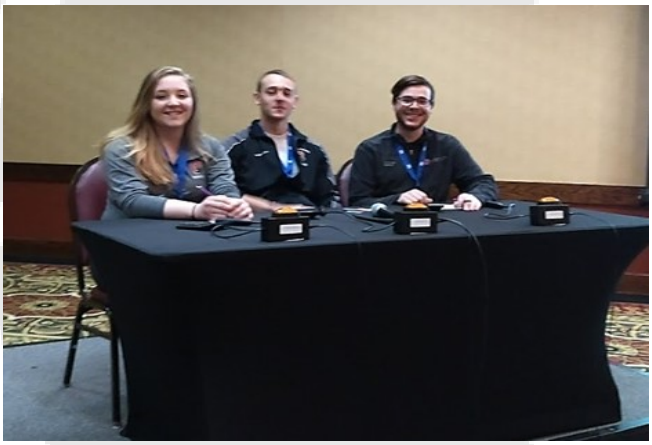
# ENERGIZING EDUCATION


We are very proud of our OSU Radiography Quiz Bowl team who competed at the Ohio Society of Radiologic Technology meeting, in Cincinnati. Our senior quiz bowl team competed in multiple rounds and had to outlast 25 other teams from Ohio, Indiana, and Kentucky. **We finished in 4th place which is a very impressive ranking for our team.** Each year, our Radiography seniors practice as part of their registry review prep and also try to relax and have fun. We are very proud of our graduating RT seniors!!

The main purpose of our Quiz Bowl efforts are to assist students with getting high scores on the ARRT board exam . That is the focus and the main prize for their efforts!! The Quiz Bowl team was again coached by Allison Stokes, BSRT(R)-Program Manager. This is an extra duty that Allison provides each year and we deeply appreciate her commitment to our team and the Radiography program.



The Radiation Therapy program also has a Quiz Bowl team that competed in Chicago, Illinois. This year's RTT team was Jackson Baumgartner and Morgan Jostpille. We are hoping that our OSU Therapy team is very competitive at this upcoming national meeting.

**Meet Christopher Brown, BS, RST Division's Administrative Assistant!** Chris has been assigned to our Division as our administrative assistant and over the past year has proven to be a huge asset for organizing meetings, handling fiscal issues, and also contributing to our research mission. Chris studied for a career in health care but now is preparing for graduate school in a more directed way –looking at Public Health and other areas of health care policy. We are so thankful for Chris's expertise and professional work ethics.

**Christopher Brown, BS**

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# RESEARCH HIGHLIGHTS

Nicole Stigall, BS, RDMS, RVT
Lab Manager

**Alexzandria Nicole Stigall, BS, RDMS, RVT –Lab Manager wins SDMS Educational Foundation grant.** Nicole assumed the role of manager of the Laboratory for Investigatory Imaging in September 2017 and quickly began working on managing ongoing projects as well as starting her own independent research. Nicole is in the 2nd year of her MS degree and her research is on the use of sonography to gauge abdominal adiposity. Working with Dr. Colleen Spees, Nicole began scanning cancer survivors who enrolled in Dr. Spees study to lose weight and eat fresh vegetables and lean meat provided by the Garden of Hope on Lane Avenue. Nicole uses the protocol that we piloted by Woldemariam et al. to obtain baseline measures, 6 months, and 1 year images of the patients in the study. Nicole has already put a manuscript forward that was accepted for publication titled: *Abdominal adiposity measured by sonography as a tool for determining disease risk.* It is scheduled to be in print with the July-August 2018 JDMS. As this adult study concluded, Nicole demonstrated a high correlation between her ultrasound measurements and those completed on Dual Energy Absorptiometry (DXA). This earned her the ability to pitch her expertise to Dr. Spees who has a 2nd study on gauging obesity among 4-5th grade students. Given that children should not be exposed to x-radiation, Nicole not only volunteered her technique of assessment, she went for grant funding. As one of the top scored grant proposals, **Nicole was awarded $2,500.00 for her continued research by the Society of Diagnostic Medical Sonography's Education Foundation.** Nicole is currently funded for her work by a grant through the Ohio Bureau of Workman's Compensation for 2 years.

Nicole has presented her early adult work at the OSUMC Trainee Day poster session and plans on an expanded poster for the SDMS meeting in Orlando, Florida in October. Nicole was recently inducted in the OSU Lambda Nu Honor Society and also nominated for the Outstanding MS Graduate award in HRS. Wow…..watch Nicole go!!!

