

Advanced Radiology Services Foundation

ANNUAL REPORT FOR 2020

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Dear friends:

The ARS Foundation was initiated by the members of Advanced Radiology Services, PC with the mission to use charitable giving to improve the field of radiology. Our method is to be a catalyst, looking for strategic ways that our giving can be multiplied by outside resources to strengthen other organizations.

In a year of tremendous challenges from the coronavirus pandemic, this has again been a successful year for the Foundation. This annual report provides a moment to report those successes to you.

- **Radiopaedia.org:** This year we concluded our first grant of support to the excellent free open-access radiology website radiopaedia.org, lead by Dr. Frank Gaillard. Our grant helped develop its technical capacity. This has permitted easier uploading of image series and teaching cases using DICOM standards.
- **Emory University Center for Ethics/Michigan State University:** In 2020, the Foundation concluded its first grant to Dr. John Banja as the lead of an Emory University Center for Ethics / Michigan State University project on the non-interpretive aspects of radiology that have been only superficially discussed until now. This grant has already generated conference presentations, published articles, and a new podcast with radiology luminaries. An interview with Dr. Banja about his work for this grant can be read by following this [LINK](#).
- **Harvey L. Neiman Health Policy Institute through the American College of Radiology (ACR) Foundation:** Our goal in strongly supporting this institute has been to create a national "think tank" for radiology health policy research. We have been recognized by the ACR for our leadership work. After our first year of funding, we created a challenge match to strengthen the institute's fundraising, now in its fifth year. This challenge has again received a much greater fundraising response than expected. Our challenge grant has been matched first by the ACR Foundation and then matched again by individual and group donors. Equally important, our leadership work on this topic has helped catalyze a shift in the ACR Foundation's strategic direction toward supporting health policy research. We have been offered a position on their advisory board and have nominated Dr. Andy Moriarity for that position.

- **Radiological Society of North America (RSNA):** Our continued support of the RSNA Research and Education Foundation was recognized as a visionary support group at the silver level. The RSNA Foundation has achieved for each \$1 donated an average of a \$50 match from other funding sources such as the National Institutes of Health.
- **Michigan State University:** This year we started funding three research projects driven by Dr. Adam Alessio at MSU. The three projects are development of educational materials for radiologists about artificial intelligence (AI), participation in radiology AI competitions, and new research for detection of cervical spine fractures. In 2020, we began funding Dr. Sai Ravishankar through MSU for research involving methods to use AI to speed up the acquisition of MRI images.
- In addition to these excellent projects, the ARS Foundation matched funding from donors on behalf of Daniel Shumaker to support the Endowed Scholarship awarded annually to a medical student at MSU.

At the end of 2020, efforts were made to reach out to individual donors for fundraising. In this short amount of time, the ARS Foundation received donations from 32 individuals raising a total of \$66,000.

In addition, with the excellent work of Cheryl Buehler as our Treasurer, we will continue a successful investment plan to promote our Foundation's financial future; this has resulted in a 2020 annual return with a net gain of \$112,234. This gain in addition to the \$66,000 contributions received from individual donors at the end of the year, supported the ARS Foundation in payment of the \$358,550 charitable contributions made in 2020.

I am grateful that we have been given the opportunity to be good stewards of the Foundation's resources and in the faith of its donors. We plan to maintain this path for the upcoming years.

Warmly,
Dieter

Rolf Dieter Hollstein, MD MPH, on behalf of the ARS Foundation Board

About the company

MISSION

The ARS Foundation is dedicated to supporting organizations that improve the health of communities our members serve and investing in the future of radiology.

CORE VALUES

The ARS Foundation is operated in a transparent fashion with a clear and consistent grant selection process in order to respect our supporters and maintain their confidence.

- Provide leadership for other radiology groups for their charitable activities.
- Make a positive difference.

