

Southern California Center for Young
Adult Cancer Survivorship Research

ANNUAL REPORT 2022

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FOREWORD

As Directors of the USC Norris Comprehensive Cancer Center and the UCI Chao Family Comprehensive Cancer Center, we are delighted to introduce this 2022 Annual Report from the Southern California Center for Young Adult Cancer Survivorship Research. With its mission to study and improve health outcomes for young adult cancer survivors, the Center was launched at USC in 2019 creating an inclusive, interdisciplinary research collaborative focused on better understanding and addressing the unique needs of this growing population.

Each year in the United States, approximately 90,000 young adults and 15,000 children and teens are diagnosed with primary cancer. With 5-year aggregate survival rates now over 84% for both groups, there are more long-term survivors than ever before—with years of life ahead of them. Many survivors deal every day with serious, adverse consequences of cancer treatment, including medical late effects, psychosocial challenges, and financial hardship. Exacerbating these are health disparities that disproportionately burden minoritized communities of color and those of low socioeconomic status. All of these issues are the concern of this Center, which leverages Southern California's remarkable population diversity to conduct clinically impactful research. With its successful track record of securing NIH-funded grants, the Center supports both new and established investigators, as well as trainees pursuing careers in this area.

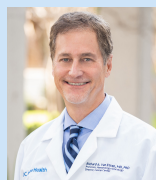
The research conducted by Center associates is diverse, but it is united by a common goal: **to maximize quality of life for young adult cancer survivors**. We consider the Southern California Center for Young Adult Cancer Survivorship Research to be a shared asset of our cancer centers and offer our congratulations for the accomplishments highlighted in this 2022 Annual Report.



Caryn Lerman

Caryn Lerman, PhD
Director, USC Norris Comprehensive Cancer Center
H. Leslie Hoffman and Elaine S. Hoffman Chair in Cancer Research
Associate Dean for Cancer Programs
USC Distinguished Professor

USC Norris Comprehensive
Cancer Center
Keck School of Medicine of USC



Richard A. Van Etten

Richard A. Van Etten, MD PhD
Director, Chao Family Comprehensive Cancer Center
Chao Family Endowed Director's Chair in Cancer Research & Treatment
Professor of Medicine and Biological Chemistry
Senior Associate Dean & Associate Vice Chancellor for Cancer

UCI 趙 Chao Family
Comprehensive Cancer Center

INTRODUCTION

Our mission is to study and improve health outcomes of young adult cancer survivors.

The Southern California Center for Young Adult Cancer Survivorship Research is an interdisciplinary collaborative comprising affiliated clinical and research faculty, staff, trainees, and patient advocates at the University of Southern California and the University of California, Irvine. Our research focuses on population health, health services and systems, wellbeing, quality of life, and medical outcomes among young cancer survivors up to approximately middle age.

OUR WORK

The Center was developed to increase connectivity and facilitate meaningful collaborations among faculty and associates who maintain, or wish to develop, a research focus in this area. Through raising awareness of opportunities, highlighting the availability of clinical and scientific resources, connecting investigators, and hosting an expert speaker series, the Center aims to support investigators in their pursuit of research and competitive grant funding. A major priority of the Center is training the next generation of researchers in pediatric, adolescent, and young adult cancer survivorship.

Co-Directors



David R. Freyer, DO, MS
Professor of Clinical Pediatrics,
Medicine, and Population and Public
Health Sciences, Keck School of
Medicine of USC



Kimberly A. Miller, PhD, MPH
Associate Professor, Department
of Population and Public Health
Sciences, Department of
Dermatology, Keck School of
Medicine of USC



Joel Milam, PhD
Professor, Department of
Epidemiology and Biostatistics,
Program in Public Health and
Department of Medicine, School
of Medicine, University of
California, Irvine

HISTORY AND ACTIVITIES OF THE CENTER

Launched in 2019 under the leadership of founding co-directors **David R. Freyer, DO, MS, Kimberly A. Miller, PhD, MPH, and Joel Milam, PhD**, the Center was established at the USC Norris Comprehensive Cancer Center through two team building grants awarded by the Southern California Clinical and Translational Science Institute. With the transition of Dr. Milam to the University of California Irvine in 2021, the Center is now based at both the USC Norris Comprehensive Cancer Center and the Chao Family Comprehensive Cancer Center at UC Irvine.

