61ST ANNUAL MEETING | SEPTEMBER 15-18, 2019 MARK CONTRACT SEPTEMBER 15-18, 2019 MAR

'Our promise, our future,' Ted DeWeese, MD, FASTRO, delivers Presidential Address



The world is aging rapidly. In the United States, 25% of the population will be older than 65 within 25 years. After noting that cancer is a disease of aging, Dr. DeWeese introduced the talented, multidimensional doctor Lewis Thomas, MD. Dr. Thomas developed a paradigm for effectively treating disease at a lower cost, and Dr. DeWeese argued medicine – and radiation oncology specifically – would do well to learn from and more widely implement this model.

Highlighting the groundbreaking work of several colleagues, Dr. DeWeese said that next generation treatment can be faster and more effective – and it is possible that such treatment can also be cheaper. Radiation therapy is 9% of the U.S. cancer spend this year. The total global cancer spend for the year will be a staggering \$1 trillion. So a terribly important question remains: How can we better serve patients in the most efficient way possible?

Dr. DeWeese offered helpful suggestions for a path forward, including working with ASTRO's sister organizations, fostering diversity, meeting patients where they are and continuing to question best practices and the particular outcomes we want as a field. "It requires innovation and collaboration to get there," Dr. DeWeese said. "This is what's possible when we collaborate, we can move forward and cure the incurable."

ASTRO President Theodore DeWeese, MD, FASTRO, addressed attendees yesterday afternoon with a forward-looking message of hope and innovation. Dr. DeWeese's presidential address, "Our Promise, Our Future," offered a deeply personal and scientifically rigorous assessment of the current state and bright future of radiation oncology.

Beginning and ending his address with poignant patient stories, Dr. DeWeese spoke of young patients diagnosed with bilateral retinoblastoma and sickle cell disease. Both patients had harrowing journeys of treatment but, thanks to medical innovation and dedicated, creative doctors, were eventually cured. These patients now lead normal lives. What does radiation therapy contribute – and what can it contribute – to the project of healing, the ASTRO president wondered.

Radiation therapy is central to cancer treatment. Dr. DeWeese noted that virtually everyone in the audience has cured patients of cancer, alleviated suffering and preserved families. The treatments utilized 20 years ago resembled the stone ages compared to now, he argued. Radiation therapy is tremendously successful, with 3.5 million living patients in the United States showing no evidence of disease. While radiation therapy may be seen as yeoman's work, this is not necessarily a bad thing. "We are absolutely, positively the future. Radiation oncology is not a passive cancer treatment," he said.



DON'T MISS

Cancer Breakthroughs Session

Wednesday, September 18 9:15 a.m. – 11:00 a.m. The final day of the ASTRO Annual Meeting will feature an inspirational closing session, Cancer Breakthroughs, the result of collaboration with four of the major oncology associations to share their key science from meetings throughout 2019. This session will highlight the most important breakthroughs in cancer research and the potential breakthroughs on the horizon. Join us Wednesday, September 18, from 9:15 a.m. to 11:00 a.m., in Room W375A/B/C/D.

Moderated by Lisa Kachnic, MD, FASTRO, and Theodore DeWeese, MD, FASTRO, the session gets under way at 9:15 a.m. with scientific reviews from ASCO, featuring Lori Pierce, MD (9:20 a.m.), AACR, featuring Robert Den, MD (9:45 a.m.), AAPM, featuring Kristy Brock, PhD (10:10 a.m.), and RRS, featuring David Kirsch, MD, PhD, FASTRO (10:35 a.m.).

Some of the topics include a Phase III trial of premenopausal HR+/HER2- advanced breast cancer patients treated with endocrine therapy; a dose escalation trial of the Wee1 inhibitor AZD1775; multiparametric breast MRI radiomics; and FLASH radiation therapy.

Attendees can earn up to 1.75 AMA PRA Category 1 CreditsTM for attending this session. Watch for Thursday's digital daily email for a detailed recap of the breakthroughs highlighted during this session.

STAGE SNSCLC IS TREATED WITH CURATIVE INTENT^{1,2}



Learn more at the AstraZeneca booth

References: 1. Ramnath N, Dilling TJ, Harris LJ, et al. Treatment of stage III non-small cell lung cancer: diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest.* 2013; 143(suppl 5):e314S-e340S. **2.** Socinski MA, Evans T, Gettinger S, et al. Treatment of stage IV non-small cell lung cancer. Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest.* 2013; 143(suppl 5):e314S-e340S. **2.** Socinski MA, Evans T, Gettinger S, et al. Treatment of stage IV non-small cell lung cancer. Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest.* 2013;143(suppl 5):e341S-e368S.



et al.

Press Highlights

SUNDAY NEWS BRIEFING

Noninvasive radiation treatment

with high-risk heart arrhythmias

University School of Medicine in St. Louis,

Treating high-risk heart patients with

a single, high dose of radiation therapy

than two years, according to a study by

In collaboration with Phillip Cuculich,

radiation oncology at the Washington

Dr. Robinson and his team developed

a noninvasive, outpatient procedure for

called EP-guided noninvasive cardiac

radioablation (ENCORE). This novel

therapy fuses electrical and imaging data

responsible for arrhythmias, then targets

it with a single dose of stereotactic body

home immediately after treatment.

radiation therapy. ENCORE requires no

MONDAY NEWS BRIEFING

PACIFIC survival rates explained

Andreas Rimner, MD, Memorial Sloan

A new analysis of survival data for the

adding the immunotherapy cancer drug

significantly decreased the recurrence of

lung cancer, both in the chest area and in

distant sites outside the chest. The update

provides greater insight into the landmark

study that changed the standard of care

non-small cell lung cancer (NSCLC). In

an independent evaluation of the patterns

Continued on page 4

3

Design/Production:

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for patients with stage 3 unresectable

of disease progression for 713 patients

randomized to durvalumab (n=476)

or placebo (n=237) after completing

Issue Number 2 | Tuesday/Wednesday Edition

ASTRO Daily News 2019

Publisher:

Laura I. Thevenot

Editorial Director:

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randomized, Phase III PACIFIC trial finds

durvalumab to radiation and chemotherapy

Kettering Cancer Center, et al.

general anesthesia and allows patients to go

to pinpoint scar tissue in the patient's heart

treating ventricular tachycardia VT

Clifford Robinson, MD, and colleagues.

MD, associate professor of cardiology and

University School of Medicine in St. Louis,

can dramatically reduce episodes of

rapid, abnormal heartbeats for more

Clifford Robinson, MD, Washington

offers long-term benefits to patients

SCHEDULE AT A GLANCE Tuesday, September 17

6:45 a.m. – 8:00 a.m. ASTRO/NCI Diversity Symposium 🔳 1.0 CME Pathways for Recruiting and Retaining Women and Under-represented Minority Clinicians and Physician Scientists into the Radiation Oncology Workforce Room: W192

8:00 a.m. – 8:30 a.m. Science Highlights 0.50 CME Central Nervous System Cancer

Room: W181

8:00 a.m. - 9:00 a.m.

- Education Sessions 1.0 CME • EDU 09 – Break Through the Taboo: Discussing
- Intimacy and Sexuality with Female Cancer Patients Q Room: W175
- EDU 10 Pancreas and Hepatobiliary Practice Updates
- Room: W194
- EDU 11 2020 Radiation Oncology Coding and Coverage Update

• EDU 12 – Proton Therapy Refresher

om: W185

• EDU 13 – Management of Challenging Cases: Adult Soft Tissue and Bone Sarcomas Room: W184

8:00 a.m. - 9:00 a.m.

ii-oral Scientific Session 1.0 CME MO 11 – Biology 4 – Innovative Prediction of Tumor Response Room: W186

8:00 a.m. – 9:00 a.m. Oral Scientific Sessions 10 CMF

• SS 17 – GYN 1 – Advances in Cervical Cancer Treatment om: W187 • SS 18 - Head and Neck 1 - Novel Approaches in

- Oropharynx Cancer ·W100
- SS 19 GU 3 Prostate SBRT and Brachytherapy • SS 20 – Late-breaking Abstracts

Room: W375E

8:30 a.m. - 9:00 a.m. cience Highlights 0.50 CME

Hematoloaic Cancers

9:00 a.m. - 9:15 a.m.

9:15 a.m. - 10:15 a.m. Keynote II 1.0 CME Global Health in Oncology, Vanessa Kerry, MD, MSC Room: W375A/B/C/D

10:00 a.m. - 5:00 p.m. Exhibit Hall Ope

10:00 a.m. – 12:45 p.m. ster Viewing Hour

Q Location: Innovation Hub, Hall F1 10:15 a.m. – 11:30 a.m.

Awards Ceremony 0 CME PRoom: W375A/B/C/D

11:00 a.m. - 2:30 p.m. ASTRO Bistro

11:30 a.m. - 1:00 p.m. nnual Business Meeting Luncheon – Voting Members Only 0 CME Room: W183

1:00 p.m. – 2:15 p.m. Education Sessions 1.25 CME

• EDU 14 – Challenging Cases in Cervical Cancer m·W176 • EDU 15 SA-CME - Biomarkers in Radiation

Oncology: Past, Present and Future **Room:** W184

1:00 p.m. - 2:15 p.m. oral Scientific Sessions 1.25 CME • MO 12 - HSR 1 - Cost and Comparative

Effectiveness **Room:** W175

1:00 p.m. – 2:15 p.m. Oral Scientific Sessions 1.25 CME

- SS 21 Physics 5 Imaging for Response
- Assessment Room: W196
- SS 22 Sarcoma and Melanoma Room: W192
- SS 23 Education and History 2 Radiation Oncology Workforce Room: W194

1:00 p.m. - 2:15 p.m.

 Panel Sessions 1.25 CME
 Panel 11 – Risk Adapted Strategies for Breast Radiation in 2019 and Beyond Room: W181

• Panel 12 – Stat Rads! Turn the Beam On! Challenaina Palliative Radiation Emergencies w187 • Panel 13 – Advances in the Management of Brain

Metastases **Room:** W190

1:00 p.m. - 2:15 p.m.

Poster Viewing Q&A Session 03 0 CME PRO/QoL/Survivorship, Palliative Care, Health Services Research, Biology, Education/History, Physics Continent Content C

1:00 p.m. - 2:15 p.m. Wellness Session Mindful Awareness – Compassionate Engagement, Encore Session Room: W193

1:00 p.m. – 2:15 p.m. Workshops 1.25 CME O5 – Young Physicians' Session • 06 SA-CME – Immunotherapies in Combination

with Radiation Therapy: Optimal Study Design Room: W185 2:15 p.m. - 2:45 p.m.

