SYEAR IN REVIEW

Gleiberman Head and Neck Cancer Center Moores Cancer Center at UC San Diego Health



UC San Diego Health

The Best in San Diego

UC San Diego Health was ranked the top hospital in San Diego, and sixth in California, by U.S. News & World Report for 2020-2021.

Top 10 in the Country

We were ranked #6 in the nation for patient care amongst all academic medical centers by Vizient, Inc.

World-Class Cancer Care

Recognized by U.S. News & World Report as one of the best cancer centers in the nation, Moores Cancer Center is also the region's only NCIdesignated Comprehensive Cancer Center—the highest recognition available for commitment to cancer research, education, and care.

All A's for Safety

Leapfrog Group awarded UC San Diego Health double-A ratings for providing demonstrably safer health care for its patients by Leapfrog Group in 2020.



Thank you

It is a pleasure to share the 2020 annual report for the Gleiberman Head and Neck Cancer Center. In the pages ahead, you will see how dedicated physicians and scientists, innovative exploration, and forward-thinking partners contribute to our ability to improve care and redefine how we understand and treat head and neck cancer.

The Head and Neck Cancer Center has had an extraordinary year. We are profoundly grateful to Hanna and Mark Gleiberman as well as the entire Gleiberman family, for their generous support to fund and endow the Head and Neck Cancer Center, hereafter named the Gleiberman Head and Neck Cancer Center. This transformative gift will accelerate our ability to create groundbreaking discoveries and new therapies for head and neck cancer, as well as develop novel, effective, compassionate care that returns our patients to health and wellness.

I am proud to share how much our team has grown in the past year, including the addition of Dr. Theresa Guo, a surgeon scientist trained at Johns Hopkins and MD Anderson who is focusing on creating novel therapies based on understanding RNA splicing in head and neck cancer, as well as treating patients with complex head and neck cancer diagnoses.

Our team continues to lead in advancing the understanding of head and neck cancer, publishing seminal studies in immunotherapy as well as translational science, some of which are detailed below. We are happy to provide over 20 active trials currently, representing concepts developed here at UC San Diego Health. The entire team strives to maintain a patient-centered environment, focused on compassionate care, based on the intrinsic part of our commitment to care for life in every aspect of our operations. I am excited to share a year of wins and discoveries with you, and look forward to many more.

Thank you.

Joseph A. Califano III, MD Physician in Chief, Moores Cancer Center Director, Gleiberman Head and Neck Cancer Center Co-Leader, Structural and Functional Genomics Professor, Division of Otolaryngology-Head and Neck Surgery Department of Surgery University of California, San Diego

Innovation & Growth



x20 Active clinical trials currently underway in Head and Neck Cancer

Gleiberman Head and Neck Cancer Center Visits

14,000 -12,000 10,000 8,000 6,000 -2,468 4,000 -1,148 310 2,000 -3,767 3,758 3,873 2,930 2,342 2,438 FY15 FY16 FY17 FY18 FY19 FY20 Surgical Oncology Medical Oncology Radiation Oncology

by year and sub-specialty



Total number of patient visits



Annual Report Head and Neck Cancer | pg 3



Hanna and Mark Gleiberman

Hanna and Mark Gleiberman Gift Transforms Head and Neck Cancer Care at UC San Diego Health Moores Cancer Center

Thanks to the generosity of Hanna and Mark Gleiberman, we are happy to celebrate the newly named Hanna and Mark Gleiberman Head and Neck Cancer Center. This transformative \$12 million gift will broaden the depth and impact of our cutting-edge head and neck cancer research program, and support innovative clinical care for our patients and their caregivers.

We know that our team members, patients, and their caregivers are our most important resource. In recognition of this, Gleiberman Head and Neck Cancer Center will fund novel

Continued on page 7



J. Silvio Gutkind, PhD

J. Silvio Gutkind, PhD Named Chair of the Department of Pharmacology

J. Silvio Gutkind, PhD, Co-Director of Gleiberman Head and Neck Cancer Center, has been named chair of the Department of Pharmacology at University of California San Diego School of Medicine. Gutkind has

supervised and mentored many junior investigators, who are now playing leadership roles in multiple institutions in the U.S. and abroad. One of Gutkind's main goals is to enhance collaborations between the department's outstanding basic scientists and clinicians at UC San Diego Health and Moores Cancer Center.