**John P. Mickley, BS-Health Sciences wins 2nd prize in the Denman Undergraduate Research Forum.** John presented his research on automated blood pressure measurements at the 2018 Denman completion. The picture provided is John posing with Bruce McPheron, Executive Vice-President & Provost for Ohio State University (Lt) with Dr. Beth Hume, Vice Provost for Undergraduate Studies and Dean of Undergraduate Education (Rt). John won in the category of Devices and Medical Interventions.

# EXCELLENCE IN RESEARCH

**John P. Mickley, BS**

Dr. Evans had the pleasure of mentoring **John P. Mickley –BS Health Sciences** for the last 2 years. John was pre-Med with a minor in economics. John worked in the Laboratory for Investigatory Imaging on a variety of projects, most notably the outpatient ergonomics research funded by Midmark Corporation. Midmark not only funded the outpatient multi-office study but also provided John with equipment to study the effects of taking blood pressure with varied equipment and techniques. This was a natural fit for John who was preparing for medical school interviews. As the undergraduate research project grew, it became John's undergraduate thesis titled: *Pilot application of varied equipment and procedural techniques to determine clinical blood pressure measurements.* This thesis allowed him to graduate from the School of Health & Rehabilitation Sciences with honors and distinction. John was accepted at the Toledo School of Medicine and also at The Ohio State University College of Medicine. **We are so happy to have John continuing his progress to become a physician at OSU in the fall.** John will continue working in the lab over the summer to help Dr. Evans finish some last minute data connected with the Midmark project. We are also excited as John added some point of care ultrasound training to his busy academic schedule so…..who knows where that will take him. John was also the recipient of the SHRS's Award of Merit that is only presented to the top 2% of the graduating class. John follows in a succession of pre-Med students from our lab: Chris Kanner at the University of Cincinnati -2nd year med student; Zachary Walker at The Ohio State University - 3rd year med student. We are hopeful that John will be able to provide us with some valuable input on learning point of care ultrasound and perhaps also give us data on the new CAE simulator that is being donated to our lab. John's thesis is currently being considered for a peer-review journal article in the *Journal of Diagnostic Medical Sonography.* The hope is to provide clinical staff with important information on the new American Heart Association guidelines for hypertension and also the John Hopkins protocol for obtaining an accurate blood pressure on patients.

For more information on the John Hopkins –AMA BP Quick Check, we encourage everyone to download this checklist: https://www.ama-assn.org/sites/default/files/media-browser/public/about-ama/iho-bp-technique-quick-check_0.pdf

# RECRUITING NEW RADIOLOGIC SCIENCE STUDENTS: AVENGERS ASSEMBLE!

Believe it or not, it is time to start recruiting new students to our majors: Radiography, Radiation Therapy, and Sonography. We are again trying to play off the successful superhero theme to get students who do not know our major to consider our "superpowers". We are asking students to consider the *infinite war* on cancer and how they might use ionizing or non-ionizing radiation, to win that war. Help us to promote our careers and educational pathways by talking with prospective students, providing shadowing, and sharing personal stories. We need to answer the call of the US Department of Labor that predicts a shortage of our professions as they are growing faster than average.

We also are using the glove of Thanos to provide students with the deadlines for applying to our major. Here is the analogy: students for the next admissions cycle by adding stones:

1. Soul stone –orange: search your soul to find the right occupation=RT, RTT, or DMS

2. Mind stone –yellow: focus on your grades to make sure you are competitive

3. Power stone –purple: think which occupation gives you the most power- ionizing or non-ionizing

4. Reality stone –red: this is the stone of wish fulfillment so volunteering and shadowing will give the real idea of the occupations

5. Space stone –blue: think how you can get from where you are to being the occupation you want

6. Time stone –green: the time is NOW for you to apply

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# UPDATES ON EDUCATIONAL SUCCESS

## THE RISK OF WORK-RELATED MUSCULOSKELETAL INJURIES FOR RADIATION THERAPISTS

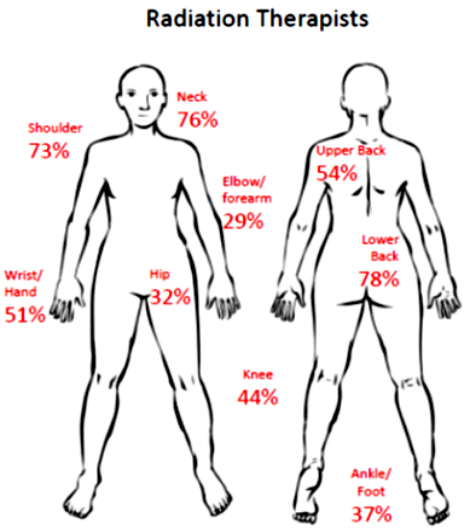
Haley Griffin, MS, RT(T)

**Haley Griffin, MS, RT(T)** has just completed her MS degree. She analyzed survey research into the risk of work-related musculoskeletal injuries that could be harming the Radiation Therapy occupation. Haley and Dr. Evans appealed to the ARRT for permission to survey a cohort of Radiation Therapists (RTTs). We are very indebted to the ARRT for providing us a list of over 2,400 names of RTTs across the US. With an online survey instrument, Haley was able to gather original data on the prevalence of this hidden problem for RTTs and likely other medical professionals.