2:30 p.m. - 3:30 p.m.

O Expert Theater 0 CME Code Development and Valuation: What Radiation Oncology Industry Stakeholders Need to Know ♀Locat on: Indu stry Expert Theater 2 Innovation Hub, Hall F1

2:45 p.m. – 4:00 p.m.

Education Sessions 1.25 CME • EDU 16 – Emerging MRI Techniques for CNS Tumors: Adaptive RT and Response Assessment

- EDU 17 Radiation Therapy-related Cardiac Risk in Childhood Cancer Survivors: Informing Clinical Decisions Room: W194
- EDU 18 How to Incorporate Commercial Genomic Tests into Your Management of Prostate Cancer: Evidence and Limitations

oom: W181

2:45 p.m. – 4:00 p.m. Mini-oral Scientific Sessions 1.25 CME

- MO 14 Breast 3 Techniques, Toxicities and Dosimetry **Q** Room: W186
- MO 15 Physics 6 Imaging for Planning and Treatment Room: W179
- 2:45 p.m. 4:00 p.m.
- Oral Scientific Sessions 125 CME
- SS 24 Hematologic 2 Radiation Therapy in Lymphoma Salvage Treatment: Integration with CAR-T Cell and Other Novel Combinations
- m•₩196 • SS 25 – Digital Health/Informatics 2, m·₩176
 - SS 26 Palliative 2 Room: W192

See Wednesday's schedule on next page.

2:45 p.m. – 4:00 p.m. Panel Sessions 1.25 CME

- Panel 14 Improving the Clinical Treatment of Vulnerable Populations in Radiation Oncology: Latin, African American, Native American, and Gender/Sexual Minority Communities
- Panel 15 SA-CME Gynecological Oncology in the Era of Precision Medicine
- Room: W184 • Panel 16 – FLASH-RT: The Innovation of Ultra-
- High-dose-rate Radiotherapy, A Transformative Collaboration of Biology and Physics Room: W185

2:45 p.m. - 4:00 p.m.

er Viewing Q&A Session 04 0 CME Gastrointestinal Cancer, Genitourinary Cancer, Nursing, Gynecological vation Hub, Hall F1

2:45 p.m. – 4:00 p.m. Special Session 02 1.25 CME Research Spotlight: ASTRO's Research Award Winners oom W175

4:00 p.m. – 4:45 p.m.

4:00 p.m. - 5:00 p.m. **Poster Viewing Hours Q** Location: Inr ovation Hub, Hall F1

4:45 p.m. - 6:00 p.m.

n Sessions 1.25 CME EDU 19 – PENTEC: Pediatric Normal Tissue Effects in the Clinic: An International Collaboration to Synthesize Data on Normal Tissue Radiation Dosevolume Tolerances as Impacted by Development for Pediatric Cancer Patients om: W190

• FDU 20 – Is there a Standard of Practice in Oncologic Care for Transgender Patients? **Room:** W192

4:45 p.m. - 6:00 p.m.

Joint Session 03 1.25 CME Everything They Can Do in Lymphoma, You Can Do Better with the Integration of Radiotherapy: New Data in Support of RT Across the Lymphomas Disease Spectrum Room: W184

4:45 p.m. - 6:00 p.m.

- ral Scientific Sessions 1.25 CME • MO 16 – GI 4 – Hepatopancreaticobiliary Cancers m·W176 • MO 17 – Head and Neck 2 – Head and Neck
- Research Update Room: W186
- 4:45 p.m. 6:00 p.m. Oral Scientific Sessions 1.25 CME
- SS 27 Biology 6 Experimental Therapeutics and Target Discovery
- W194 • SS 28 - CNS 3 - Gliomas
- SS 29 Physics 7 Outcome Analysis and Modeling
- **Room:** W196

4:45 p.m. – 6:00 p.m.

- Panel Sessions 1.25 CME Panel 17 To ADT or Not to ADT: The Role of Hormonal Therapy in the Setting of Intermediate Risk Prostate Cancer and Advanced Radiotherapy Techniques
- **Q** Room: W185 • Panel 18 – Incident Investigation without Shame
- and Blame: Just Handling of Whoppers and Whoopsies **Q** Room: W181
- Panel 19 Bridging Precision Oncology and Population Health Research to Inform Clinical , Relevance and Personalized Patient Care Room: W179

4:45 p.m. - 6:00 p.m. Workshop 07 1.25 CME Funding Your Research: Successful Strategies and Potential Pitfalls Room: W175

chemoradiation, researchers found the immunotherapy drug greatly reduced the spread of cancer to other parts of the body.

Al can predict radiation treatment side effects for patients with head and neck cancers

Jay Reddy, MD, PhD, The University of Texas MD Anderson Cancer Center, et al.

For the first time, a sophisticated computer model has been shown to accurately predict two of the most challenging side effects associated with radiation therapy for head and neck cancer. This precision oncology approach has the potential to better identify patients who might benefit from early interventions that may help prevent significant weight loss after treatment or reduce the need for feeding tube placement. The model fell short of predicting unplanned hospitalizations with sufficient clinical validity (AUC = 0.64) but predicted the likelihood of significant weight loss (AUC = 0.751) and need for feeding tube placement (AUC = 0.755) with a high degree of accuracy. This study highlighted how machine learning can be used for more personalized approaches to cancer treatment.

Women's health clinic closures associated with higher cervical cancer mortality and lower screening rates

Amar Srivastava, MD, MPH, Washington University School of Medicine in St. Louis, et al. Following the closure of nearly 100 women's health clinics across the United States from 2010 to 2013, more women were diagnosed with advanced stages of cervical cancer, mortality rates rose, and fewer women were screened for the highly treatable disease, according to findings from a new analysis that combined several nationwide datasets. Researchers found an increase in early-stage diagnoses among 18to 34-year-old women in states in which clinics had not closed, but a decrease in early-stage diagnoses for this same age group in states in which clinics had closed. In states with closures, 13% fewer women were diagnosed in the early stages of cervical cancer than in states without closures. Correspondingly, there was a trend toward increased late-stage diagnoses in this age group, with 8% more women being diagnosed with late-stage disease in states with clinic closures. 🕂

SCHEDULE AT A GLANCE Wednesday, September 18

8:00 a.m. – 8:30 a.m. Science Highlights 0.5 CME Palliative Care Room·W181

8:00 a.m. - 9:00 a.m.

- cation Sessions 1 CME • EDU 21 – Tackling the GYN Tumor Board with a Discussion of Standard and Controversial Cases in Uterine Cancer om: W175
- EDU 22 Recruitment to Difficult Randomized Clinical Trials: Lessons from PARTiQoL, VALOR, and ProtecT

Room: W196

• EDU 23 SA-CME – Practical Considerations in the Modern Management of Small Cell Lung Cancer

QRoom·W184

- EDU 24 Introduction to Big Data Analytics and Artificial Intelligence
- EDU 25 (SACME) Minimizing Toxicity through Multidisciplinary Care of Complex Head and Neck Cancer Cases Room: W185

8:00 a.m. - 9:00 a.m.

- -oral Scientific Sessions 1 CMF • MO 18 – HSR 2 – Patient Centered Health Services Research Room: W178
- MO 19 Biology 7 Normal Tissues Room: W192

8:00 a.m. – 9:00 a.m.

- Oral Scientific Sessions 1 CME • SS 30 – GI 5 – Esophagogastric Cancers Room: W187 • SS 31 - Biology 5 - Immune System and Tumor Microenvironment
- Room: W190 • SS 32 – Physics 8 – Treatment Delivery Room: W179

8:30 a.m. – 9:00 a.m. Science Highlights 0.5 CME Breast Cancer Room W181

9:00 a.m. - 9:15 a.m.

9:15 a.m. - 11:00 a.m. Special Session 1.75 CME Cancer Breakthroughs: Takeaways from the Major Oncology Meetings of 2019

11:00 a.m. - 11:15 a.m.

11:15 a.m. – 12:30 p.m. Education Sessions 1.25 CME

- EDU 26 Toxicities, Reconstruction Complications, and Quality-of-Life after Radiotherapy for Breast Cancer: Looking Harder
- EDU 27 SA-CME Stereotactic Body Radiation Therapy for Solid Tumor Spinal Metastases: A Practical Case Based Discussion **Room:** W184

11:15 a.m. – 12:30 p.m. Joint Session 04 1.25 CME

MOC v 3.0: Significant Changes on the Way for 2020 oom: W183

11:15 a.m. – 12:30 p.m.

- Mini-oral Scientific Sessions 1.25 CME • MO 20 - GYN 2 - Innovation in Gynecologic Malignancies om: W190
- MO 21 Physics 9 Imaging for Response Assessment **Room:** W179

11:15 a.m. – 12:30 p.m.

- Oral Scientific Sessions 1.25 CME SS 33 – Physics 10 – Machine Learning for Planning and Segmentation **Q** Room: W185
- SS 34 Head and Neck 3 Breakthroughs in Head and Neck Cancer
- Room: W192 • SS 35 - HSR 3 - Best of Health Services Research
- Room W175

11:15 a.m. - 12:30 p.m. nel Sessions 1.25 CME

- Panel 20 Brachytherapy Boost for Prostate Cancer: Magic Bullet or Risky Tool? Room: W178
- Panel 21 Emotional Intelligence Leadership Strateaies in Practice Management and Patient Care Room: W187
- Panel 22 Real-time Imaging-based Biomarkers to Guide Personalized Radiotherapy for Gastrointestinal Malignancies Room: W196
- Panel 23 Innovative Approaches to Transform the Care of Viral Associated Cancers

Room: W181

12:30 p.m. – 1:15 p.m. Lunch Break

- 1:15 p.m. 2:30 p.m. • EDU 28 SA-CME – Treatment of Metastatic Prostate Cancer: Ready for Primetime?
- Room: W184
 EDU 29 Challenging Cases in Lung Cancer: NSCLC 🛛 Room: W196

1:15 p.m. - 2:30 p.m. oral Scientific Session 1.25 CME MO 22 – Physics 11 – Hardware Technologies and Treatment Delivery Room: W175

This just in: ASTRO submits official RO Model comments to CMS

ASTRO submitted an official comment letter yesterday on Medicare's proposal to require more than 1,000 radiation oncology practices to participate in the new alternative payment model. See the letter at www.astro.org/romodelcomments.