2020 BOARD OF DIRECTORS

Thomas Archambeau, MD

Leonard Coiner, MD

Ryan Duhn, MD

Susan Ervine, MD

Brian Fedeson, MD

Rolf Dieter Hollstein, MD

Leena Mammen, MD

2020 OFFICERS

Rolf Dieter Hollstein, MD – President

Thomas Archambeau, MD – Vice President

Cheryl Buehler – Treasurer

Laura Perkovic – Secretary

2020 Donors

Visionary Level

- Ryan and Valerie Duhn
- Rolf Dieter Hollstein, MD
- Charles and Mary Luttenton
- David and Kirsten Rawson

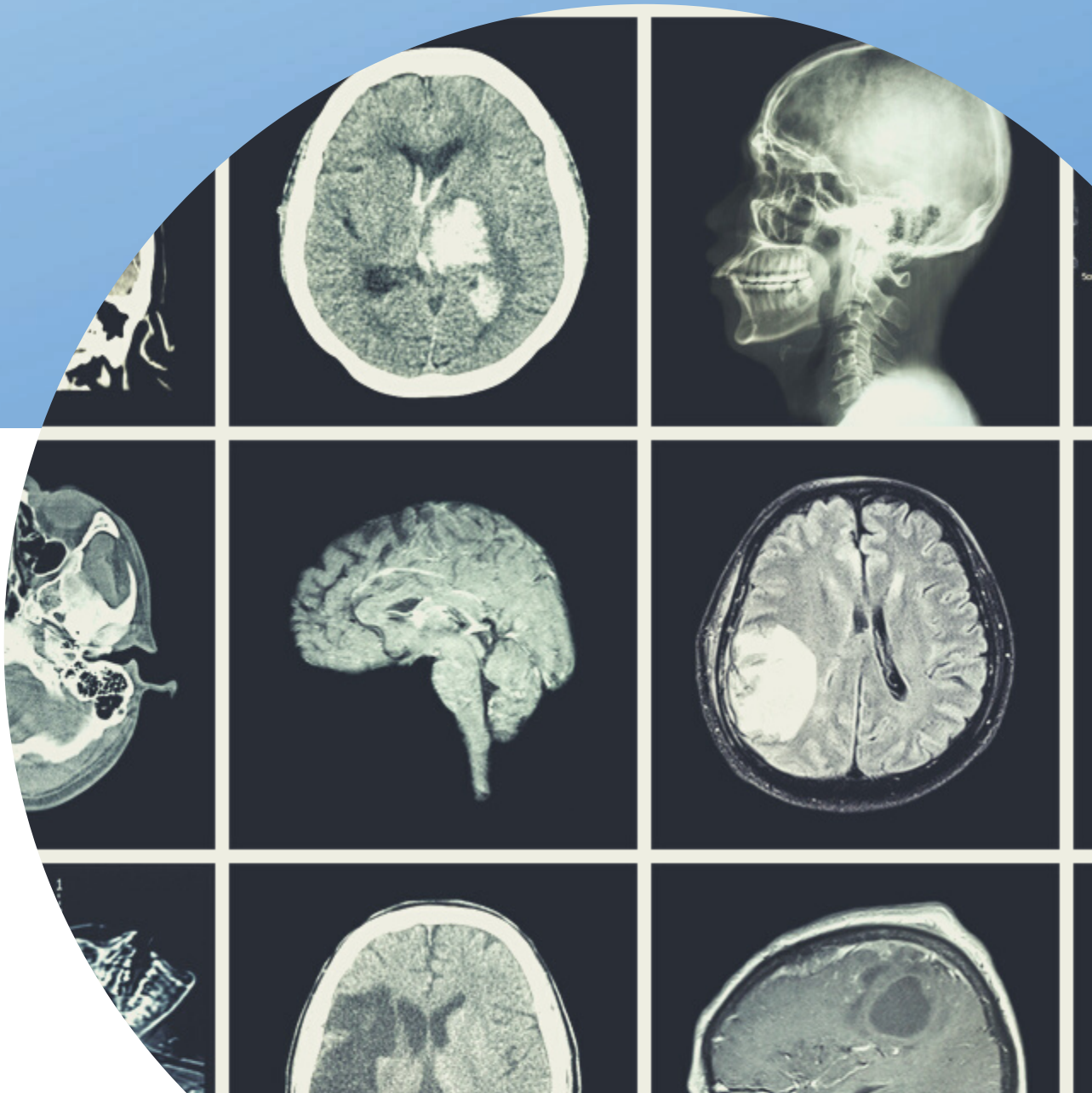
Leadership Level

- Dennis and Jennifer Bruce
- Leonard and Marjorie Coiner
- Katy and John Humphrey
- Michael F Knox, MD, FACR
- Ryan Konwinski, MD
- Ann and Steve Koss
- Jon-Eric Notarnicola
- Michael and Jennifer Ryan

