



## 2022 International Cancer Education Conference Late-Breaking Abstracts



International Cancer Education Conference

Advancing Cancer Health Equity through  
Community Engagement and Patient Navigation

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# 2022 International Cancer Education Conference Late-Breaking Abstracts

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## 2B-5: The West Virginia Cancer Survivorship Needs Assessment Project

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**Abstract:** Background/Purpose: This study characterized the unmet needs of cancer survivors in West Virginia with a goal of identifying opportunities to develop community-based resources and services. Methods: The Supportive Care Needs Survey Short Form 34 (SCNS) was distributed on-line and in hard copy. Snowball methodology was used to distribute the electronic survey through social media and partner networks. The West Virginia Tumor Registrar direct mailed 2,000 hard copy surveys to patients with a cancer diagnosis from 2015 to 2021. The SCNS uses a 5-point Likert scale to assess unmet needs in five subscales: psychological, educational, physical, supportive care, and sexuality. 28 individuals agreed to be contacted for 1:1 Qualitative interviews, 11 consented, and participated. Interview transcripts are currently being analyzed for content themes. Results: 415 unique surveys were received and 362 were analyzed after removal of duplicates and incomplete responses. The largest response by cancer types were among Breast (24.4%), Lung (13.9%), Hematologic (12.8%), Prostate (9.4%), and Colorectal (8.1%). Most respondents were white (96%) and female (65%). Moderate to high needs (3-5 on the Likert scale) were most common in addressing; fatigue (57.2%), fear of cancer spreading (45.5%), concerns about those close to you (45.4%), work around the home (42.5%), and uncertainty about the future (41.4%). Preliminary analysis of subscales reveals that Breast and Lung cancer survivors exhibited the greatest needs in the psychological domain. Hematologic and Colorectal cancer survivors exhibited the greatest needs in the physical function domain. Hematologic ranked highest of all cancer types in the supportive needs and health information needs domain. Prostate cancer survivors reported the lowest needs among all types of cancer across the five domains. Recommendations: This study will inform community-based cancer-specific resource development, facilitate educational initiatives, and catalyze future research to assess health information messaging to cancer survivors. Conclusion: Across all types of cancer, approximately 1/3 of patients within five years of their cancer diagnosis reported moderate to high levels of need across multiple functional domains. Most commonly needs were expressed in physical, psychological, and health information needs. Resource development for supportive care should focus on these areas to improve long term cancer survivorship. **Objectives:** 1. Recognize the utility of conducting a needs assessment for regional and local development of educational resources and materials for cancer survivors. 2. Describe the importance of understanding local cancer survivor needs in rural communities. **References:** Boyes A, Lecathelinais C. Brief assessment of adult cancer patients' perceived needs: The 34-item Supportive Care Needs Survey (SCNS-SF34). *J Eval Clin Practice*. 2009;15(4):602-606. Nekhlyudov, L., Mollica, M., et al. (2019). Developing a quality of cancer survivorship care framework. *JNCI*. 111(11)1120-1130. Palmer, N, Avis, N. et al. (2020). Rural cancer survivor's health information needs post-treatment. *Pt educ & counsel*. 103(8)1606-1614.

## 2C-5: To Be Screened or Not to Be Screened: A Participatory Exploration of Community Priorities Around Cervical Cancer Screening Decision-Making in Ethiopia