Don't miss a minute of the Annual Meeting! Virtual Meeting is free with your full-conference registration

Miss a session due to scheduling? Or just want to have a recorded reference? A new, improved Virtual Meeting platform is free to full-conference Annual Meeting attendees as a part of your registration. The Virtual Meeting is also available for purchase at a discounted rate for one-day conference attendees and to ASTRO members not attending the meeting.

The Virtual Meeting provides over 150 hours of educational content; downloadable PDFs and MP3s of presentations; notetaking and bookmarking for further review; and improved searchable content.

Access the Virtual Meeting through the 2019

1:15 p.m. – 2:30 p.m.

Oral Scientific Sessions 1.25 CME • SS 36 – Physics 12 – Imaging for Positioning

and Monitoring

- Room: W187
- SS 37 GI 3 Anorectal Cancers
- SS 38 Pediatric 2 **Q** Room: W179
- 1:15 p.m. 2:30 p.m.
- Panel Sessions 1.25 CME
 Panel 24 Emerging Career Paths in Radiation Oncology Big Data: What you Need to Know

Room: W176

- Panel 25 Modern Therapy in Oropharyngeal Cancer: What is the Evidence for Immediate Implementation of Differing Strategies Based Upon HPV Status? **Q**Roo n: W185
- Panel 26 Improving Physician-Patient
- Communication and Informed Consent to Ensure Ethical Conduct of Routine Clinical Care and Clinical Research

Room: W181 Panel 27 – When Conventional Wisdom

Leads Us Astrav

2:30 p.m. - 2:45 p.m.

2:45 p.m. – 4:00 p.m. Education Sessions 1.25 CME

- EDU 30 Integration of Particle Therapy for Head and Neck Cancers: Indications, Practical Considerations and Cautionary Tales
- **Room:** W181 • EDU 31 – State of the Art Radiation Therapy in Management of Non-prostate GU Malignancies

QRoom: W192

- 2:45 p.m. 4:00 p.m. oral Scientific Sessions 1.25 CME • MO 23 – Hematologic 3
- **Q** Room: W17⁴
- MO 24 Physics 13 Treatment Planning and Motion Management **Q**Room: W176

2:45 p.m. – 4:00 p.m.

- Oral Scientific Sessions 1.25 CME • SS 39 – GI 6 – Hepatopancreaticobiliary • SS 40 - Biology 8 - Biomarkers of Response
- Room: W179

2:45 p.m. - 4:00 p.m.

Panel Session 1.25 CME • Panel 28 – The Evolving Role of Fractionation in Early Stage Breast Cancer Room: W178

Annual Meeting Conference Planner or log into your MyASTRO account, scroll down to My Resources and click the link for Virtual Meetings/ Products. The content is available on the ASTRO website for three years after the meeting.

Keynote address: Artificial intelligence and deep learning in medicine

By Sabrina Joseph, PhD, ASTRO Scientific Affairs

Sara Alcorn, MD, PhD, MPH, opened the Keynote Address with a welcome that highlighted that health system applications are evolving in the area of Big Data, where medically relevant information is exceeding what the human brain can process, and we are increasingly relying on machine learning to process the abundant information. Current applications exist on three levels that can benefit the provider, patient and health system as a developers or end user, who could value different outcomes. Biases and limitations in the data algorithms may learn from missing data of underrepresented populations and can lead to selffulfilling predictions. Consequently, the predictive analytics to prognosticate will then be infiltrated with these existing biases.

There is also a need to ensure that AI and machine learning tools are used in the appropriate



whole. However, the advantages of AI and machine learning are balanced with real limitations, both of which were addressed by the two Keynote speakers, Suchi Saria, PhD, and David Magnus, PhD.

Dr. Saria initially shared that discussions of AI's potential are pervasive, with advances facilitating exciting changes linked to novel shifts in computer and algorithm development. Through machine learning, humans can design algorithms that can uncover rules discovered from data. In the absence of a gold standard, noisy data can be transformed and combined with supervised learning to create a new data score. However, to trust the data we must incorporate validating procedures to ensure that the capabilities are reliable. As new applications are on the way to augment practice, the challenges are numerous: that rapidly releasing information might lead to physician fatigue and create more noise, and algorithm development can be susceptible to errors, for example. As health care and medicine are undergoing rapid transformation from software playing a limited role to data serving as a first-class asset, we will see numerous software interventions to improve clinical outcome and reduce financial burden. Provided that we are responsible, thoughtful, and careful in our approach, we can see great advancement in the field.

Dr. Magnus then expanded upon the unexpected issues associated with implementing AI strategies in patient care. The first described how data analyses can become embedded with the values and interests of either the algorithm circumstance with the important understanding of their limitations. Physicians and health systems may be unaware of data limitations and may value decisions embedded in an algorithm that can be applied to populations where it is not predictive in that population. Moving forward, there is likely to be a broader trend toward population analytics versus the current ethos in medicine that is grounded in the dyadic relationship between physician and patient. Data stewardship will need to be carefully considered and potentially revamped. The current mechanisms of using deidentified data likely won't work in the long run. During the subsequent Q&A with Theodore DeWeese, MD, FASTRO, it was emphasized that we will need to carefully consider how to frame not only the physician and researcher obligations but also the patients' needs. For successful use of information, we need to recognize that patients are part of a learning heath system and there must be transparency to foster a trusting relationship. For progress within the field, physicians will have to learn how to embrace and open the "black box" to educate patients about both the limitations and advantages of AI and deep learning. 🔼

> **DON'T MISS KEYNOTE II** featuring Vanessa Kerry, MD Today, September 17 9:15 a.m. - 10:15 a.m.

STREET TALK What has been the highlight of the Annual Meeting for you so far?



"Definitely the debate this morning between Dr. Zietman and Dr. Timmerman. I appreciated the fact that they took their gloves off and made for a very entertaining, and amusing session, and educational as well. So, I know that they were trying a new

format for the Presidential Symposium this year and it seemed to have worked quite well for the large session."

> Jing Zeng, MD University of Washington Seattle, WA Member



"The Presidential Symposium was really nice. It was very different from any Japanese styled scientific discussion. The debate was really exciting! The specialists were very logical and filled with enthusiasm. Both positions were discussed really well and after the debate I took

a position based on the arguments made. In fact, I think to use SBRT/SABR for all metastatic cancer is too much at this point. What I think is similar to the audience's conclusion."

Takuya Shimizuguchi, MD Tokyo Metropolitan Cancer and Infectious Diseases, Tokyo, Japan Member-In-Training



"We're very excited to show our latest developments in motion management, proton ARC therapy and FLASH irradiation. We are excited to share those latest developments with attendees at the biggest radiation therapy trade show."

Aymeric Harmant Global Marketing Director, Ion Beam Applications



"Getting together and seeing everybody from different departments because we're such a siloed specialty."

> Brendan Coutu, MD University of Nebraska

Abstract Summaries

Final Results of a Phase II Prospective Trial Evaluating the Combination of Stereotactic Body Radiation Therapy (SBRT) with Concurrent Pembrolizumab in Patients with Metastatic Non-Small Cell Lung Cancer (NSCLC), presented by Allison Campbell, MD, PhD (Session 74 – Monday, 11:15 a.m. – 11:25 a.m.)

By Malcolm Mattes, MD Dr. Allison Campbell and colleagues at Yale University evaluated 22 patients with metastatic non-small cell lung cancer who developed progressive disease on Pembrolizumab, to determine if the addition of a few fractions of high dose radiation therapy to one site of disease could reverse its course and induce a systemic or "abscopal" response. They found that the additional radiation therapy delivered at the time of disease progression resulted in a mean 151 days before further disease progression occurred. The overall response rate was 10% and the overall disease control rate (including stable disease) was 57%. Significantly longer progression-free survival times were seen in patients who had an immune mediated adverse event, or who had T cells infiltrating their initial tumor biopsy. A mass cytometry by time-offlight (CyTOF) analysis of peripheral blood was carried out on the two patients who had a sustained response to therapy, finding changes in their T cell compartment that may also correlate with the response.

Screening for Late Effects of Radiation: Coronary Artery Calcification in a Cohort of Long-Term Breast Cancer Survivors in The CAROLE (CArdiac Related Oncologic Late Effects) Study, Presented by Lindsay Puckett, MD (Session 41 – Monday, 8:30 a.m. – 8:40 a.m.)

By Christian Okoye, MD

Given the concern for increased late cardiac toxicity among breast cancer survivors, Puckett et. al. reported results of the CAROLE study evaluating such patients as part of a multimodality cardiac screening study. Among enrolled patients, all without known baseline cardiac disease and \geq 6 years from treatment (median 11.5 years), 38.6% had evidence of coronary artery calcium or coronary disease, as indicated by a coronary artery calcium CT scan (CAC CT). Other published results from ASCO showed abnormalities on EKG and on echocardiogram with global longitudinal strain in 27% and 50% of patients, respectively. Technical limitations prevented direct dosimetric correlation, but a trend was seen in left main disease on CAC CT among patients with left-sided disease.

Overall, these results highlight the significant burden of late cardiac disease present in breast cancer survivors. The multimodality nature of the study is the first of its kind, providing a comprehensive assessment and baseline for future investigations. The elevated risks of subclinical cardiac disease compared to historical controls suggest a broad approach to patient evaluation may be warranted to prevent overlooking treatable preclinical cardiac disease.

CX3CR1 Expressing Macrophages Infiltrate the Tumor Microenvironment and Promote Radiation Resistance in a Mouse Model of Lung Cancer, presented by Uri Amit, MD, PhD, MPH (Session 1023 – Sunday, 1:50 p.m. – 1:55 p.m.)

By Miriam A. Knoll, MD Uri Amit, MD, PhD, MPH, and researchers from Sheba Medical Center in Israel presented their research investigating mouse models for lung cancer. They investigated the role of macrophages that expressed the chemokine receptor CX3CR1; this receptor's role is important for macrophage homeostasis and effector functions. Dr. Amit found that after irradiating mice with lung cancer with 8 Gy, mice depleted with CX3CR1 were also observed to have reduced tumor growth. This early research proposes a potential strategy to improve radiation sensitivity, via targeting CX3CR1 expressing macrophages within the tumor microenvironment. "I am very excited to attend ASTRO this year and present our research to peers from around the world," said Dr. Amit. He added, "Although the combination of radiation and immunotherapies targeting T lymphocytes is being extensively studied, there are still gaps of knowledge in our understanding of the potential role of other immune cells in the irradiated tumor microenvironment. Using genetically engineered mice models, we identified a subset of macrophages which

contribute to the tumor's radiation resistance in mice. These results got us very excited and we hope this may translate in the future to novel immunotherapies specifically aimed at the irradiated tumor microenvironment."