Team Player Level

- Jill and Tom Archambeau
- Christopher Buchach, MD
- Jeffrey and Katherine Flermoen
- Phil and Katie Hartgerink
- Roman Hyszcak
- Nathan J Jordan, MD
- Richard and Beth Lichtenberg
- Eric Lindgren, MD
- Andreea Moore, MD
- Andy Moriarity
- Todd Mulderink, MD
- Geoffrey Remes
- Charles and Ruth Swallow
- Lisa Walker
- Andrew and Michele Woodrow

2020 PROJECTS



- **Radiopaedia.org**

The ARS Foundation made their second donation to Radiopaedia.org in 2020. Radiopaedia.org is one of the leading online radiology medical resources used across the globe. In 2020, they served over 33.9 million individuals (a 24.3 million, +39%) increase from 2019. Our 2020 donation assisted the development of stack optimization and DICOM uploading. These technical capacities allow easy upload of more teaching cases that will be available for free to all visitors including low and middle income countries.



- **Emory University Center for Ethics / Michigan State University**

A grant was provided to Emory University Center of Ethics for the second time in 2020. Dr. John Banja's research focuses on the underappreciated critical issues for radiologist learning about artificial intelligence and radiology. Dr. Banja launched an AI in radiology podcast in the 4th quarter of 2020. Podcasts include topics such as selling data, bias, and interface with the public sector, medical malpractice, and executive leadership perspectives on AI. Podcasts will be published on a monthly basis throughout 2021. Multiple articles on this topic were published, monthly AI journal club meetings in collaboration with MSU, and national public speaking engagements on AI in radiology are occurring.



- **Harvey L. Neiman Health Policy Institute through the American College of Radiology (ACR) Foundation**

The ARS Foundation has donated to the ACR Foundation to support the Harvey L. Neiman Health Policy Institute since 2015. In 2016, we added a Match Challenge that provided the ACR an incredible incentive for radiologists and radiology organizations across the US to make an investment in the future of radiology. This program tripled the impact of our gift. One of our physicians, Dr. Andy Moriarity is now serving on the Health Policy Institute Advisory Board.



- **Radiological Society of North America (RSNA) – Research & Education Foundation**

The ARS Foundation has donated to the RSNA R&E Foundation through the Visionaries in Practice (VIP) Giving Program since 2013. Through this program patient care is improved through support of grant researchers and educators who will advance radiologic research, education and practice.



- **Michigan State University Institute for Quantitative Health Sciences and Engineering**

In 2020, the ARS Foundation provided donations to MSU for research lead by Adam Alessio, PhD and Sai Ravishankar, PhD. Funds for Dr. Alessio's research are being used to investigate the use of deep learning to help decrease interpretation error for spinal fracture detection and characterization. This research is being used to engage and support team participation in AI challenge competitions sponsored by RSNA and other organizations. Educational learning modules related to AI in diagnostic medicine have been created, including in-person educational sessions.

Funds for Dr. Ravishankar support the development of robust machine learning methods for accelerating MRI scan and image reconstruction times.

- **Michigan State University – Daniel Shumaker, MD Memorial Endowed Scholarship**

The endowment was established in 2018 to honor the life, leadership and friendship of a colleague, and his advocacy for the profession of radiology and the patients Dr. Shumaker served across the state of Michigan. The award recognizes the multifaceted complexity of the human experience, and acknowledges that substantial contributions live beyond a life prematurely ended by addiction and mental illness. The endowment seeks to encourage talented young physicians to innovate and impact society through engaged careers in radiology, behavioral medicine and/or neuroscience.



Financial Position

FY 2020



Advanced Radiology Services Foundation

Statement of Financial Position
December 31, 2020

ASSETS

Current Assets

Cash: Investment

1,082,658

Cash: Operating

73,424

TOTAL Current Assets

\$1,156,083

TOTAL Assets

\$1,156,083

Net Assets

Net Assets – Unrestricted

1,349,117

Change in Net Assets–Current Year

(193,034)

Total Net Assets

\$1,156,083

Advanced Radiology Services Foundation

Statement of Financial Activities
December 31, 2020

Revenue

Investment Income
Contributions Received
Interest Income

112,234
66,000
257

Total Revenue

\$178,491

Expenses

Contributions-Restricted
Fees Other – Unrestricted

358,550
12,975

Total Expenses

\$371,525

NET INCOME/ (LOSS)