The Center maintains a strong and productive commitment to pre- and post-doctoral PhD trainees, as well as medical fellows, residents, and students.

Regular meetings and presentations by both internal investigators and external guest speakers provide Center associates with a robust communication and learning network.

Leveraging the extraordinary racial, ethnic and cultural diversity found in Southern California, the Center's research activities are organized under four topical domains: *Biomedical Outcomes, Biopsychosocial and Behavioral Outcomes, Health Services, and Epidemiology and Population Science.*



The Chao Family Comprehensive Cancer Center at UC Irvine

USC Norris Comprehensive Cancer Center



Close ties connect the Center with established clinical programs in adolescent and young adult (AYA) cancer and survivorship at these facilities. External collaborators span additional institutions across the United States and include former Center researchers and alumni.

CENTER EVENTS IN 2022

The Center hosts research talks by national experts in young adult cancer survivorship in our biannual research forums and bimonthly meetings to highlight research in-progress by Center associates.

RESEARCH FORUMS

Michael Roth, MD, Associate Professor, The University of Texas MD Anderson Cancer Center- Opportunities to Improve Health, Quality of Life, and Survival for Adolescents and Young Adults with Cancer, October 26th, 2022

Erin E. Hahn, PhD, MPH, Associate Professor, Kaiser Permanente Bernard J. Tyson School of Medicine- Understanding the Health Care Experiences of Adolescent and Young Adult Cancer Survivors, April 20, 2022

Karim Thomas Sadak, MD, MPH, MSE, Associate Professor, University of Minnesota Medical School- The Evolution of a Childhood Cancer Survivor Program: Data Driven Program Development, October 27, 2021

Sharon Bober, PhD, Assistant Professor, Department of Psychiatry, Harvard Medical School- AYA Cancer Survivors and Sexual Health: Challenges and Next Steps, April 7, 2021

BIMONTHLY "FRIENDLIES"

Marcie Haydon, PhD, Postdoctoral Fellow, University of California, Irvine- Sleep: A Modifiable Target to Improve Health in Young Cancer Survivors, Dec 7, 2022

Lana Clay-Monaghan, PhD, Patient Advocate, University of Southern California- Cancer Survivorship Clinics: A Gap Analysis, Dec 1, 2021

Tom Valente, PhD, Professor & Sarah Piombo, PhD, MPH, Keck School of Medicine of USC- Social Networks & Young Adult Cancer Survivorship, June 2, 2021

Jessica Sheth Bhutada, MD, MS, Assistant Professor of Clinical Pediatrics, Keck School of Medicine of USC- Poor-Prognosis Metastatic Cancers in Adolescents and Young Adults: Incidence and Survival Disparities, Feb 3, 2021

RESEARCH PROJECTS

SELECTED STUDIES AT THE SOUTHERN CALIFORNIA CENTER FOR YOUNG ADULT CANCER SURVIVORSHIP RESEARCH



Project Forward is a population-based cohort of over 1,000 young adult survivors of childhood cancer (diagnosed in Los Angeles County), that has strong Hispanic/Latino representation (54%) and novel psychosocial and cultural assessments. Our Project Forward efforts have resulted in 29 peer-reviewed publications to date (with 15 student first authorships) and provided a resource for 7 PhD dissertations.

PI: Joel Milam
Funder: NIH/NIMHD
(R01MD007801)



Project Milestones is a population-based cohort study of young adult cancer survivors in Los Angeles and Orange Counties that examines health related quality of life, cancer-related follow-up care, and achievement of milestones of adulthood. Currently, over 1,500 participants have been enrolled on this study.

PI: David Freyer & Joel Milam
Funder: NIH/NCI
(R01CA237230)



The Social Health Study is a longitudinal study which will recruit 200 young adult cancer patients from diverse backgrounds at USC hospitals. Over 12 months we will examine how their social health changes after a cancer diagnosis, and how such changes impacts young adult's activity behaviors, symptom burden, and quality of life.