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**Abstract:** Background/Purpose: Despite an expanding national cervical cancer screening program in Ethiopia, uptake remains low (Ayenew, 2020). Recent efforts to increase screening have been successful in some communities, while more than a third of women either refused in-home screening (18%) or provided an inadequate self-collected sample for testing (18%) in another setting, raising cultural responsiveness and acceptability concerns (Jede, 2020). This mixed method study explores factors influencing individuals' decision to be screened for cervical cancer to inform cancer education and service delivery, tailored to participant described decision-making priorities. Methods: Fifty female participants (age 18+ years) with varied screening histories, including women living with and without HIV (n=25 each), were purposively recruited in Adama, Ethiopia in May 2022. Focus group discussions (n=4) elicited perceptions about cervical cancer, screening, and care-seeking. A participatory free-listing and item ranking activity was used to identify top factors that influence one's screening decision. Salience (S) scores were calculated to rank factors from most (S=1) to least important (S=0). Direct participant quotes illustrate each factor's role in decision-making. Results/Findings: Groups brainstormed an average 16.25 factors (range 14-19) influencing the screening decision. Nine top factors emerged as highly influential (S=0.275 to 0.825): socioeconomic status; awareness of cervical cancer and screening; fear of procedure; indifference; distance to screening location; age; addiction; service availability; and fear of results/cancer. Qualitative data provide rich, contextual descriptions of why factors are perceived as important and how they contribute to the final screening decision. Recommendations/New Findings/Discussion and Conclusion: While low community awareness of cancer and screening barriers have been previously described, the hierarchy of ranked factors produced in this study may guide future interventions to align with community-driven screening priorities. Reported feelings of "carelessness" and fear could be addressed through motivational interviewing and a focus on self-efficacy during education, especially for certain populations such as older women who were perceived to be more hesitant. Other recommendations include tailoring education and services to lifestyle, such as highlighting no-cost screening for low socioeconomic populations and ensuring that screening services are offered at convenient locations and days/times to accommodate family care responsibilities and daily patterns of women in Ethiopia. **Objectives:** The participant will be able to identify and describe at least three top factors that influence an individual's decision to be screened for cervical cancer in an urban, low-income country setting. The participant will explore specific community engaged research methods know as free listing and participant ranking. **References:** Ayenew, et al. (2020). Uptake of cervical cancer screening service and associated factors among age-eligible women in Ethiopia: systematic review and meta-analysis. *Infectious Agents and Cancer*, 15(1), 1-17. Jede, et al. (2020). Home-based HPV self-sampling assisted by a cloud-based electronic data system: Lessons learnt from a pilot community cervical cancer screening campaign in rural Ethiopia. *Papillomavirus Research*, 9, 100198.

## 4A-2: Reducing Salivary Gland Cancer Mortality in the Uninsured

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**Abstract:** Salivary gland cancer (SGC) is a rare malignancy, where cancer cells present themselves in the tissues of the salivary glands. SGC accounts for approximately 6% of head and

neck cancers and comprises at least 22 histopathological subtypes, making this an extremely heterogeneous disease. Late recurrence and distant metastasis are common and the severity varies by subtype. Currently, the most effective treatment options include surgical resection and radiotherapy, making detection at the earliest point in the disease progression important. This narrative review searched for evidence-based interventions that produced early salivary gland cancer detection with the goal of identifying interventions that could be replicated. Eligible articles were full-text accessible, written in English or Spanish, published between 2017 and 2022, and found using databases such as PubMed, CINAHL, and Google Scholar. The search was conducted using keywords such as: salivary glands, detection, guidelines, mortality, treatment, examinations, dentist, dental, and hygienist. Citation lists of relevant articles were searched for additional eligible articles. The public's lack of knowledge about salivary cancer means they are unaware of lifestyle-related risk factors, early-warning signs of salivary cancer, and the importance of seeking prompt medical evaluation of possible early warning signs of salivary cancer. The lack of insurance and discretionary money contribute to late stage diagnoses, inability to secure second opinions, and delays in accessing treatment contribute to the higher mortality rate of the disease. As a result, patients are more likely to present with metastatic disease at initial diagnosis, which places them at a 20% increased risk of death due to salivary gland cancer. While Medicaid is accessible for people with low incomes, many will lack a comparable dental insurance plan. Without dental insurance to cover the cost of regular dental exams where most early stage salivary gland cancers are discovered and referred for treatment, the intraoral and extraoral exams provided by physicians are of even greater importance in the detection of salivary cancers. The expansion of health care can promote more consistent and comprehensive salivary gland cancer surveillance, earlier detection, and reduction in the cost of care through early diagnosis. **Objectives:** The participant shall be able to identify the early-warning signs of salivary gland cancer. The participant will learn about the importance of comprehensive oral examinations. The participant will learn about the impact of inaccessible salivary gland cancer surveillance. **References:** A Saraswathula: Insurance Status and Survival of Patients with Salivary Gland Cancer. *Otolaryngology–Head and Neck Surgery* 2018. AG Del Signore: The Rising Incidence of Major Salivary Gland Cancer in the USA. *Ear, Nose & Throat Journal* 2017. SK Mueller: Targeted Therapy, Chemotherapy, Immunotherapy and Novel Treatment Options for Different Subtypes of Salivary Gland Cancer 2022.