Only 162 RTTs out of the total 222 subjects completed the survey in its entirety. Therefore, this analysis was based on 162 RTTs who completed the entire survey instrument. The response rate based on the 162 RTTs fully completing the survey gave us a completion rate 6.7%.

The majority of those RTTs who completed the survey were greater than 30 years of age, with the highest percentage (32%) of RTTs being further subdivided as being 50 years and older. It was also important to record the distribution of the RTTs length of work in the occupation. To that end, the majority of the RTTs surveyed (29%) had been working in the profession for over 21 years. Those responding indicated that 80% were working in pain as a RTT.

Additionally, the RTTs who responded provided specific anatomical areas where their pain was located. See the image provided to the right. The majority of RTTs stated that their pain was located in the following sites: low back (78%), neck (76%), and shoulders (73%). A majority of RTTs responded that they did greater than 19 treatments or procedures in a normal workday, with most of these treatments or procedures taking 11-15 minutes. The type of patients that respondents found to be the most physically demanding, were elderly patients.




Dr. Carolyn Sommerich, PhD

Haley was invited to present these research results at the upcoming ASRT meeting and hopefully some ergonomic solutions can be devised to help reduce this alarming risk or work-related musculoskeletal injuries for RTTs.

**Meet Dr. Carolyn M. Sommerich, PhD!** Dr. Sommerich is an engineer and research scientist who was educated right here at Ohio State. Dr. Sommerich's research and passion is providing safe spaces for workers to perform at their optimum. Dr. Sommerich is a critical partner with our educational program and research lab as we try to promote Total Worker Health. Dr. Sommerich is an Associate Professor in the OSU College of Engineering and is a Certified Professional Ergonomist. She is also grant reviewer for CDC-NIOSH.

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# EDUCATIONAL OUTCOMES

## Points of Pride for our Radiologic Sciences Programs

- OSU's RST Class of 2020 admitted 39 new students and 8 AS to BS
- 100% of Sonography graduates were credentialed with ARDMS at graduation.
- Leigha Frazier –Rad, awarded the Columbus Rotary Phoenix Scholarship 2018
- **Clinical Instructors of the Year** are: Matt Butler-Rad, Andreana Waychoff—Sonography, and Fikadu Hailu—Radiation Therapy- THE BEST!
- Angela Butwin won HRS Instructor Award; Kevin Evans won the HRS Service Award

## CONGRATULATIONS CLASS OF 2018!

We now have 39 new graduates ready to make their mark on the delivery of patient care!

| | |
|---|---|
| 9 sonographers | 19 radiographers |
| 10 radiation therapists | 1 AS to BS graduate |

## OSU Sonography senior works to find an objective way to assess renal dialysis patients.

Amanda Jensen, Sonography senior is working with Drs. Nelms and Evans of a project to find a way to objectively assess patients who may be malnourished as they wait for a renal transplant. Amanda has been working in the simulation lab to perfect a series of objective assessments that can be performed by the renal staff who use a laptop ultrasound unit. Amanda and Dr. Evans have adopted a scan protocol that was reported by Minetto et al. (2016). This scan technique will be used to assess upper arm muscles as well as get anthropometric measures and skin thickness. All of these parameters could point to muscle wasting among this very fragile group of patients.

Amanda is working on volunteers in the lab but will hopefully take these measures out to renal clinics and dialysis centers in the central Ohio area. This will likely be her undergraduate research project in 2019.

## LOOKING FOR A WAY TO PAY IT FORWARD?

We invite you to get involved with our students by giving to the **Development Fund,** guest lecturers, offering a clinical internship, etc. We are very excited about recent donations of gently used imaging equipment. This year, we hope to replace some of the ultrasound exam beds in the simulation lab. Please think about ways that you can get involved!!