"Silvio is an exceptional leader, and he has an extraordinary ability to build collaborations, wide-ranging intellectual insights and seemingly limitless energy," said Steven Garfin, MD, interim dean of UC San Diego School of Medicine. "I'm thrilled to support him in his new role."

Gutkind joined the UC San Diego School of Medicine faculty in 2015 and has served as Distinguished Professor in the Department of Pharmacology, as well as associate director of basic science and co-director of the Gleiberman Head and Neck Cancer Center at Moores Cancer Center. He has received funding support from the National Cancer Institute and the National Institute of Dental and Craniofacial Research, and he co-leads one of the national Cancer Moonshot Research Initiatives managed be a consortium of companies called The National Immunotherapy Coalition and Vice President Joe Biden.





Theresa Guo, MD Joins Gleiberman Head and Neck Cancer Center

This year, the Gleiberman Head and Neck Cancer Center proudly welcomes Dr. Theresa Guo on to our team of Head and Neck surgeons. Dr. Guo received her medical degree from the Cleveland Clinic, Lerner College of Medicine, Case Western Reserve

Theresa Guo, MD

University, following completion of her bachelor's degree in Mechanical Engineering from the Massachusetts Institute of Technology. She then went on to complete her residency training in Otolaryngology-Head and Neck Surgery at Johns Hopkins School of Medicine and fellowship training in Advanced Head and Neck Surgical Oncology at the University of Texas MD Anderson Cancer Center.

Throughout her training, Dr. Guo has also cultivated extensive experience in basic and translational research, which has helped to establish her reputation as a promising young investigator in genomics and personalized medicine for head and neck cancer. Her research is focused on utilizing computational and bioinformatic technologies to understand splicing alteration in head and neck tumors. She has previously identified several splicing variants that contribute to oncogenesis in head and neck tumors, and she plans to continue this work at UCSD to translate this genomic knowledge towards development of novel biomarkers and targeted therapies.



Liza Blumenfeld, MA, CCC-SLP, BCS-S

2020 Katrina Clynch Compassionate Caregiver Award – Recipient Liza Blumenfeld, MA, CCC-SLP, BCS-S

The Katrina Clynch Compassionate Caregiver Award is given to a member of the Gleiberman Head and Neck Cancer Center who exemplifies extraordinary dedication to patients

while having the mindset of wishing the best for others and the courage to take action. Liza Blumenfeld has proven consistently her ability to assist other leaders by demonstrating how to build a better organization while providing hope and a feeling of peace and safety to patients and their families during times of need.

Highlighting Progress



Andrew B. Sharabi, MD, PhD

B-cells Improve Overall Survival in HPV-Associated Malignancies and Are Activated by Radiation and Checkpoint Blockade Immunotherapy

The human papilloma virus (HPV) is estimated to be the cause of approximately 5% of all cancers worldwide resulting in significant

morbidity and mortality. Recently, the immune system has been demonstrated to play a critical role in controlling HPV associated tumors and checkpoint blockade immunotherapy targeting the PD-1/PD-L1 axis has revolutionized the treatment paradigm for head and neck squamous cell carcinoma (HNSCC). Unfortunately the objective response rate remains quite low on the order of 16-20%, illustrating the need for novel combinations of treatment modalities. Radiation therapy is an integral component in the treatment of HNSCC and understanding how radiation works in concert with immunotherapy is a very active area of investigation. In this study Dr. Sharabi set out to characterize the role of B-cells on HPV-associated cancer patient outcomes and determine the effects of radiation and PD-1 blockade on B-cell populations.

Dr. Sharabi and colleagues discovered a remarkable beneficial role for B-cells in overall survival of patients with squamous cell carcinomas and used cutting edge technologies to comprehensively characterize the effects of PD-1 blockade and radiation therapy on B-cell populations. They first analyzed tumor RNA sequencing data from over 800 HNSCC and cervical cancer patients and identified CD19 and IGJ as positive single gene B-cell specific prognostic biomarkers for 3-year overall survival. Next using novel murine models of HPV+ HNSCC tumors they identified that PD-1 blockade and RT enhance development of memory B-cells, plasma cells, and antigen-specific B-cells. Using single-cell RNA sequencing the Sharabi Lab identified dramatic increases in B-cell germinal center formation after PD-1 blockade and RT.