Financial Toxicity in Lung Cancer: An Assessment of Magnitude, Perception and Impact on Quality of Life, Presented by Sarah Hazell, MD (Session 39 – Monday, 8:10 a.m. – 8:20 a.m.)

By Christian Okoye, MD

With increasing costs of medical care, Hazell et. al. performed a prospective study to assess the impact of financial distress on quality of life among patients with newly diagnosed, stage II-IV lung cancer. Patients were enrolled within five weeks of the initial consultation and assessed via validated financial toxicity and quality of life questionnaires. At baseline, many patients (39%) indicated they were "just getting on" or "struggling financially," while 60% of non-retired patients noted a change in their income since their cancer diagnosis. Risk factors for financial toxicity included baseline financial reserves and the ability to afford basic necessities.

With these early data, investigators believe there are subsets of financially distressed patients, including those with poor baseline financial reserves and others with poor health care literacy, within systems that lack price transparency. Future work includes analyzing timepoints to assess how financial toxicity changes throughout treatment. Additionally, these outcomes may improve screening for financial distress and inform financial counseling interventions to improve patient understanding of their financial position and explore available resources.

Prospective Phase I Dose Escalation Study for Neoadjuvant Radiosurgery for Large Brain Metastases, Presented by Erin Murphy, MD (Session 20 – Sunday, 1:25 p.m. – 1:35 p.m.)

By Miriam A. Knoll, MD Erin Murphy, MD, and colleagues from the Cleveland Clinic, performed neoadjuvant radiosurgery prior to surgical resection of 27 patients with brain metastases with a doseescalation approach: for tumor size >2.0 - 3.0 cm SRS dose will go up to 24Gy, for tumor size > 3.0 - 4.0 cm up to 21 Gy, for tumor size > 4.0 - 5.0 cm up to 18 Gy. After a mean followup of 15 months, the 12 month local control was 72%, 12 month distant brain control was 49.6%, 12 month overall survival was 54.9%. Only one patient developed leptomeningeal disease and only one patient has received whole brain radiotherapy. The maximum tolerated dose was not yet reached. Dr. Murphy shared, "The study is continuing to accrue patients to the Phase I component to determine the maximum tolerated SRS dose levels. Patients will be followed for up to three years to assess for survival, recurrence, radiation necrosis and other possible late effects of neoadjuvant SRS followed by surgical resection. Patients with cancer are living longer thanks to immunotherapy and targeted therapies, therefore it makes sense to use an aggressive local control approach for their brain metastases."

Quality of Life Based Total Cost Function (TCF) to Guide Treatment Plan Optimization for Head and Neck Cancer, Presented by Hans Paul vander Laan, PhD (Session 197 – Sunday, 4:55 p.m. – 5:05 p.m.)

By Christian Okoye, MD

To integrate NTCP models and quality of life (QOL) into individual patient treatment planning, van der Laan et. al. present their work in developing a QOL-based total cost function (TCF) to guide treatment optimization among patients with head and neck cancer receiving definitive radiotherapy. To accomplish this, they reviewed 11 prospectively scored patient- and physician-rated toxicities at multiple time points (between 6 and 24 months after treatment) as predictors for QOL.

In the analysis, the impact of toxicity on QOL differed by the toxicity evaluated and the time point reviewed. Ultimately, these results were combined with NTCP models to estimate the overall predicted quality of life, based on organ-at-risk doses and their expected toxicities within an individual treatment plan. With this model in place, investigators hope to move away from multiple organ-specific dose constraints to a single quality of life endpoint to optimize and/or compare plans. Future goals include external validation, formal integration with treatment planning software, and eventually prospective clinical validation.



Our heartfelt congratulations on a well-deserved honor.

Our own Dr. Silvia Formenti is awarded the ASTRO Gold Medal

NewYork-Presbyterian Hospital is proud and thankful to have Dr. Silvia Formenti as a colleague, a leader, and an inspiration. Dr. Formenti, Radiation Oncologist in Chief at NewYork-Presbyterian/Weill Cornell Medical Center, Chairman of the Department of Radiation Oncology at Weill Cornell Medicine, and Associate Director of the Meyer Cancer Center at Weill Cornell Medicine, is recognized around the world as an expert in the use of radiation therapy for cancer treatment. Her work demonstrating the efficacy of combining radiotherapy with immunotherapy has opened an entirely new field of application for radiation as an adjuvant to immunotherapy. Contributions by pioneers like Dr. Formenti have helped put NewYork-Presbyterian Hospital at the forefront of cancer innovation.

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Learn more about our innovations in oncology at nyp.org/advances-oncology

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Three experts delve into to the topic 'Curing metastatic disease with radiotherapy: Myth or reality?'

By Sabrina Joseph, PhD, ASTRO Scientific Affairs

As the role of radiation therapy is expanding beyond local tumor control and palliation of metastatic disease symptoms, the Presidential Symposium sought to drive conversations toward the question of "Can we routinely cure metastatic cancer with radiotherapy?" ASTRO President Theodore DeWeese, MD, FASTRO, introduced the new more collaborative and provocative format, which included three level setting talks, a debate and 13 Expanded Learning Sessions. Felix Feng, MD, noted that this topic was ideal for debate and discussion, as treatment of oligometastatic disease with radiation is not only an area with emerging data, but also controversial and representative of a path for great expansion in the field.

During the first TED talk-style presentation, Ashani Weeraratna, PhD, described "Contemporary Principles of Metastatic Cancer Dissemination" and reminded the audience to carefully consider during therapy not only the tumor but also the microenvironment in which it exists. She outlined a variety of routes and methods by which metastatic tumor cells travel to distant sites and discussed accumulating evidence that shows stressors, such as aging, chemotherapeutic agents and radiation, can affect the way cells metastasize. Through mechanisms such as the secretion of exosomes



or induction of cellular senescence, radiation and chemotherapeutic agents may help create an environment for tumor cells to migrate, she explained. In closing she encouraged everyone to think about the matrices affected during treatment, how to measure these effects and how by treating one thing we actually may be making it worse.

Next Karyn Goodman, MD, reviewed "The Role of Local Therapies in the Management of Patients with Metastatic Disease." She outlined the historical spectrum of theories of metastatic disease treatment, from addressing the contiguous orderly spread hypothesis to use of more systemic therapies like chemotherapy and, more recently, the concept of curing metastatic disease with RT. Hellman and Weichselbaum defined the oligometastatic state in 1995 as a transitional phase between localized and widespread metastatic disease where there is limited metastatic burden. Dr. Goodman reviewed the supporting clinical evidence demonstrating the benefit of surgical resection, stereotactic ablative radiotherapy (SABR) or local consolidative therapy to the primary site for progression-free and overall survival in a subset of disease sites.



While the potential for cure with local therapy in oligometastasis remains controversial, the role of local therapies for the subgroup of oligometastatic disease is being further refined with prospective trials and better molecular markers of disease status. She closed with an optimistic perspective, that we are on the cusp of improved understanding of metastatic disease to better individualize therapy options. As a result, when communicating with patients we may be able to provide more hope about the goals of therapy. As the late actor Christopher Reeve once said, "Once we choose hope, anything is possible."

Charles Drake, MD, PhD, concluded the session by describing the immunobiology of radiation and how it can be used to treat, and cure, patients with oligometastatic disease. There is supporting evidence for the "abscopal effect," where irradiation of tumor cells can modify immune responses and lead to regression of metastatic cancer at distant sites outside of the radiation field. However, reports of this are rare. The ability of RT to lead to systemic immune responses against tumor cells is complicated by established immune modulating strategies that prevent responses such as the upregulation of immune checkpoint molecules on tumor cells such as PD-L1, the infiltration of T regulatory cells (Tregs), or persistent antigen exposure in the tumor microenvironment leading to T cell tolerance. One benefit of radiation therapy to the treatment of oligometastatic disease is that it may destroy the tumor antigens, thereby alleviating persistent antigen exposure and potential T cell tolerance. Conversely, there is also evidence suggesting that radiation leads not only to a higher number of Tregs but that they are more effective at suppressing T cell responses. Potentially, one way to improve the effectiveness of RT is to consider targeting Tregs. There is growing consensus that immunotherapy in combination with radiotherapy can help boost the abscopal effect. Reports of either immunotherapy or RT as curative monotherapies are rare. Dr. Drake challenged the audience to think about the combination: Can the combination



of immunotherapy and radiation therapy cure metastatic disease routinely?

The session led to debates moderated by a number of distinguished experts in the field. For more details on the debates, visit www.astro.org/ showdailies.



Latest Phase II and III trial results showcased at Plenary session

By Sabrina Joseph, PhD, ASTRO Scientific Affairs, and Lisa Braverman, MA, ASTRO Journals

Monday's Plenary session filled the auditorium and featured the most recent, late-breaking results from four clinical trials. The session, always a scientific highlight of the meeting, was moderated by Lisa Kachnic, MD, FASTRO, and Andrea Ng, MD, MPH. Each presentation was followed by a discussant who described the strengths and limitations of the study and challenged the audience to consider how to integrate these results in their clinical practice.

The session kicked off with updates from a secondary endpoint analysis from the RTOG 9601 trial, which investigated the consequences of long-term hormone therapy in men receiving salvage radiotherapy for prostate cancer. Daniel Spratt, MD, presented the analyses of this randomized, Phase III trial. The analyses focused on distant metastases and other-cause mortality in two study arms. Patients had been stratified by entry serum prostate-specific antigen (PSA) levels and randomized to undergo either salvage radiation therapy (SRT), plus a nonsteroidal androgen therapy or daily placebo tablets for two years. The primary end point was the rate of overall survival. The data showed that neither short nor long-term hormone therapy improved overall survival for patients with PSA ≤ 0.6 ng/ml. Paul Nguyen served as a discussant.