PI: Kimberly Miller
Funder: NIH/NCI
(R37CA256867)



Asian Americans are the fastest growing and largest immigrant group in the United States. The Health & Community among Asian Americans study will survey 350 Asian American young adult childhood cancer survivors using data from the California Cancer Registry. We aim to identify modifiable factors related to psychological, cultural, and neighborhood-level determinants of cancer-focused healthcare in this at-risk population.

PI: Kimberly Miller & Joel Milam
Funder: NIH/NCI
(R01CA261888-01)

SELECTED CENTER PUBLICATIONS FROM 2022

1

Kim Y, Ritt-Olson A, Tobin J, Haydon M, Milam J. Beyond depression: correlates of well-being in young adult survivors of childhood cancers. *J Cancer Surviv*. 2022 Feb 21. doi: 10.1007/s11764-022-01186-z. Epub ahead of print. PMID: 35187609.

2

Milam J, Freyer DR, Miller KA, Tobin J, Wojcik KY, Ramirez CN, Ritt-Olson A, Thomas SM, Baezconde-Garbanati L, Cousineau M, Modjeski D, Gupta S, Hamilton AS. Project Forward: A Population-Based Cohort Among Young Adult Survivors of Childhood Cancers. *JNCI Cancer Spectr*. 2021 Jul 17;5(5):pkab068. doi: 10.1093/jncics/pkab068. PMID: 34585063; PMCID: PMC8462512.

3

Mobley EM, Thomas SM, Brailsford J, Ochoa CY, Miller K, Applebaum A, Milam J, Freyer DR. Clinical Trial Participation: A Qualitative Study of Adolescents and Younger Adults Recently Diagnosed with Cancer. *J Adolesc Young Adult Oncol*. 2022 Jul 27. doi: 10.1089/jayao.2022.0050. Epub ahead of print. PMID: 35900287.

4

Sheth Bhutada JK, Hwang AE, Liu L, Tsai KY, Deapen D, Freyer DR. Survival of Adolescents and Young Adults with Prevalent Poor-Prognosis Metastatic Cancers: A Population-Based Study of Contemporary Patterns and Their Implications. *Cancer Epidemiol Biomarkers Prev*. 2022 Apr 1;31(4):900-908. doi: 10.1158/1055-9965.EPI-21-0913. PMID: 35086824; PMCID: PMC8983591.

5

Stal J, Piombo SE, Kysh L, Kagramanov D, Freyer DR, Turner BJ, Hempel S, Miller KA. The integration of primary care and childhood cancer survivorship care: a scoping review. *J Cancer Surviv*. 2022 Dec 19. doi: 10.1007/s11764-022-01296-8. Epub ahead of print. PMID: 36534343.

TRAINEE SPOTLIGHT



JESSICA SHETH BHUTADA, MD, MS

Assistant Professor of Clinical Pediatrics, Keck School of Medicine of USC

Dr. Sheth Bhutada is currently an Assistant Professor of Pediatrics in the Cancer and Blood Disease Institute at Children's Hospital of Los Angeles. Her primary research interests are in identifying and addressing health disparities in adolescents and young adults (AYAs) with cancer. As a pediatric hematology-oncology fellow under the mentorship of Dr. David Freyer, she utilized SEER registry data to establish sociodemographic risk factors associated with metastatic disease presentation in AYAs. Drawing on her training as a Health Equity Scholar through the Cambridge Health Alliance Center for Health Equity Education and Advocacy, she was recently awarded a KL2 career-development grant to study risk factors for and racial/ethnic disparities within early onset gastric cancer in adolescents and young adults.



YOONJI KIM, BA, MA

PhD Candidate, Department of Epidemiology and Biostatistics, UCI

Yoonji Kim's research interests broadly lie in the epidemiology and the social determinants of childhood and young adult cancers. She is also interested in the structural barriers to wellbeing among childhood and young adult cancer survivors. Under the mentorship of Drs. Joel Milam and Anamara Ritt-Olson at UCI, her current research focuses on the long-term survivorship experience of childhood cancer survivors and addressing a gap in literature concerning risk and protective factors for substance use. She hopes to address cancer survivors' long-term medical and psychosocial needs across the survivorship trajectory and the impact of a cancer diagnosis on relationships, education, and employment among childhood, adolescent, and young adult cancer survivors.