These data establish a key role for B-cells in HPV-associated squamous cell carcinomas and provide strong rationale for development of additional diagnostics and novel therapeutics targeting B-cells. Ultimately, this study highlights the important role of B-cells in anti-tumor immune responses and contributes to our knowledge of the role that different immune cell populations play in oncology. For More Information: Kim, SS et al Clin Cancer Res. 2020 Jul 1



Choosing the ap

Loren K. Mell, MD

Omega Scores Useful for Guiding Treatment Decisions in US Veterans with Head and Neck Cancer

Choosing the appropriate level of treatment intensity for head and neck cancer is an important but complicated clinical problem. Overtreatment can lead to avoidable long-term side effects that negatively impact patients'

quality of life, whereas undertreatment can expose patients to unnecessary risk of cancer mortality and/or aggressive salvage treatments. Optimal treatment selection requires taking into account a number of risk factors for both cancer recurrence and competing health events, such as mortality due to lung or heart disease, or treatment-related complications. A limitation of existing treatment recommendation guidelines is that they do not explicitly take into account the tradeoffs between risk for cancer events vs. competing health events, leading to improper risk assignment and unacceptably high rates of both over- and under-treatment. Dr. Loren Mell and lab members have developed a scoring method called the "omega score" that explicitly takes into account a host of tumor-related, demographic, and health-related metrics to forecast an individual patient's overall event risk attributable to cancer. For patients with high scores (near 100%), cancer recurrence is the dominant event risk, whereas for intermediate scores (near 50%), cancer and non-cancer event risks are approximately equal.

Prior research has found that patients with scores above 80% clearly benefit from more intensive treatments (chemotherapy, altered radiation fractionation, etc.), whereas for patients with lower scores, the benefit of intensive therapy is not as clear. In this study involving 7117 U.S. Veterans, we sought to determine whether omega scores were associated with the utilization of intensive therapy, and whether incorporating comorbidity information into the scoring algorithm would improve risk modeling. Overall, Mell found that patients high omega scores >= 80% were 4.5 times as likely to receive intensive therapy compared to patients with lower scores, and that omega scores were highly effective in predicting veterans' competing event risk, particularly in older (age > 70) patients. Moreover, Mell found that incorporating comorbidity information could substantially improve prognostication and treatment selection. For More Information: Zakeri, K et al, Cancer. 2020

Highlighting Progress



J. Silvio Gutkind, PhD

Precision Medicine Identifies Key Recurring Mutation in Head and Neck Cancers

Head and neck cancer is one of the leading causes of cancer-related deaths worldwide, and squamous cell carcinomas (HNSCC) account for the majority of these cases. In a new study, based on preclinical

research and published July 29, 2020 in Molecular Cancer Therapeutics, a journal of the American Association for Cancer Research, researchers at University of California San Diego School of Medicine and Moores Cancer Center report that an investigational drug candidate called tipifarnib showed promise in treating HNSCC tumors with mutations in the HRAS gene.

The findings shed new light on the HRAS gene, a member of the RAS family of genes that produce proteins that regulate a variety of cellular processes, including growth, movement and differentiation. In 4 to 8 percent of HNSCC tumors, the HRAS gene is mutated.

"This preclinical research has the potential to extend to the entire HNSCC patient community, whose overall survival rates are limited in recurrent or metastatic disease, and existing therapeutic options that are far from optimal, with response rates of roughly 10 to 20 percent," said senior co-author J. Silvio Gutkind, PhD, Distinguished Professor of Pharmacology and associate director of basic science at UC San Diego Moores Cancer Center. "These preclinical findings support the idea that HRAS represents a druggable oncogene in HNSCC through tipifarnib's inhibition of a key enzyme. It is a precision therapeutic option for HNSCCs harboring HRAS mutations."