The second study (RTOG 0631), presented by Samuel Ryu, MD, compared pain relief between radiosurgery (SRS)/stereotactic body radiation therapy (SBRT) and conventional external beam radiation therapy (cEBRT) for patients with one to three sites of spine metastases. Pain control was defined as a three-point improvement on the Numerical Rating Pain Scale at one, three, or six months post-treatment at the treated spine segment. There was no difference in pain response between SRS/SBRT and cEBRT at three and six months. Arjun Sahgal, MD, served as a discussant for this presentation. Next, Julia White, MD, FASTRO, presented on a substudy of the NRB B39-RTOG 0413 Phase III Clinical Trial. This trial compared the cosmetic outcome from Post Lumpectomy Whole Breast Irradiation (WBI) versus Partial Breast Irradiation (PBI). Quality of life, cosmesis by a patient-rated global cosmetic score and a physician-rated score and digital photos were analyzed. Mylin Torres, MD, was a discussant for this substudy and shared that our last frontier as radiation oncologists is understanding how we preserve breast cosmesis is good or fair really good enough? She reminded the audience that our goals are to cure the cancer and leave as little trace of our treatment as possible.

Lastly, attendees heard recent results from Sue Yom, MD, PhD, MAS, regarding NRG-HN002, which was designed to select the treatment arm(s) achieving acceptable progression-free survival (PFS) without unacceptable swallowing-related quality of life in patients with p16+, non-smoking-associated, locoregionally advanced oropharyngeal cancer. Patients were stratified by unilateral versus bilateral radiation and randomized (1:1) to either intensity-modulated radiation therapy (IMRT) plus Cisplatin (C) for six weeks versus modestly accelerated IMRT alone over five weeks. Higher rates of grade \geq 3 acute toxicity were reported for IMRT+C and rates of late grade \geq 3 toxicity and estimated 2-year OS rates were similar.

Beth Beadle, MD, PhD, served as the discussant and asked that we keep in mind the priority of patients, which is cure.

For full details of the trial designs and results, stay tuned for Wednesday morning's Digital Daily.

Enthusiastic response to debut Theranostics Workshop

By Ana Kiess, MD, PhD, and John Buatti, MD



This year, for the first time, ASTRO offered a Theranostics Workshop on Saturday, September 14. This half-day training course was designed to teach clinical radiation oncologists the practical knowledge needed to expand their practice into radiopharmaceutical therapies (RPTs). In addition, up-to-date data for RPT treatment for a number of cancers was provided. Nearly 200 individuals attended this half-day meeting to refresh their knowledge of relevant physics, dosimetry, pharmacology and radiobiology, as well as learn more about the logistics and optimal workflow associated with the use of RPTs in the clinic. Clinical trials, outcomes and treatment side effects were discussed from a practical clinical perspective.

The rapid evolution and proliferation of theranostic and radiopharmaceutical agents represents a sea change for modern cancer care. The NCI has increased grant funding opportunities related to RPTs, and ASTRO's goal is to support and encourage radiation oncologists to provide RPTs to our patients. According to ASTRO's 2019 Scope of Practice survey, there is wide variation among ASTRO members and their use of RPTs and theranostics

— 12% of ASTRO members routinely provide this service and an additional 19% of members occasionally provide or oversee the use of RPTs. In other words, about a third of ASTRO members are currently actively prescribing or delivering radiopharmaceuticals. As RPTs will be increasingly applied to solid tumors that we frequently manage, it is clear this therapy and our involvement in its delivery will be increasingly needed.

Radiation oncologists are certified to deliver these RPTs, but many lack specific and updated training and therefore underutilize them. The Theranostics Workshop was planned to update ASTRO members on the RPTs that are now approved and discuss the many others that are emerging for treatment of prostate cancer, neuroendocrine cancers and other cancers. As experts regarding the benefits and risks associated with various cancer therapeutic options, we are perfectly positioned to help patients make the best choice for their particular situation, including the use of RPT's. In addition, the increasing capacity of quantitative imaging to provide personalized dosimetry for each patient is an opportunity for our field to optimize and contribute to the advancement of this therapy.

Several presenters spoke about the importance of collaboration between radiation oncology and nuclear medicine physicians and physicists to realize the potential of this emerging therapeutic option. Radiation oncologists and their understanding of dose have an important role to play in optimizing RPTs. "No one dose fits all," said Annick van den Abbeele, MD, co-director, Tumor Imaging Metrics Core at the Dana-Farber Cancer Institute. "If you can measure it, you can really tailor it."

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Images of A















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STRO 2019



























Treatment with concurrent CRT is given to patients with curative intent and offers patients additional treatment options in the unresectable Stage 3 NSCLC setting¹⁻³

Rates of **5-year survival** with concurrent CRT have doubled over the past 10 years:



2010 Concurrent CRT shows survival benefit compared with sequential CRT^{4*}



2017

Concurrent CRT with standard-dose radiation^{5,6†}

More can be done for these patients after CRT

CRT: chemoradiation therapy; NSCLC: non-small cell lung cancer.

*This meta-analysis of survival in patients with unresectable Stage III NSCLC was based on 6 trials with 1205 patients and 1068 deaths.⁴

⁺Compared with high-dose radiation in patients with Stage III NSCLC.

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Inaugural Aspiring Scientists and Physicians program introduces the next generation to the field

By Curtiland Deville Jr., MD, Chair, ASTRO Committee on Health, Equity, Diversity and Inclusion (CHEDI)



This year, ASTRO launched the first Aspiring Scientists and Physicians (ASP) program through collaboration with colleagues from the University of Chicago and University of Illinois. This pilot program is designed to introduce underrepresented minority students from communities local to ASTRO's Annual Meeting to the field of radiation oncology. By promoting radiation oncology as a career option at this early stage in their education, the ASP program seeks to increase the students' exposure to and awareness of radiation biology, physics and clinical radiation oncology. Through these efforts, we strive to increase diversity

and inclusion among the next generation of researchers and medical professionals in cancer patient care.

Local undergraduate, post baccalaureate and medical students from underrepresented minority groups attended this highly interactive session. During this half-day program, students heard perspectives from two panels: one with physician and medical physics faculty and a second panel featuring a clinical fellow, a resident and a medical student who participated in ASTRO's Minority Summer Fellowship. Additionally, the panelists spoke about the role of innovation in the field, the importance of health equity in cancer care and the opportunity to make a difference in their communities. The students later broke into small groups to tour the exhibit hall, experiencing the various technologies first-hand, and viewing posters for further insight into radiation oncology research.

Based on the success of this pilot program, ASTRO anticipates continuing the program at next year's Annual Meeting in Miami. For more information on the field and to stay connected with ASTRO, students that are aspiring scientists and physicians are encouraged to email asp@astro.org.

ARRO Annual Seminar focuses on building community and serving residents

By Ashley Albert, MD, Vice-chair, ARRO Executive Committee

The Association of Residents in Radiation Oncology (ARRO) Annual Seminar was a fun, informative and inspiring event. As I approached the planning process, I wanted to incorporate some thoughts and ideas from author Priya Parker. In her book "The Art of Gathering: How We Meet and Why it Matters," Parker suggests we should not meet just for the sake of meeting, but rather



capitalize on making gatherings truly influential. I wanted the ARRO Annual Seminar to be just that: an influential and inspiring event that served residents. With the help of very talented speakers and dedicated residents, we were able to experience a day focused on developing a sense of belonging to a larger radiation oncology community and moving the field of radiation oncology forward

in ways that matter for residents.

We started the day with an overview of the topics that have influenced what the ARRO Executive Committee has been putting their efforts toward, as well as outlining the resources available for residents. Dr. Onvinye Balogun was awarded the Global Health Faculty Award, and Dr. Shekinah Elmore presented on her work in Zimbabwe as a Global Health Scholar. Dr. Andrew Huang, a current resident at the University of Wisconsin, shared his personal and touching story about how a culture of camaraderie led

to increased resident productivity and allowed them to weather the closing of their initial training program. A thorough and informative session on personal finance literacy was delivered by Dr. Kyle Russo, and residents expressed their appreciation for the additional knowledge. Dr. Dee Khuntia, who initially spoke at ARRO 10 years ago about private practice, returned to speak about his current experience at Varian and alternative careers in radiation oncology. Next, Dr. Neha Vapiwala moderated a panel made up of Dr. Salma Jabbour, Dr. Karyn Goodman, and Dr. Trevor Royce to provide advice to residents aspiring to start clinical trials. Additionally, several physicians from private practice, including Dr. Miriam Knoll, Dr. Matthew Katz, Dr. Amar Rewari, Dr. Daniel Petereit, Dr. Melva Pinn-Bingham, Dr. Join Luh, and Dr. Darlene Gabeau, met with residents in small groups to give their perspective on entering private practice. After lunch, Dr. Chelain Goodman, ARRO Chair, updated the residents about ARRO's recent advocacy efforts. A very inspiring Keynote address was given by Dr. Karen Winkfield, who spoke about the personal experiences that shaped

her career path and her work related to health disparities.

Dr. Lisa Kachnic led a session on applying for jobs and allowed residents to ask questions about the job application process. Panelists included Dr. Clayton Smith, Dr. Lindsay Puckett, Dr. Scott Bratman, and Dr. Simon Brown.

Dr. Rachel Jimenez then spoke about resident wellness and burnout and provided practical solutions. Next, panelists from stakeholder organizations participated in a panel to discuss factors affecting the radiation oncology workforce and residency expansions. The session was moderated by Dr. Trevor Royce and panelists included Dr. W. Robert Lee, Dr. Neha Vapiwala, Dr. Michael Steinberg, and Dr. Benjamin Falit. The day concluded with the annual practice entry survey results presented by Dr. Terry Wall.

I was honored to have had the opportunity to plan this year's seminar, and I am confident we truly made the most of our gathering together. We are so thankful to all the speakers and residents for making this happen. The ARRO Executive Committee hopes to use the outcomes to continue to advocate on behalf of residents this year.

Winners of the ROI Tenth Annual 5K are

By Janet Hedrick and Emily Connelly, ROI

The 10th annual Running Strong 5K Run for the Future to Benefit the Radiation Oncology Institute (ROI) was held on Monday morning with more than 450 participants, a new record for participation. The group gathered at the Chicago Fallen Firefighter and Paramedic Memorial on the Lakefront Trail to run or walk the 5K course along the scenic path by Lake Michigan.

Congratulations goes to Ben Li, University of California San Francisco, who won the title of fastest male runner for the third year in a row with a time of 16:25.34 and Kara Lynne Leonard, Rhode Island Hospital, who won the title of fastest female runner with a time of 19:02.23.