VICTORIA E. RODRIGUEZ, MSW, MPH

PhD Candidate, Program of Public Health, UCI

Victoria Rodriguez's research interests encompass health inequities in cancer. She is interested in the structural, racialized, and gendered processes that contribute to women's health outcomes. Specifically, she is focused on Latina women's quality of life and social and health-related experiences after surviving gynecologic and breast cancers. Victoria was recently awarded the Ruth L. Kirschstein National Research Service Award Individual Predoctoral Fellowship to Promote Diversity in Health-Related Research (NIH/NCI 1F31CA 271700-01). Victoria also is engaged in developing and writing manuscripts and conference abstracts with Center co-directors. Most recently, Victoria had an abstract accepted to the Society of Behavioral Medicine with Drs. Milam and Miller as co-authors.



JULIA STAL, BA

PhD Candidate, Population and Public Health Sciences, USC

Julia Stal's research focuses on pediatric and adolescent and young adult (AYA) cancer survivorship, disparities, and quality cancer care. She is currently mentored by Drs. Kimberly Miller and David Freyer at USC and Dr. Joel Milam at UCI. This past year, she published several manuscripts on various cancer survivorship concerns including skin examinations among young adult childhood cancer survivors, primary care and childhood cancer survivorship care, and fertility discussions. Currently, she is working with the American College of Surgeons Commission on Cancer (ACS CoC) to develop a national study to characterize survivorship services for survivors of adult-onset cancer. Julia's dissertation uses population-based data from the Los Angeles Cancer Surveillance Program to explore fertility experiences such as fertility discussion, preservation, and reproductive concerns among AYA cancer survivors.

ADVOCACY PARTNERSHIPS

The Center works with patient advocates and advocacy groups as full partners in our research. For our study **Project CoRe (COloREctal Cancer and Quality of Life)**, we partnered with **The Colon Club**, a national advocacy organization that raises awareness about early onset colorectal cancer, to examine the symptom burden and health-related quality of life in this distinct patient population. We recruited 239 colorectal cancer survivors across the United States and surveyed them on multiple issues related to their cancer experience. We worked closely with **Phuong Gallagher, President of The Colon Club** and a stage IV rectal cancer survivor, on shaping the study's relevance to the needs and concerns of young survivors of colorectal cancer. To date this study has yielded multiple papers and abstracts, many led by Center trainees.

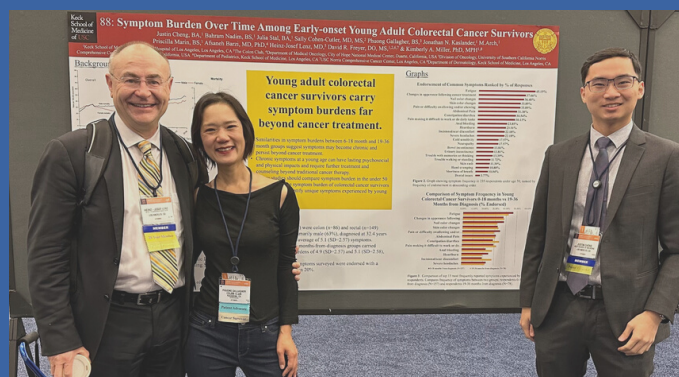
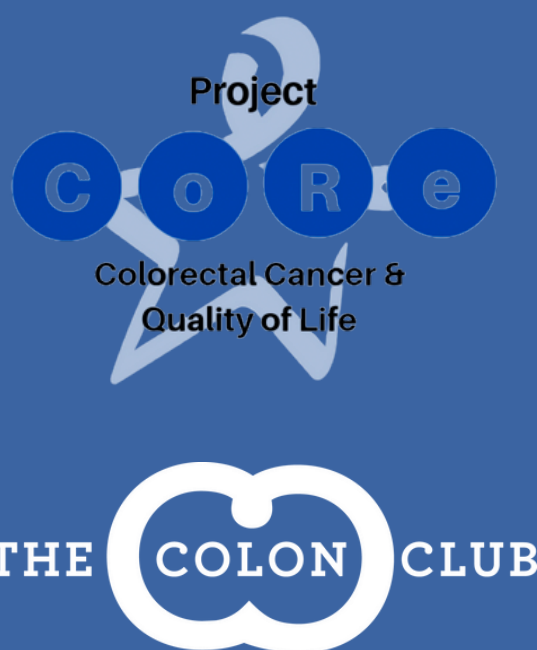
Selected Publications from Project CoRe