\$(193,034)

Advanced Radiology Services Foundation

Board of Directors Contribution Report For the Year Ending December 31, 2020

	2015	2016	2017	2018		2019		2020	
<u>Charitable Organization - Unmatched</u>	<u>Actual</u>	<u>Actual</u>	<u>Actual</u>	<u>Approved</u>	<u>Spent</u>	<u>Approved</u>	<u>Spent</u>	<u>Approved</u>	<u>Spent</u>
Health Policy Institute (American College of Radiology Foundation)	100,000	-	100,000	100,000	100,000	100,000	100,000	25,000	125,000
RSNA Research & Education Foundation	75,000	75,000	75,000	75,000	75,000	75,000	25,000	25,000	25,000
Radiopaedia.org						60,000	7,500		52,500
AI Ethics Project at Emory University						50,000	25,000		25,000
Shumaker Scholarship Grant				25,000	21,413			11,050	11,050
MSU for multiple AI Projects (Adam)								120,000	90,000
MSU (Sai) Grant fo Fast MRI AI								30,000	30,000
Association of University Radiologists R & E Foundation			50,000	25,000					
Total Spent 2015-2017	<u>\$ 175,000</u>	<u>\$ 75,000</u>	<u>\$ 225,000</u>						
Total Approved				<u>\$ 225,000</u>		<u>\$ 285,000</u>		<u>\$ 211,050</u>	
Total Spent Year- to- Date					<u>\$ 196,413</u>		<u>\$ 157,500</u>		<u>\$ 358,550</u>

Beneficiary Stories:

Radiopeadia.org

In 2020, Radiopeadia served 225 million pages (180 million, +25%) to over 33.9 million individuals (24.3 million, +39%) from every single country on earth. Over 12.3 million (8.3 million, +48%) of these readers were from the United States, which represents 36.6% of the overall traffic, and 381,000 from Michigan alone (280,000, +36%).

During the year, over 5,700 cases (3,200) were contributed and 1,338 new articles (1,138) were written, bringing our total to public 40,551 cases (34,788, +17%) and 14,776 articles (13,438, +10%).

The ARS Foundation is recognized on the [Radiopeadia.org](https://radiopeadia.org) homepage. There is a direct to the ARS Foundation Webpage on the ARS Website.

*Please view a recording from Dr. Gaillard: [LINK](#)

The screenshot displays the Radiopeadia.org homepage. At the top, there is a navigation bar with links for ARTICLES, CASES, COURSES, and QUIZ. Below this, a mission statement reads: "Radiopaedia's mission is to create the best radiology reference the world has ever seen and to make it available for free, for ever, for all." To the right, statistics show 41173 cases and 14873 articles. The "Case of the Day" section features a Medulloblastoma case contributed by Assoc Prof Frank Gaillard, including an MRI image and histology details. Below this is a promotional banner for "ELBOW INJURIES X-RAY INTERPRETATION" by Andrew Murphy, offering 12 months access for \$7. The "What is Radiopaedia.org?" section describes the platform as a rapidly growing open-edit educational resource. A "Feature sponsor" section highlights the Advanced Radiology Services Foundation. On the right side, there are sections for "Recent news" (including tweets) and "Recently published cases" (listing various medical conditions like Anterior horn PIRADS 5, Primary colonic lymphoma, Ovarian endometriomas, and Subarachnoid bleeding).

Beneficiary Stories:

Emory University Center of Ethics

The AI in radiology podcast webpage can be found at the following [LINK](#)

A list of Publications from 2020:

- Banja, J. 2020. AI hype and radiology: A plea for realism and accuracy. Radiology: Artificial Intelligence 2(4):e190223.
- Banja, J., Rousselle, R., Duszak R., Safdar, N., Alessio, A.M. 2020. Sharing and selling images: Ethical and regulatory considerations for radiologists. JACR. [LINK](#)
- Banja, J.. 2020. How might artificial intelligence applications impact risk management? AMA Journal of Ethics, 22(11):E945-954. doi:10.1001/amajethics.2020.945.
- McCoy, L.G., Banja, J.D., Ghassemi, M., Celi L.A. 2020. Ensuring machine learning for healthcare works for all. BMJ Health & Care Informatics, 27(3) e100237; DOI: 10.1136/bmjhci02020-100237
- Banja J, Alessio A. In progress. Bias Mitigation in AI: Laudable but Not Problem Free.