Head and neck cancer accounts for approximately 650,000 cases and 330,000 deaths annually worldwide. In the United States, approximately 4 percent of all cancers are head and neck, with an estimated 65,630 persons diagnosed each year, two-thirds of them men and 14,500 deaths, according to Cancer.Net. For More Information: <u>Gilardi, M et al Mol Cancer Ther September 1 2020</u>



Califano, Guo and Members of Moores Cancer Center Identify Alternative Carcinogenic Pathways in HPV Positive Cancers

For many years, it has been understood that human papillomavirus (HPV) caused cancer, both cervical and oropharyngeal, through the action

Joseph A. Califano III, MD

of viral oncoproteins E6 and E7. In this study Califano, Guo and members of the Moores Cancer Center define a new class of HPV-related tumors in which a novel alternative pathway drives oncogenesis through viral proteins E2, E4 and E5. These tumors are defined by episomal HPV, rather than integration of HPV virus into the host tumor genome. Furthermore, these tumors demonstrate activation of the fibroblast growth factor receptor (FGFR) pathway and show susceptibility to treatment with a combination of FGFR and mTOR inhibitors. For more information: <u>Ren, S et al Oncogene August 26 2020</u>



Parag Sanghvi, MD Serves as International Education Lead for the 501(c)(3) Rayos Contra Cancer (RCC)

A 501(c)(3) non-profit organization, Rayos Contra Cancer's (RCC) vision is to improve cancer care in low-resource areas around the world, through education of local

Parag Sanghvi, MD

physicians, collaborative and clinically meaningful research, and optimizing patient care. RCC works with existing radiotherapy clinics around the world, focusing on education and training programs. It is involved in clinics throughout Latin America, Africa and the Middle East. Along with Dr. Sanghvi, the RCC Educator Team is comprised of academics from across the country including Jason Chan (UCSF), John Holland (OHSU), Ken HU (NYU), Ana Kiess (Johns Hopkins), Lisa McGee (Mayo), David Palma (LHSC), and Samir Patel (Mayo). This initiative is focusing on eight Filipino Centers in Manila and other cities.





Fernanda Whitworth, Dr. Ezra Cohen, Ralph Whitworth (Left to Right)

First-in-Class Adoptive Cell Therapy, Funded by Immunotherapy Foundation, Reaches Phase 1 Clinical Trial

A first-in-class personalized cell therapy, a kind of tumor infiltrating lymphocyte (TIL) therapy, initiated in 2017 by the Immunotherapy Foundation, has reached an important milestone – the enrollment of patient 1 in a phase I clinical trial. "This precision approach to creating adoptive cell therapies, tailored exactly to an individual's cancer, is an exciting advance in cancer therapy," said Ezra Cohen, MD, co-Director of the San Diego Center for Precision Immunotherapy and Professor of Medicine and Chief of the Division of Hematology-Oncology at UC San Diego Moores Cancer Center. "This approach will begin with the T cells that have reached an individual's tumor, but are unable to mount a strong enough anti-cancer response." This therapy is designed to expand and reintroduce T cells that can identify unique targets on the surface of an individual's tumor, destroying only cancer cells, and providing immune memory to prevent recurrence of disease. For more information: https://www.theimmunotherapyfoundation.org/donate/

Hanna and Mark Gleiberman Gift Transforms Head and Neck Cancer Care at UC San Diego Health Moores Cancer Center (*continued*)

clinical trials, programs for pilot research projects, significant endowment to support key researchers, as well as support for collaborative clinical care, ensuring the excellence of the center for generations to come. Hanna and Mark, the founder and CEO of San Diego-based real estate investment firm MG Properties Group, recognized that the team-based integration of clinical care, research and supportive care provided by the center was a key factor in their decision to provide such extraordinary support.

"Particularly during a pandemic as serious as COVID-19, illnesses such as cancer continue to impact health and human lives as never before. This makes our mission of providing comprehensive, integrated head and neck cancer care paired with a world class clinical and translational research effort as important as ever. Hanna and Mark have joined our team as partners who understand how important this work is to both serve our local community and to fundamentally transform care for all head and neck cancer patients," says Joseph A. Califano III, MD, director of Gleiberman Head and Neck Cancer Center and physician-in-chief at Moores Cancer Center.