A record number of academic teams participated in the Academic Challenge this year. Team Mayo won the competition and secured a \$1,000 donation for the institution's scholarship fund. Many companies participated for the first time this year. CDR Systems in it's first year in the race won the friendly but fierce rivalry among the corporate group of participants and took home the trophy.

Radiation Business Solutions (RBS), host of the race for the 10th year, established the Running Strong 5K Run for the Future to Benefit the ROI a decade ago to support the important research and education programs funded by the ROI. Companies not only participate in the race, but also generously sponsor the annual event. In addition to RBS, this year's sponsors included: Elekta and Varian at the Hope Sponsor Level (\$10,000), and Accuray at the Discovery Sponsor Level (\$2,500).

"The event brings together industry, academic institutions and ASTRO members to support groundbreaking research in a fun and unique way," said ROI Vice President, Colleen A.F. Lawton, MD, FASTRO. "We are so grateful to RBS for hosting this event each year and to the companies that help sponsor it."

RBS covers the event's expenses and all dollars from sponsorships, donations and registration fees from the 5K go directly to the ROI to fund radiation oncology research.

The results for the race are posted at the RBS booth (#4232) in the Innovation and Solution Showcase and are available on www.roi5k.com.

You also can join in the effort to support radiation oncology research. Be sure and stop by Booth 808 in the Innovation and Solution Showcase to make your 2019 donation to the ROI.

Journal Editors Give Tips and Discuss Scholarly Publishing at Editor Roundtables

By Lisa Braverman, MA, ASTRO Journals



Attendees especially interested in research and scholarly publishing joined ASTRO editors in the Innovation Hub Sunday and Monday for Editor Roundtables. Sue Yom, MD, PhD, MAS, led engaging discussions Sunday about the ideal characteristics of Red Journal article types and how to respond to revision requests. Four roundtables were held Monday: the ASTRO editorial office began the day with a session about getting more involved with the Society's journals; W. Robert Lee, MD, MS, MEd, FASTRO, followed with how to review a scientific paper; Anthony Zietman, MD, FASTRO, discussed the evolving world of scientific publishing; and members of the *Advances in Radiation Oncology* editorial team brought nuance to the increasingly important topic of data discoverability for reproducible science. The roundtables are an informal opportunity for editors to share their insights about day-to-day journal operations and broader issues facing the research community. Don't miss the last two roundtables today starting at 11:45 a.m. and 2:30 p.m.

TUESDAY, SEPTEMBER 17

11:45 a.m. | What to do when you receive a transfer recommendation Robert Miller, MD, MBA, FASTRO
2:30 p.m. | Gender and diversity in academic research and publishing: Mentoring the next generation

Isabel L. Jackson, PhD, and Sue Yom, MD, PhD, MAS

Join us in 2020 for ASTRO's 62nd Annual Meeting in Miami Beach

By Thomas Eichler, MD, FASTRO, ASTRO President-elect



It's been more than 10 years since the journalist Thomas Friedman advised us that the world was flat, that while political borders still existed, the barriers that separated people — geography, language, culture, time zones — were greatly diminished if not altogether obliterated by technology. Cisco estimated that by 2020, of the 7.8 billion people on earth, 5.4 billion will own a cell phone, 5.3 billion will have electricity but only 3.5 billion will have running water. We are more connected than ever, yet there are striking disparities

across many domains, including access to cancer care.

The 2020 Annual Meeting will address these daunting challenges in a thoughtful and coordinated fashion, including the similar hurdles that confront cancer patients living in rural America. "The Global Clinic: Cancer Care Without Borders" represents a radical shift in the conceptualization of our Annual Meeting. ASTRO's many assets are largely confined to the borders of our nation, but we can leverage these resources on a global scale by seeking creative solutions to daunting problems such as cancer screening, staff education and infrastructure. Our greatest asset is **you** — our membership! We have an impressive depth and breadth of experience to shape cancer care in the future.

Together, we'll systematically debate common sense solutions during the Presidential Symposium, led by C. Norman Coleman, MD, FASTRO, a longstanding advocate for global health. Dan Petereit, MD, FASTRO, will discuss the obstacles to high quality cancer care in rural America. Our Keynote speakers will be carefully chosen to address these themes. Attendees can expect high-level, cutting-edge scientific presentations and education sessions designed to be more dynamic. Special attention will be given to physician wellness and the requisite tools for maintaining a healthy work-life balance. The Presidential Address will serve as a state-of-the-union vehicle, covering germane topics affecting radiation oncologists and the specialty as a whole. The final morning of the meeting will bring together experts from ASTRO and our colleagues at ASCO and ESTRO to provide attendees with a "Best of" overview to take back to the lab and the clinic.

My intent is for the pace to be a bit less frenetic with a little more down time, more opportunity for interaction with colleagues and a big dose of sunshine! We're going to be in South Beach, folks! Little Havana! Ocean Drive! The Everglades! Please plan to join me and your colleagues for what promises to be a game-changing moment in ASTRO's history.

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Radiation's vital role in viral associated cancers

By Randall J. Kimple, MD, PhD, and Michael M. Dominello, DO

Infections are estimated to cause up to 20% of cancers worldwide. Viruses alone are responsible for the majority of cervical cancers, a growing proportion of oropharyngeal cancers and a significant proportion of nasopharyngeal carcinomas, skin cancers, lymphomas, gastric cancers, anal cancers and liver cancers. Radiation plays a curative role in a significant portion of these cancers, and an enhanced understanding of viral oncogenesis has helped inform recent advances in our therapeutic approach. Wednesday's 11:15 a.m. session, "Innovative Approaches to Transform the Care of Viral Associated Cancers," will focus on the progress that has been made in treatment of these cancers over the last several years.

The session will review the mechanistic basis by which viruses cause cancer and focus on how

viral proteins alter the way in which these cancers respond to radiation and evade the immune response. Randall Kimple, MD, PhD, associate professor of Human Oncology and director of Cancer Biology and Translational Medicine at the University of Wisconsin, will review recent clinical data investigating immune-targeted therapy in viral associated cancers and describe how viral oncogenes modulate the response to therapy. Sana Karam, MD, PhD, assistant professor of Radiation Oncology and Immunology and vice chair of Translational Research at the University of Colorado, will discuss the work from her lab to understand the mechanism of resistance to immunotherapy in head and neck cancer. Andrew Sharabi, MD, PhD, assistant professor of Radiation Medicine and Applied Sciences at the

Panel 23 – Innovative Approaches to Transform the Care of Viral Associated Cancers | Wednesday, September 18, 11:15 a.m. – 12:30 p.m. | Room W181

University of California San Diego, will describe the recent work from his group studying the role of immunotherapy in recurrent viral associated cancers. Finally, Melvin Chua, MD, PhD, senior consultant in the Division of Radiation Oncology at the National Cancer Centre Singapore, will discuss the role of immunotherapy in EBV related cancers.

This session should be of interest to clinicians who treat patients with viral associated cancers such as cervical, gastric or head and neck cancers and to radiation and cancer biologists interested in learning about the latest advances in the field.

ASTRO partners with AstraZeneca and Varian for new Research Training Fellowship program

For the first time, ASTRO is partnering with industry partners AstraZeneca and Varian Medical Systems to create the Radiation Oncology Research Training Fellowship. Radiation oncologists already partner with industry to conduct research, but few have an opportunity to work within industry directly. These programs provide a resident one full year to work directly within an industry research site.

The ASTRO-Varian and the ASTRO-AstraZeneca Radiation Oncology Research Training fellowships are a joint effort to advance the field of radiation oncology in a novel way by providing unique research opportunities in the industry setting. The aim of the program is to support the next generation of researchers and significantly improve outcomes and quality of life for cancer patients by:

- Providing key research opportunities for residents in training.
- Opening new avenues to partner with industries that specialize in radiation oncology.
- Expanding a participant's résumé and research portfolio.
- Exposing residents to research within an industry setting.

ASTRO-AstraZeneca will focus on drug development challenges in late-stage drug-radiation combination; ASTRO-Varian will focus on radiobiology, immunotherapy, applications of AI in radiation oncology, information systems, treatment planning, imaging and image-guidance and new hardware for treatment delivery systems.

The program is open to residents during their research year, and all research will be conducted at an industry site, not at the researchers' home institutions. Funding will cover salary costs for one year.

Applications for the Radiation Oncology Research Training Fellowship program are now being accepted. Visit www.astro.org/research or email research@astro.org for more information. The deadline to apply is November 15, 2019. Awardees will be notified by early February.

Red Journal special issue call for papers: Radiation therapy and the immune response

Anthony Zietman, MD, FASTRO, and Sue Yom, MD, PhD, MAS

The Red Journal editors are delighted to announce that in 2020 we will have a special edition looking at the new science connecting radiation therapy and the immune response. We feel that this subject is very timely and of critical importance for the future of our specialty, and are calling for original scientific studies, clinical trials, review articles and opinion pieces on its many aspects. This interaction between radiation and the immune response is one that we know can be either beneficial or antagonistic. It is one that involves the entire spectrum of cancer and is relevant to both primary disease and to metastases. We have a very broad call for papers that includes the following categories:

- The role of the immune system in cancer surveillance and control.
- The interaction between radiation- and immune-therapies at a biological level.
- Immunologic effects on the tumor microenvironment.
- The interaction between radiation- and immune-therapies at a clinical level.
- Radiation effects on immune cell populations and their function.
- Preclinical models for interactions of radiation with the immune system.
- Characterization of the abscopal effect and anti-cancer immunity.
- Radiation techniques to minimize immune suppression.

- Imaging of immune function at preclinical and clinical level.
- Clinical trials of immunologic stimulation incorporating radiation therapy.
- Quantitative, big data and population-based approaches to immunological effects.

Our deadline for manuscript submission is January 15, 2020. Please select "Special Issue – RT and the Immune Response" as the article type. If past evidence is a good guide, we anticipate an excellent response. Thanks in advance to all of you who submit manuscripts, and we are looking forward to an excellent special edition of the journal.