**Use our fund number: 307893**

**Contact Dr. Evans at 614-688-4535. We would love to get you involved with our programs.**

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# DIVERSITY IN EDUCATION

**Mulubrhan M. Woldemariam, BA, BS, RDMS, RVT**

## Promoting a Diverse Workforce in Sonography

Journal of Diagnostic Medical Sonography 2018, Vol. 34(2) 83–84

I was asked to provide an editorial that reflects my perspective on the value of a diverse workforce within diagnostic medical sonography and vascular technology. I am a US citizen who immigrated to the United States from Ethiopia, where I worked in education and women's health development training. This type of work afforded me a chance to interface with a variety of diverse workers. Ethiopia is a multiethnic, multicultural, and multilingual nation, which meant that it was important to show respect for different traditions and customs and ensure that the workplace provided equal access to services. I came to the US with my wife to not only establish her career as a physical therapist but also to become part of the health care community myself. The transitional path I took from being a language interpreter for patients in hospitals to a graduate of The Ohio State University with a BS degree in sonography/vascular technology has been quite a journey. It has provided me with a unique perspective to view the impact of diversity on the workforce in my new profession. As the current patient base diversifies, it is imperative now more than ever that we modify our practices to support patients and care- givers of different backgrounds, religions, and beliefs.

Many studies have reported that there are considerable differences in the quality of health care and health status among ethnic and racial minority groups in the United States.[1-3]

For example, in comparison to African Americans, Caucasians are 78% more likely to receive revascularization after angiography. African Americans wait nearly twice as long for kidney transplants and are 67% more likely to die from breast cancer once diagnosed.[4] African American and Hispanic youth are highly vulnerable to diabetes compared to their Caucasian counterparts. Such disparities in the health care sector translate into actual disparate outcomes for the health of diverse patients.

This evidence points to the need for improved access to health care services for underserved patients. To address these inequities, we must also examine how prepared our workforce is to deal with these issues. Some interesting observations about the health care workforce are that in comparison to Caucasian physicians, Native American, Hispanic, and African American practitioners are more likely to provide services to underserved populations and provide treatment to significant numbers of minority people regardless of their income level. In addition, Hispanic and African American physicians, irrespective of gender distinction, are more likely to provide health care services to Medicaid and poor people.[4] To address all the health care concerns of a diverse population, we need more minority health care providers, but we also need our existing health care workers to become skilled in providing culturally sensitive health care to minority populations.

Diversity in the educational classroom helps facilitate a more reflective workforce and can improve outcomes in the health care sector.[4] Diversity infused into health care education provides quality-based education and training to professionals, facilitating interaction with people from different ethnic and racial...

backgrounds. This in turn facilitates the development of teams of diverse students working together to solve problem-based assignments and improves the knowledge of providers about their patients' cultural, ethnic, and racial differences and similarities. The downstream effect is hopefully an added awareness and improvement in the ability of physicians and sonographers to treat patients with more diverse knowledge and sensitivity. The development of a culturally competent health care system is not a one-time training event; it requires multilevel strategies and involves both the provider and the diverse consumers of health care.[5]

In the health care sector, increasing the overall rate of minority physicians and sonographers will bring significant improvements in providing access to quality-based health care services for minority populations. In many cases, diverse health care professionals have a passion to work in areas that are underserved, and they would prefer to help meet the needs of these patients.[6]

As sonography increasingly becomes the imaging modality of choice in tandem with advancements in sonographic equipment and research, there is an increased demand based on safety and cost-effectiveness. Expanding employment needs creates opportunities to hire qualified individuals from minority populations whose diverse perspectives may also add new ideas or methodologies to sonographic patient care. Having diversified sonographers on staff also helps to promote cultural competence among health care colleagues, and the result is a more positive experience for patients.

In conclusion, a sonography workforce that truly represents the racial and ethnic makeup of the US population can play an important role in providing high-quality care, better patient choice, improved satisfaction, and ultimately, improved health outcomes.

## References

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# CENTRAL OHIO ULTRASOUND MEETING: OB/GYN UPDATE

**Join us for the annual COUS meeting at Ohio State! This year the topics include updates for current practice in OB/GYN.**

Pamela Foy, MS, RT, RDMS, FSDMS is our meeting coordinator, so you can be assured that our speakers and topics will be very translatable.

Hold this date for the meeting and several CME:
**Saturday August 25**

*Meeting agenda:*

Pamela Foy MS RDMS
- Ultrasound of the Diabetic Patient During pregnancy

Heather Frey MD
- Role of Cervical Length Screening in Obstetrics

Britton Rink MD
- Sonographic Findings of Common Genetic Disorders

Laura Montgomery MS LGC /Allison Spitale MS LGC
- First Trimester Screening Examinations

Kara Markham MD
- Utilization of 3D Ultrasound for Fetuses with Anomalies

Jacqueline Rohl MD
- Gynecologic Ultrasound Examinations, Correlation with Other Imaging Modalities

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