#### 4A-3: Inclusion of the SWANA Community in Research Studies

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**Abstract:** Background SWANA is a geographical term for people of Southwest Asian and North African descent who live in the USA (U.S.). A century ago, SWANAs campaigned to modify their designation from "Asiatic/unclassified" to "White" in order to become U.S. citizens. Today, SWANA refers to people of Middle Eastern descent. This designation may no longer be beneficial. In research studies, SWANAs are classified as racially and ethnically non-Hispanic White, an inclusion that can mask within-group health disparities linked to sub-groups. **Methods** This narrative literature review explores the use of SWANA data in scientific research. Articles were identified using: PubMed, JSTOR, Google Scholar, Nexis Uni, and CINAHL databases. The search terms used included: SWANA, Middle Eastern, Arab American,

Turk\*, North African, Central Asia, cancer, clinical trials, and disparities. Eligible articles were published in English between 2014 and 2022 and are accessible in full text. Articles were found in citations of eligible articles. Results The findings demonstrate that, compared to the Non-Hispanic U.S. White (NHUSW) women, SWANA women have a higher thyroid. SWANA men have a higher bladder cancer risk than Non-Hispanic U.S. White men. Overall SWANAs, when compared to NHUSWs, have lower cervical and breast cancer screening rates; and a higher incidence of anemia, hyperlipidemia, diabetes, coronary heart disease, and asthma. Individuals of SWANA descent also have a greater risk of serious psychological distress and deficiencies in iron, folic acid, and vitamins B12, C, and D. SWANA immigrants have less access to health care, lower health literacy, and higher food insecurity. SWANAs have witnessed an increase in stereotyping, racial profiling, housing and employment discrimination, and other sociopolitical stressors since September 11, 2001. No SWANA-specific clinical trials were found; studies were limited by small sample sizes. Recommendations SWANA ancestry needs to be included in the Census to enable researchers to identify health disparities and encourage SWANA's inclusion in research studies. Researchers need information about the importance of including SWANA in research studies. Discussion The few existing studies on SWANA indicate that the community experiences disparities in health and social justice. Culture, diet, environment, historical events, and socioeconomic grievances may influence these disparities. These findings reinforce separating SWANA from the larger non-Hispanic Whites to address disparities and generalize findings. **Objectives:** The participant will be able to list two health disparities in the SWANA community. The participant shall be able to list two social challenges experienced by the SWANA community. The participant shall be able to identify the barrier created by the lack of accurate representation in research. **References:** Awad GH, Abuelezam NN, Ajrouch KJ, Stiffler MJ. Lack of Arab or Middle Eastern and North African Health Data Undermines Assessment of Health Disparities. *Am J Public Health.* 2022;112(2):209-212. doi:10.2105/AJPH.2021.306590. Read JG, Lynch SM, West JS. Disaggregating Heterogeneity among Non-Hispanic Whites: Evidence and Implications for U.S. Racial/Ethnic Health Disparities. *Popul Res Policy Rev.* 2021;40(1):9-31. doi:10.1007/s11113-020-09632-5

#### 4A-4: Impact of Access to Technology and Online Training in Shared-Decision Making About Prostate Cancer Screening Among Black Men

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**Abstract:** Background: Prostate cancer (PrCa) is the third most prevalent cancer in America. African American men (AAM) are at higher risk for late diagnosis of PrCa and experiencing poor outcomes compared to other racial/ethnic groups. Current guidelines in PSA (Prostate-specific antigen) screening for the early detection of PrCa recommend that clinicians and patients engage in a shared-decision making (SDM) process to discuss PrCa risks, benefits/harms of PSA –tests, and screening preferences. Purpose: Assess the impact of an online educational intervention in patients' decisions about whether to be screened for the early detection of PrCa. Description: African American men, 40-69 years old, complete a baseline assessment regarding their knowledge about PrCa risks, screenings, diagnosis, and treatments. Participants are randomized to the control arm (usual care) or the intervention arm (e-learning program), and complete additional surveys during the patient-medical encounter and at 3-months follow-up. The training was revised with the support of a community-based