STAGE ON SCLC IS TREATED WITH **CURATIVE INTENT**^{1,2}



Learn more at the AstraZeneca booth

References: 1. Ramnath N, Dilling TJ, Harris LJ, et al. Treatment of stage III non-small cell lung cancer: diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest.* 2013; 143(suppl 5):e314S-e340S. **2.** Socinski MA, Evans T, Gettinger S, et al. Treatment of stage IV non-small cell lung cancer. Diagnosis and management of lung cancer, 3rd ed: American College of Chest Physicians evidence-based clinical practice guidelines. *Chest.* 2013; 143(suppl 5):e341S-e368S.



Three leading visionaries in the field named 2019 ASTRO Gold Medal recipients

by Diane Kean, ASTRO Communications

Congratulations to Walter J. Curran Jr., MD, Silvia C. Formenti, MD, FASTRO, and Thomas R. Mackie, PhD, for receiving the 2019 ASTRO Gold Medal, the highest honor presented to revered members who have made outstanding contributions to the field of radiation oncology.

"The 2019 Gold Medal recipients are truly exceptional visionaries whose contributions have significantly impacted the discipline of radiation oncology," said ASTRO Board of Directors Chair Paul Harari, MD, FASTRO. "The career work of these three individuals in advancing radiation oncology research, innovation and cancer care has forever changed the landscape of our field."

The 2019 awardees join an elite class of 87 Gold Medalists selected over the decades from the Society's more than 10,000 members. The Gold Medals will be awarded today during the Awards Ceremony, at 10:15 a.m., in Room W375 a/b/c/d.

Walter J. Curran Jr., MD, is an internationally known expert in lung cancer and brain tumors and currently serves as executive director at Winship Cancer Institute of Emory University and as a group chairman and principal investigator of NRG Oncology,



the largest of the five National Cancer Institute (NCI)-funded clinical trials network groups. He has dedicated his career to the education of future radiation oncologists and to advancing the field of radiation oncology. He is currently the only radiation oncologist to serve as director of an NCI designated cancer center. "This role is impactful to the field as it educates the broader world," said Dr. Curran. "Seeing radiation oncologists succeed in these leadership roles has a positive impact on the specialty."

Dr. Curran is a graduate of the Medical College of Georgia and early in his career held faculty roles at the University of Pennsylvania, while also practicing at Fox Chase Cancer Center in Philadelphia. It was there that he was first introduced to the NCI through the Radiation Therapy Oncology Group (RTOG). He then served as chairman of the Radiation Oncology Department for 13 years at Thomas Jefferson University. At the same time, Dr. Curran became a leader within RTOG and oversaw the tremendous growth and successful renewal of NCI grants. He was instrumental in the merging of RTOG and the Gynecologic Oncology Group and the National Surgical Adjuvant Breast and Bowel Project, now known as NRG Oncology, creating one of the largest NCI research network groups.

Perhaps one of his greatest impacts to the field is leading and engaging some of the best and brightest minds in radiation oncology in RTOG and NRG. "Working in groups like these requires a lot of compromise and volunteer effort above and beyond everyone's day job. But by working together as a group, we're able to research and change practice in a way none of us can do at our own one institution," said Dr. Curran.

Looking to the future, Dr. Curran plans to continue his transdisciplinary research, stating "When we bring disparate teams of investigators together, what great things can come."

Dr. Curran attributes many of his successes to the opportunity to work with many great people who share a common passion. "ASTRO has been my core organization throughout my whole career," said Dr. Curran. "Winning the Gold Medal means an extraordinary amount."

Silvia C. Formenti, MD,

FASTRO, is an internationally renowned physician scientist and trailblazer in radiation and immunotherapy. Dr. Formenti is chair of the Department of Radiation Oncology at Weill Cornell Medical College at Cornell University and radiation

oncologist-in-chief at New York Presbyterian Hospital. She has devoted her career to translating novel, preclinical information to the clinic, leading her peers to refer to her as "one of the most creative and productive investigators of the past two decades in how to use radiation therapy for the treatment of women with breast cancer."

Dr. Formenti graduated from the University of Milan in Italy and began her career as a medical oncologist. She later came to the U.S. for a fellowship and residency at the University of Southern California, Los Angeles. Through her care for patients with brain and lung cancers, Dr. Formenti saw the importance of the radiation component of their treatments, which led to her pursuing a second specialty in radiation oncology. "My patients that I have lost remain very present in my career," said Dr. Formenti. That impact also fueled her interest in the immune response to cancer. "I have always been interested in what takes life, what are the mechanics and mortality of cancer," said Dr. Formenti. These questions helped formulate her research - conducted well ahead of its time — in combining radiation therapy and immunotherapy treatments. The concepts and approaches are widely adopted in clinical use today and have led to more than 100 clinical trials.

In addition to her presence in the lab, her leadership has greatly impacted the specialty. Earlier in Dr. Formenti's career, she served as the first female chair of the Department of Radiation Oncology at NYU School of Medicine — one of just a few female chairs across the country at the time. Her influence and drive continue to be felt throughout the field, from the PhD students she has mentored to the researchers she works beside.

When thinking of the Gold Medal recognition, Dr. Formenti said, "It means a lot because it is

also recognition of my team and the work we've done together over the years, both my research and clinical teams. We introduced something that was a little disruptive, not conventional thinking, and it brings satisfaction that our Society is acknowledging this work. It is truly an honor."

Thomas R. Mackie, PhD,

can be categorized under many names: medical physicist, researcher, mentor, entrepreneur, professor, visionary. While he has been all these and more throughout his extensive and impressive career,



the one that carried him through his successes, and sometimes admitted failures, is visionary. "I wanted to see my research and my vision actionized into patient care. Some might call that stubborn, we'll call it visionary," said Dr. Mackie.

Dr. Mackie began his career as a health physicist in uranium mining in Saskatchewan and always held an interest in radiation science. A family member's cancer diagnosis and later radiation treatment further spurred his interest in the field. He later moved to the University of Wisconsin, where he spent the majority of his career, and is currently emeritus professor of medical physics and engineering. It is there where he excelled as a remarkable inventor, innovator and entrepreneur.

Driven by necessity and the resolve to turn discovery into clinical application, Dr. Mackie started his first company, Geometrics Corporation, to provide his research groups' software program to patients. Later known as Pinnacle, this 3-D treatment planning software dominated radiation treatment planning over a span of 20 years. The start of this company coincided with parallel work in TomoTherapy, another company started by Dr. Mackie, which he later sold to Accuray Corporation. There are nearly 750 TomoTherapy treatment units in clinical operation today. His inventions and contributions to the field of radiation oncology have impacted hundreds of thousands of cancer patients worldwide. Over the course of his career, Dr. Mackie has written more than 184 journal articles, with some of the most highly cited papers in the field and holds nearly 50 U.S. patents.

Throughout his many successes and celebrated career, Dr. Mackie is most proud of his students and inventions. "I am proud of the graduate students I have trained — more than 40 PhDs were awarded under my supervision — and the technologies I have brought into the marketplace," said Dr. Mackie. "Most importantly, I couldn't have done what I've done without the support and work of so many good scientists and smart people around me. This Gold Medal is the highest honor of my career and the greatest honor bestowed on me."

Medical Oncologist Corey J. Langer, MD Chosen as ASTRO 2019 Honorary Member



Corey J. Langer, MD, professor of medicine in the Hematology/Oncology Division at the University of Pennsylvania in Philadelphia, where he serves as director of Thoracic Oncology in the Abramson Cancer Center, has been chosen as the 2019 ASTRO Honorary Member. He will be recognized during today's Awards Ceremony, 10:15 a.m. to 11:30 a.m., in room W375 a/b/c/d.

This award is the highest honor that ASTRO bestows upon cancer physicians and researchers who do not qualify for Active ASTRO membership — namely, those in disciplines other than radiation

oncology, radiobiology or medical physics.

Dr. Langer received his medical degree from Boston University in 1981 and completed his internship and residency at the Graduate Hospital of the University of Pennsylvania in Philadelphia in 1984. His postgraduate training included a fellowship in Hematology/Oncology at the Penn Presbyterian Medical Center and a fellowship in Oncology at the American Oncologic Hospital/Fox Chase Cancer Center. He served there from 1986 until 2008, leading its Thoracic Oncology Program for the final 14 years of his tenure before moving in June 2008 to the University of Pennsylvania, where he currently heads the Inter-disciplinary Thoracic Oncology Program.

A Fellow of the American College of Physicians, Dr. Langer is also a member of the American Society of Clinical Oncology, the American Association for Cancer Research, the International Association for the Study of Lung Cancer, and the American College of Physicians. He has served as vice-chair of the Radiation Therapy Oncology Group (RTOG, now NRG) and co-chairs its Medical Oncology Committee. He is a frequent contributor to OncLive, an online forum of oncologists and allied health professionals throughout the world who communicate and collaborate on solutions to current challenges in cancer treatment.

Dr. Langer has contributed more than 200 articles and abstracts to the medical literature. His work has appeared in numerous medical journals, and he has presented at national meetings of leading medical organizations. He currently serves on the editorial boards of Clinical Lung Cancer and Clinical Advances in Hematology and Oncology, and, since 2005, has chaired the "Perspectives in Thoracic Oncology Meeting," an annual gathering in New York that features updates on the treatment of lung cancer.

ASTRO Honorary Membership is awarded to an individual for having made significant contributions to the specialty of radiation oncology. Mitchell Machtay, MD, FASTRO, noted in his nomination of Dr. Langer that he had not met a medical oncologist who is more "passionate about combined modality, curative-intent therapy for locally advanced lung cancer" than Dr. Langer. Continued Dr. Machtay, "Simply put: There are only a small number of medical oncologists who have had greater influence and contributions promoting combined modality therapy; there are a fewer number of medical oncologists who have participated so heartily in the annual ASTRO meetings. And there are no medical oncologists who have provided as much service to the Radiation Therapy Oncology Group/NRG Oncology Cooperative Group and its prospective, radiation oncology oriented clinical trials as Dr. Langer has."



Back by popular demand are the ASTRO Connect Booths, each with a different focus — Breast, Central Nervous System, Head and Neck, Lung and Physics. These booths provide a spot for networking, as well as a place to recharge devices and check email. Top posters will be on digital display and experts will be available during designated hours to answers your guestions.