Make your own podcast for free



AI, Radiology and Ethics: A Podcast Series

By Emory University Center for Ethics

The most recent generation of artificial intelligence technologies are introducing a host of ethical problems to radiology practice and health care delivery. Join Dr. John Banja, a medical ethicist at Emory University's Center for Ethics, as he and his guests discuss the ethical challenges that artificial intelligence presents. These podcasts are made possible by an unrestricted grant from the Advanced Radiology Services Foundation. For articles and research, please visit ethics.emory.edu/what-we-do/research/ai-radiology.html. For questions, please email jbaja@emory.edu.

Listen on Spotify

Message



WHERE TO LISTEN



Beneficiary Stories:

Michigan State University – Institute for Quantitative Health Sciences and Engineering

*Please view a video from Dr. Alessio: [LINK](#)

Michigan State University – Daniel Shumaker, MD Memorial Endowed Scholarship

"We are immensely grateful for the scholarship support received from the ARS Foundation." – Susie Ziegler, Assistant Director of Development.

Fact Sheet about MSU College of Human Medicine students:

- There is currently only one full-ride scholarship to our college
- 1 out of 8 students receives private scholarship support
- \$241K is the average debt with which our students graduate

*Please view a powerful video from a recent recipient of the scholarship:
[LINK](#)

Beneficiary Stories:

ARS Foundation,

It's difficult to know where to begin when considering the impact of the Daniel Shumaker, MD Memorial Endowed Scholarship. While I'm sure the same could be said about most if not all endowments, this particular one sheds light on a topic that has been hidden in the darkness for far too long.

The most immediate and arguably most important impact that comes to mind is the assurance that physician wellness is addressed in a proactive, supportive way. Through the generosity of our donors, scholarships have been provided to three individuals with aspirations to address physician wellness through careers in radiology, behavioral medicine, neuroscience and/or organized medicine. With the hope of furthering the reach of this mission, we applied for and received a grant through Kent County Medical Society Alliance Foundation in the fall of 2019. This particular grant funded our second annual scholarship recipient reception at which Dr. Richard B. Gunderman was the keynote speaker. During the event, the greater Grand Rapids and Kent County medical communities were engaged in conversation around the acknowledgement and prevention of physician burnout.

Albeit personal, I cannot discount the positive impact that this endowment and each of you have had on my daughters and I. Addiction and mental health can feel shameful, especially when they result in premature death. To know that Dan's legacy will live on by shining light on this arena and positively affecting future generations of physicians and their families fills us with hope.

Lastly, we are incredibly grateful for the generosity of the ARS Foundation contributions, ARS member contributions, and the unwavering dedication of Dr. Junewick and Dr. Coiner, whose friendship Dan cherished. We are humbled by your support.

With much gratitude,
Debbie, Lindsay + Kate Shumaker

Future Direction:

Based on the success of the first grant, we expect to continue supporting radiopeadia.org with a second grant. In 2021, our support will be transformed into a match funding model. This new grant will further technical upgrades including case optimisation tools and image annotation.

Similarly, we plan to extend a second grant to the Emory University Center for Ethics / Michigan State University grant on non-interpretative aspects of AI and radiology. To assist in their search for fundraising partners, this grant will also be transforming to matching grant model.

During the four years of catalytic support of matching grants to the ACR Foundation directed to the the Harvey L. Neiman Health Policy Institute, we have seen a positive restructuring of their fundraising infrastructure. In 2021, we expect to continue our support at a lower level in recognition of their improved donor base and fundraising.

In 2021, we plan to continue supporting the RSNA Research and Education Foundation. We continue to explore possible support for a radiology education podcast in partnership with RSNA.

The ARS Foundation will follow through with the multiple grants for research projects and education in radiology and AI with MSU. As we evaluate the progress of these projects, grant renewal will be determined for 2021.

We will endeavor to increase our own individual fundraising. And as always, we continue to scout for new projects. The ARS Foundation is considering further funding for provider wellness programs in radiology.

As we have done in the past, we plan to continue our strategies of:

- Identifying underappreciated opportunities
- Developing matching grants
- Creating alliances in order to use our funding capacity as a catalyst for improving the health of our communities and investing in the future of radiology