Patient Advisory Board of AAM, including prostate cancer survivors. In response to the COVID-19 pandemic, the protocol was adapted to conduct all the procedures in-person and/or online, including electronic consent, according to participants' needs and preferences. Evaluation: As of Jul 31/2022, a total of 123 AAM have completed the baseline and 53 the intervention (43%). At baseline, 53% of participants reported having had a PSA-screening, and the majority (94%) said they would get a PSA-screening if offered. These results were similar for intervention participants after completing the training (53% and 90%, respectively). Participants used computers (81%) and/or mobile devices (28%) to complete study procedures, including the online training. A high percentage of participants did not have an email address (14%) and/or required in-person meetings to complete study procedures (39%). Overall, the literacy level of the participants was measured to be moderate ( $M=13.1$ , range 4-20). Although the intervention group had higher post-test scores in PrCa knowledge than their counterparts, these scores were also categorized as in the moderate level: knowledge of prostate cancer risks ( $M=3.39$ , range 0-7); definition of PSA/biopsy ( $M=2.8$ , range 0-4); and prostate cancer symptoms, screening and diagnosis ( $M=5.2$ , range 0-9). In general, participants completing the intervention rated each one of the five modules ( $M=3.7$ , range 1-4) and the SDM-aid ( $M=18.1$ , range 5-20) as "very useful." Practice Impact: Although there is enough evidence of the positive impact of implementing patient decision-aids, in general, there is still a lack of evidence about the role that patient's access to technology and SDM may play in the application of these decision-aids in the clinical settings. Future research endeavors should prioritize accessibility when seeking to inform these topics better. With the addition of evidence, guidelines recommending SDM during clinical encounters will be able to ensure that recommendations include informed and equitable strategies to provide patients with the cancer education opportunities necessary to participate authentically in shared decision-making processes. Conclusion: Preliminary results show that the educational initiative is fitting participants' needs and has increased knowledge about PrCa in a population with a moderate literacy level. Developing flexible protocols and educational initiatives that accommodate the real needs of individuals is among the best practices to address barriers not only in cancer knowledge and screening but also in access to and use of technology. **Objectives:** The participant will be able to recognize the importance of literacy level and access to technology when developing educational interventions targeted to minority populations. **References:** 1. Grossman DC, et al. Screening for prostate cancer: US Preventive Services Task Force recommendation statement. *JAMA*. 2018;319(18):1901-1913. 2. National Quality Forum. National Quality Partners Playbook: Shared Decision Making in Healthcare. National Quality Forum; 2018. 3. Cancer Facts & Figures 2022. American Cancer Society. 2022. 4. Riiikonen JM, et al. Decision Aids for Prostate Cancer Screening Choice: A Systematic Review and Meta-analysis. *JAMA*. 2019;1:179(8):1072-1082.

#### 4B-4: Impact of Therapeutics on Cardiovascular Health and Breast Cancer Outcome

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**Abstract:** Background/Purpose: Currently offered therapeutics to treat breast cancer have significantly declined the mortality rates over the past years and have increased life expectancy. However, these improvements in mortality rate and life expectancy come with the elevated risk for cardiovascular disease (CVD) due to the cardiotoxic effects of treatments. Breast cancer and cardiovascular disease have various overlapping risk factors, and treatment offered for breast cancer further impacts cardiovascular health (e.g., accelerated CVD, ventricular dysfunction). Patients with pre-existing CVD may alter their cancer

treatment decisions, avoiding exacerbating the pre-existing heart condition. Furthermore, breast cancer treatment associated with cardiac dysfunctions often excludes patients from receiving aggressive treatment to treat recurrent disease. Hence, this work aims to ascertain the treatment-associated factors contributing to CVD and possible cardio protective options to reduce associated CVD. Methods: We have used a PubMed search to ascertain the factors contributing to breast cancer treatment associated with CVD. Results/Findings: Chemotherapy, radiation therapy, hormone ablation therapy, and immunotherapy are offered to treat breast cancer as a single agent or in combination as an adjuvant or neoadjuvant to treat breast cancer. However, these agents often negatively impact the cardiovascular and immune systems. Therapeutic regimens impact the immune system directly or indirectly by affecting heart function. Immune suppression often promotes disease faster and contributes to recurrence. Studies have shown that after receiving treatment, breast cancer survivors who developed CVD or events (i.e., heart attack, stroke, heart failure, coronary artery disease, or arrhythmia) had a 59% higher risk of breast cancer recurrence and 60% higher risk of dying from breast cancer. Studies on mice where heart attack was induced show accelerated tumor growth and lung metastasis compared to sham further suggest the impact of cardiac health on breast cancer progression and outcome Discussion and Conclusion: Cardiovascular health is key to disease progression, therapeutic outcome, and overall survival of breast cancer patients. Hence, cardioprotective strategies are needed while offering conventional therapies to treat breast cancer. Additionally, preexisting conditions such as diabetes, blood pressure, cholesterol, and lifestyle should be considered while developing treatment. **Objectives:** The learner will be able to discuss the impact of breast cancer therapeutics on cardiovascular health and association of cardiac health on breast cancer risk. The learner will be able to explain the need to implement cardio protective measures during breast cancer therapy. **References:** Mehta, L. S., Watson, K. E., Barac, A., Beckie, T. M., Bittner, V., Cruz-Flores, S., Dent, S., Kondapalli, L., Ky, B., Okwuosa, T., Piña, I. L., & Volgman, A. S. (2018, Feb 20). Cardiovascular Disease and Breast Cancer: Where These Entities Intersect: A Scientific Statement From the American Heart Association. *Circulation*, 137(8), e30-e66. <https://doi.org/10.1161/cir.0000000000000556>. Ramin, C., Schaeffer, M. L., Zheng, Z., Connor, A. E., Hoffman-Bolton, J., Lau, B., & Visvanathan, K. (2021.)