MEET THE EXPERTS • TUESDAY, SEPTEMBER 17

Breast – Booth #3245			
10:30 a.m. — 11:00 a.m.	Rachel Jimenez, MD, and EDU 05 Faculty		
12:15 p.m 12:45 p.m.	Julia White, MD, FASTRO		
2:30 p.m. – 3:00 p.m.	Jean Wright, MD, and Panel 11 Faculty		
Central Nervous System – Booth #3205			
10:30 a.m. – 11:00 a.m.	Christina Tsien, MD		
12:15 p.m. – 12:45 p.m.	Erik Sulman, MD, PhD, and Jona Hattangadi-Gluth, MD, Joint Session 02		
4:15 p.m. – 4:45 p.m.	Eric Mellon, MD, PhD, and Tony Wang, MD, Panel 13		
	Head and Neck – Booth #1245		
10:30 a.m. — 11:00 a.m.	David Palma, MD, PhD		
12:15 p.m. – 12:45 p.m.	Samuel Swisher-McClure, MD, MS, and Alexander Lin, MD		
2:30 p.m. – 3:00 p.m.	Heath Skinner, MD, PhD		
Lung – Booth #3224			
10:30 a.m. – 11:00 a.m.	Melissa Frick, MD, and Gary Kao, MD, PhD		
12:15 p.m. – 12:45 p.m.	Katelyn Atkins, MD, PhD, and Raymond H. Mak, MD		
2:30 p.m. – 3:00 p.m.	Percy Lee, MD		
Physics – Booth #1205			
10:30 a.m. — 11:00 a.m.	Ammoren Dohm, MD		
12:15 p.m. – 12:45 p.m.	Xiaojian Chen, PhD		
2:30 p.m. – 3:00 p.m.	Ruijiang Li, PhD		

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Twenty-six distinguished ASTRO members awarded Fellow designation

ASTRO has selected 26 members to receive the ASTRO Fellow (FASTRO) designation. The 2019 class of Fellows will be inducted during today's Awards Ceremony at 10:15 a.m. in Room W375 a/b/c/d.

"These 26 new Fellows have contributed to ASTRO, to the field of radiation oncology and to cancer patients worldwide in many wonderful ways," said Francine Halberg, MD, FASTRO, and chair of the Fellows Selection Committee. "I am thrilled to honor them today as they receive their Fellows designation."

The Fellows program commenced in 2006 and continues today to honor those that have been an Active, International or Emeritus member of ASTRO, have given significant service to ASTRO and have made contributions to the field of radiation oncology in the areas of research, education, patient care or service and leadership.

Congratulations to the 2019 Fellows:

- Ron R. Allison, MD, Federal Medical Center, Butner, North Carolina
- Felipe A. Calvo, MD, Clinica Universidad de Navarra, Madrid-Pamplona, Spain
- Allen M. Chen, MD, University of California, Irvine, School of Medicine, Orange, California
- Gregg E. Franklin, MD, PhD, New Mexico Cancer Center, Albuquerque, New Mexico
- Joel S. Greenberger, MD, UPMC Hillman Cancer Center, Pittsburgh
- Daphne Haas-Kogan, MD, Dana-Farber Cancer Institute/Brigham and Women's Hospital, Boston
- Michele Y. Halyard, MD, Mayo Clinic, Scottsdale, Arizona
- Kathleen M. Hintenlang, PhD, The Ohio State University, Columbus, Ohio
- Vivek S. Kavadi, MD, Texas Oncology, Sugar Land, Texas

- Paul J. Keall, PhD, MS, BS, The University of Sydney, Camperdown, Australia
- Larry L. Kestin, MD, Michigan Healthcare Professionals, Farmington Hills, Michigan
- Deepak Khuntia, MD, Precision Cancer Specialists and Varian Medical Systems, Palo Alto, California
- David G. Kirsch, MD, PhD, Duke University Medical Center, Durham, North Carolina
- Sunil Krishnan, MD, Mayo Clinic, Jacksonville, Florida
- Fei-Fei Liu, MD, Princess Margaret Cancer Centre/University Health Network, Toronto
- Daniel A. Low, PhD, University of California, Los Angeles
- Matthew A. Manning, MD, Cone Health, Greensboro, North Carolina
- Rinaa S. Punglia, MD, MS, MPH, Dana-Farber Cancer Institute/ Brigham and Women's Hospital/Harvard Medical School, Boston
 Description of the Description of the School School
- Ramesh Rengan, MD, PhD, University of Washington, Seattle
- Ugur Selek, MD, The University of Texas MD Anderson Radiation Treatment Center at American Hospital, Istanbul, Turkey
- Helen A. Shih, MD, MS, MPH, Massachusetts General Hospital, Boston
- Benjamin D. Smith, MD, The University of Texas MD Anderson Cancer Center, Houston
- Srinivasan Vijayakumar, MD, University of Mississippi Medical Center, Jackson, Mississippi
- Akila N. Viswanathan, MD, Johns Hopkins Medicine, Baltimore
- Catheryn M. Yashar, MD, University of California San Diego, La Jolla, California
- Torunn I. Yock, MD, MCH, Massachusetts General Hospital, Boston

It's not just lunch — the Annual Business Meeting and Luncheon

The Annual Business Meeting and Luncheon will be held today from 11:30 a.m. to 1:00 p.m. ASTRO voting members — Active, Affiliate and International members — are encouraged to attend to learn about the latest events and initiatives going on at ASTRO.

ASTRO Chair Paul Harari, MD, FASTRO, will open the meeting by recognizing the volunteers who are rotating off their respective councils and committees. Of special note, the following members will be rotating off the ASTRO Board of Directors: Immediate Past Chair Brian Kavanagh, MD, MPH, FASTRO, Health Policy Council Chair Michael R. Kuettel, MD, PhD, MBA, FASTRO, Science Council Chair Dan Low, PhD, FASTRO. Next, Dr. Harari will introduce and welcome the new ASTRO Board members including President-elect Laura Dawson, MD, FASTRO, incoming Health Policy Council Vice-chair Constantine Mantz, MD, incoming Science Council Vice-chair Brian Marples, PhD, and Secretary Treasurer-elect Neha Vapiwala, MD.

ASTRO Chief Executive Officer Laura Thevenot will follow with important updates on how Americans feel about "Medicare for All" and drug pricing and what may lie ahead from a legislative perspective. Ms. Thevenot will also share the proposed bylaws changes. The bylaws were last updated in the fall of 2015, and since that time, several Board decisions required modest modifications to the bylaws:

- Two new membership categories:
- Postdoctoral fellows and medical students.
- Nominating committee recommendation to handle all council leadership elections in the same manner.

As per the bylaws, these changes require ratification by ASTRO members. An electronic ballot will be sent out to all voting members later this fall.

Dr. Harari will return to the podium to provide a recap of a very busy year. During his year as ASTRO Chair, he has led the charge on many fronts, including the proposed alternative payment model, prior authorization and resident training and testing. Following his remarks, the gavel will pass to Theodore DeWeese, MD, FASTRO, who will assume his new role as ASTRO Chair.

Dr. DeWeese will share his priorities for the year ahead. A sneak peek into these priorities include taking what we learned from the Scope of Practice survey conducted earlier this year and putting the results into action; identifying the factors that will influence our practice in the future; focusing on the training needs of our members; seeking out partnerships to maximize grant funding; and continuing our work on raising the profile of radiation oncology and educating patients about our field.

The Business Meeting will end with the newly promoted ASTRO President Thomas Eichler, MD, FASTRO, who will set the stage for next year's Annual Meeting. The theme for ASTRO's 62nd Annual Meeting is The Global Clinic: Cancer Care without Boundaries, and Dr. Eichler already has a stellar line up of presenters.

The Annual Business Meeting and Luncheon is a prime opportunity for you to stay in touch with your Society and leadership. We invite you to attend the meeting, enjoy lunch and the camaraderie of your fellow members and participate in the conversation.



CORPORATE AMBASSADORS

ASTRO PROUDLY RECOGNIZES THE ONGOING COMMITMENT OF OUR CORPORATE AMBASSADORS FOR THEIR OUTSTANDING YEAR-ROUND LEADERSHIP AND PROMOTIONAL SUPPORT OF RADIATION ONCOLOGY.



INDUSTRY-EXPERT THEATERS

Tuesday, September 17

Theater 1, Innovation Hub

Identifying and Treating Patients With Non-metastatic Castration Resistant Prostate Cancer 10:15 a.m. – 11:15 a.m. Company: Janssen Biotech

Theater 2, Innovation Hub

TTFlelds for the Radiation Oncologist 10:15 a.m. – 11:15 a.m.

Company: Novocure

Theater 1, Innovation Hub

Oncotype DX®: Personalizing Approaches to Locoregional Recurrence in Invasive Breast Cancer and DCIS

12:00 p.m. – 1:00 p.m.

Company: Genomic Health

Theater 2, Innovation Hub

Come Discover a Systemic Treatment Option for Patients with Advanced CSCC 12:00 p.m. – 1:00 p.m.

Company: Sanofi Genzyme

INDUSTRY SATELLITE SYMPOSIA

TUESDAY, SEPTEMBER 17, 2019

6:15 p.m. – 6:45 p.m | Registration and Dinner 6:45 p.m. – 8:15 p.m. | Symposium

Challenges, Controversies and Opportunities in the Management of EGFR-mutant Lung Cancer with Central Nervous System Metastases: Working Together to Improve Patient Outcomes

Venue Location: Hyatt Regency McCormick Place, Regency Ballroom CDE · Dinner will be provided.

Accreditation: This activity will be planned and implemented in accordance with the accreditation requirements and policies of the Accreditation Council for Continuing Medical Education (ACCME) through the joint providership of Medical Learning Institute Inc. and PVI, PeerView Institute for Medical Education. The Medical Learning Institute Inc. is accredited by the ACCME to provide continuing medical education for physicians.

CME Credits: The Medical Learning Institute Inc. designates this live activity for a maximum of *1.5* AMA PRA Category 1 Credits[™]. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

To register or for more information, please visit www.PeerView.com/radEGFR19

This activity is supported by an independent educational grant from AstraZeneca.

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Best 20u/25	20, 25–15	Best 15 + ¹²³ I, ¹¹¹ In, ⁶⁸ Ge/ ⁶⁸ Ga
Best 30u (Upgradeable)	30	Best 15 + ¹²³ I, ¹¹¹ In, ⁶⁸ Ge/ ⁶⁸ Ga
Best 35	35–15	Greater production of Best 15, 20u/25 isotopes plus ²⁰¹ Tl, ⁸¹ Rb/ ⁸¹ Kr
Best 70	70–35	⁸² Sr/ ⁸² Rb, ¹²³ I, ⁶⁷ Cu, ⁸¹ Kr + research





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