"Partners such as Hanna and Mark are central to what makes Moores Cancer Center the quality place it is for cancer research and care. I am so grateful for their gift and honored by their partnership," adds Scott Lippman, MD, Chugai Pharmaceutical Chair and director of Moores Cancer Center.

Our Team

Surgical Oncology Michael Bouvet, MD Kevin Brumund, MD Joseph Califano, MD* Charles Coffey, MD Theresa Guo, MD Ryan Orosco, MD

Medical Oncology

Anjali Bharne, MD Ezra Cohen, MD* Greg Daniels, MD Kathryn A. Gold, MD Derek Helton, MD, FACP Scott Lippman, MD Assuntina Sacco, MD Fareeha Siddiqui, MD Sarah McGhee, MS, ANP-BC

Radiation Oncology

Loren Mell, MD* Douglas Rahn, MD Brent Rose, MD Parag Sanghvi, MD, MSPH Andrew Sharabi, MD James Urbanic, MD

Radiology Julie Bykowski, MD Marin McDonald, MD, PhD

Clinical Informatics Specialist Celia Ramsey

Dietary/Nutrition Patricia Rubio, MS, RD, CNSC Traci Roberts MS RD Patrick Pablo RD

Graphic Design Tracy Dezenzo Laryngology Andrew Vahabzadeh-Hagh, MD Philip Weissbrod, MD

The Lynn and Richard Gordon Family Patient Navigator John Fouania

Neurotology, Rhinology and Skull Base Surgery Joseph Califano, MD Adam DeConde, MD, PhD Rick Friedman, MD, PhD Jeffrey Harris, MD, PhD

Pathology Grace Lin, MD Alfredo Molinolo, MD, PhD

Pharmacist Linda Barnachea, Pharm.D. BCOP

Program Manager Jayna Athas, MA Reconstructive Surgery Jacqueline Greene, MD Frederic Kolb, MD Ryan Orosco, MD Christopher Reid, MD

Rehabilitation Services

Liza Blumenfeld, MA Catherine Burgess, DPT, OCS Resie Collins, OTR/L Alyssa Mikut, OTR/L

Research Director J. Silvio Gutkind, PhD*

Social Worker Margaret Sheridan, LCSW

Speech Language Pathology Liza Blumenfeld, CCC-SLP, BCS-S* Andi Docktor, MA, CCC-SLP Kristen Linnemeyer, CCC-SLP

Survivorship Program Carie Montesa, NP

*denotes center co-directors

UC San Diego The Campaign For

success, transforming our campus, connecting our we are enhancing student support, ensuring student comprehensive fundraising effort concluding in 2022the Campaign for UC San Diego—our university-wide convention is our most cherished tradition. Through At the University of California San Diego, challenging

You may opt out of receiving fundraising information lifesaving discoveries, and planet-changing impact. το καις κελο μείου αιλισεας, unexpected answers, bartners, we will continue our nontraditional path on a global scale. Iogether with our philanthropic community, and redefining medicine and health care

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choice to opt-out of a fundraising communication. <u>1-800-588-2734 or by email, optout-hsdev@ucsd.edu.</u> for UC San Diego Health by contacting us toll-free at

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Jayna Athas | Program Manager Pilar Gose | Director of Development UC San Diego Health Advancement T: 858-246-1328 | E: pgose@ucsd.edu

Learn More



Moving Forward What the Future Holds for the Head and Neck Cancer Center

The past year has been exciting and exceptionally productive, and we because of your support that we have been able to make great strides in a short time frame.

As we continue to evolve, we look forward to continuing to provide up-and-coming cancer care leaders with the opportunity to work sideby-side with our experts; contribute to novel discoveries, treatments,

and technologies; and hone their skills in an innovative, science-driven clinical setting. We also aim to create startup funds and pilot funds for research faculty and younger faculty members. These will fuel

investigative endeavors not typically supported through grant and

changers of tomorrow to begin forward-thinking work today.

government funding and create a powerful foundation for the game-

look to our next steps with optimism and an entrepreneurial spirit. It is

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