#### 4B-5: Cancer Education with Youth in the Northwest Arctic Increases Knowledge and Inspires Intent to Share Information and Reduce Cancer Risk

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**Abstract:** Background: Cancer is the leading cause of death among Alaska Native people, who are disproportionately burdened by cancer incidence and mortality, as well as cancer-related risk factors. The leading causes of cancer death among Alaska Native people are lung, colorectal, and breast cancer, which all have modifiable risk factors. This presents an opportunity for health promotion efforts to decrease cancer incidence and mortality and reduce cancer disparities. Description: In response to community concerns, sharing circles were held in the Northwest Arctic region of Alaska in November 2019. Sharing circle participants overwhelmingly expressed a need for cancer education for young people. Guided by a Community Advisory Board, eleven cancer education lesson plans were developed and have been adopted as part of the curriculum of the Northwest Arctic Borough School District. The eleven lesson plans are: 1) What is cancer? 2) Cancer diagnosis and treatment 3) Cancer and the environment 4) Physical activity 5) Healthy eating 6) Choosing tobacco free 7) Alcohol and cancer risk 8) Sun health 9) HPV 10) Screening exams 11) Northwest Arctic cancer

data Information on each topic, as well as lesson plans, audiovisuals, classroom activities, and key cancer prevention messages in English and Inupiaq, are available online at: <https://sites.google.com/view/akcancer>

**Evaluation:** Each learner was invited to complete a pre/post lesson survey to assess changes in knowledge, attitudes, behaviors and beliefs around cancer. 113 pre/post lesson surveys have been completed. Respondents' mean cancer knowledge scores were significantly higher after the Cancer Basics lesson. On 98% of post-lesson surveys, respondents said they planned to share cancer education messages with others in their communities, including on staying tobacco free and increasing physical activity. On 93% of the post-lesson surveys, respondents indicated they planned to make changes to reduce their own personal cancer risk, including by staying tobacco free, eating healthier, and increasing physical activity.

**Conclusion:** The evaluation outcomes are promising, and affirm the relevance and need for the project. Increasing the schools where the cancer education lessons are taught in the region, or adapting the lesson plans to other settings, could expand the reach of the project.

**Objectives:** The participant shall be able to list evaluation outcomes from the piloted cancer education in the Northwest Arctic. The participant shall be able to identify strategies used to deliver cancer education to youth in the Northwest Arctic.

**References:** Nash SH, Zimpelman GL, Miller KN, Clark JH, Britton CL. The Alaska Native Tumour Registry: fifty years of cancer surveillance data for Alaska Native people. *Int J Circumpolar Health*. 2022 Dec;81(1):2013403. doi: 10.1080/22423982.2021.2013403. PMID: 34918619. Nash SH, Day G, Zimpelman G, Hiratsuka VY, Koller KR. Cancer incidence and associations with known risk and protective factors: the Alaska EARTH study. *Cancer Causes Control*. 2019 Oct;30(10):1067-1074. doi: 10.1007/s10552-019-01216-9.