Stal J, Yi S, Cohen-Cutler S, Gallagher P, Barzi A, Freyer DR, Milam JE, Lenz HJ, Miller KA. Fertility preservation discussions between young adult rectal cancer survivors and their providers: Sex-specific prevalence and correlates. *The Oncologist*. 27(7):579-586, 2022. PMID: 35427410. PMCID: PMC9255970.

Kagramanov D, Miller KA, Gallagher P, Freyer DR, Milam JE, Lenz HJ, Barzi A. Patient Care Satisfaction and Emergency Room Utilization among Young Adult Colorectal Cancer Survivors during the SARS-CoV-2 Pandemic: Lessons Learned. *Journal of Clinical Medicine*. 2023. 12(2):469. PMID: 36675396;

Yi S, Rodriguez K, Stal J, Cohen-Cutler S, Gallagher P, Barzi A, Freyer DR, Milam JE, Lenz HJ, & Miller KA. Prevalence of information needs among emerging and young adult colorectal cancer survivors. Abstract accepted to the 2022 American Society of Clinical Oncology (ASCO) Gastrointestinal Cancers Symposium (online), January 20-22, 2022.

Cheng J, Nadim B, Stal J, Cohen-Cutler S, Gallagher P, Kaslander JN, Marin P, Barzi A, Lenz HJ, Freyer DR, Miller KA. Symptom burden over time among early-onset young adult colorectal cancer survivors. Poster presentation at the American Society of Clinical Oncology (ASCO) Gastrointestinal Cancers Symposium, San Francisco, CA. January 19-21, 2023.



Heinz-Josef Lenz, MD (Keck School of Medicine of USC); Phuong Gallagher (President, The Colon Club) and Justin Cheng (M2, Keck School of Medicine of USC) at ASCO Gastrointestinal Cancers Symposium 2022 in San Francisco, CA.

MEET OUR TEAM

TRAINEES



CARLOS ORELLANA GARCIA, USC
Predoctoral Trainee



MARCIE HAYDON, PHD, UCI
Postdoctoral Fellow



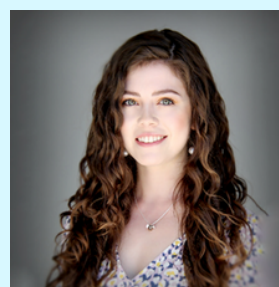
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YOONJI KIM, UCI
Doctoral Candidate



KAREN LLAVE, UCI
Doctoral Candidate



SARAH PIOMBO, USC
Doctoral Candidate



VICTORIA RODRIGUEZ, UCI
Doctoral Candidate



JULIA STAL, USC
Doctoral Candidate



CHARLEEN THEROUX, USC
Predoctoral Trainee

STAFF

Denise Modjeski (Project Manager), Jonathan Kaslander (Project Administrator),
Micaela Hewus (Research Coordinator), Maureen Cairns (Project Specialist),
Priscilla Marin (Project Specialist), Melanie Pederson (Project Specialist),
Serena Yi (Research Assistant)

WE THANK YOU FOR YOUR ONGOING SUPPORT!

GET IN TOUCH WITH US TODAY

Join our mailing list: yasurvs@usc.edu

Visit our website: youngadultsurvivors.org

Follow us on Twitter: [@YASurvivors](https://twitter.com/YASurvivors)



Acknowledgements: This report was designed by Serena Yi, USC '22. We would also like to thank Jon Kaslander for his contributions.