#### 4C-4: Adapting a Medical School Cancer Research Education Program to the Virtual Environment: A Qualitative Analysis

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**Abstract:** Background/Purpose: As the number of cancer diagnoses in the US grows, there is increasing need for physician-investigators with oncology-related research training who will develop novel approaches to screening, diagnosis, therapy, and survivorship. A US medical school developed the National Cancer Institute-funded Scholars in Oncology-Associated Research (SOAR) research education program. Due to COVID-19, SOAR transitioned from in-person in 2019 to virtual in 2020 and hybrid in 2021. This qualitative study examines advantages and disadvantages of each instructional mode. Methods: SOAR includes a seminar series, an 11-week research experience, research group meetings, and tumor board and shadowing experiences for an annual cohort of approximately 12 students. In 2019, all activities were in-person. In 2020, all activities were virtual without shadowing. In 2021, seminars and tumor boards were virtual, shadowing was in-person, and other activities were hybrid. Structured interviews were conducted from these cohorts followed by thematic analysis with ATLAS.ti software. Results/Findings: Positive and negative themes were identified by interviewing 6, 8, and 7 students from the in-person, virtual, and hybrid cohorts, respectively. A positive theme across all cohorts was that SOAR gave participants opportunities to explore careers related to cancer research and clinical cancer care while learning about oncology's interdisciplinary nature. Other positive themes included benefits of community and informal connections for the in-person cohort, and advantages in schedule flexibility and research productivity for the hybrid cohort. The only negative theme emerged from the virtual cohort, who remarked on difficulties with engaging

virtually and skipping in-person clinical exposure. Discussion and Conclusion: SOAR was a formative experience regardless of instructional format, as it improved participants' understandings of clinical and research careers within oncology. However, drawbacks to virtual programming included community loss, inability to focus, and lack of professional interactions and clinical experiences. Some of these were remedied by hybrid programming, which permitted shadowing and professional interactions while retaining schedule flexibility and research productivity. In conclusion, programs like SOAR can remain effective if adapted in a hybrid format that preserves critical in-person experiences, allowing for an educational experience that will benefit oncology patients in the future and nurture the next generation of cancer physician-investigators.

**Objectives:** The participant shall be able to evaluate components of cancer education and research programs to determine which mode (in-person vs. virtual vs. hybrid) provide the best educational experience.

**References:** 1. Ho PA, Girgis C, Rustad JK, et al (2021) Advancing Medical Education Through Innovations in Teaching During the COVID-19 Pandemic. *Prim Care Companion CNS Disord* 23:20nr02847. 2. McKillip RP, Hahn OM, Bartkowiak B, et al (2019) Implementation of a novel medical school multidisciplinary and interprofessional oncology curriculum: a mixed methods study. *J Cancer Educ Off J Am Assoc Cancer Educ* 34:50–55.

#### 4C-5: Creating a Content Specialist Career Ladder to Retain Experienced Staff

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**Abstract:** Background/Purpose The development and maintenance of quality cancer patient education materials requires staff that are skilled at translating medical topics for the general public and trained in plain language communication. These content developers typically collaborate and support content experts in a variety of professions and work with them to turn their knowledge into accessible education materials. In our setting, content developers have come from different cancer care provider roles such as nursing and social work. They have held these positions for 5+ years and have grown their skills with the training and support of our team.

■ **Description** The current healthcare employment landscape provides many opportunities for staff to grow their careers in new positions. This leads to staff turnover which costs valuable time and resources in onboarding and training new staff. We wanted to provide a way for our education content developers to grow within their current positions, allowing us to retain highly qualified staff.

■ **Evaluation** We worked to create a career ladder within the content specialist position that would allow for growth, expanded responsibilities, and commensurate salary increases. To do this we worked with human resources to design three levels of practice for content specialists, focusing on increasing skills and accountabilities across the career trajectory. Skills that we highlighted to grow across the levels include expertise in health literacy, plain language, numeracy, and cultural inclusivity; serving as an expert resource on our content management system; mentorship of more junior staff and students; providing training and consultation for clients using our electronic applications; and supporting leadership in business proposals and product demonstrations.

■ **Impact/Application/Conclusion** The implementation of a career ladder has been well received by our content specialists. This provides an opportunity to grow with us and not feel the need to leave our organization to further their career. Retaining experienced staff saves resources needed to train new staff but also makes our team more productive and responsive to organizational needs. In addition, experienced staff are viewed as leaders and valuable resources for our parent organization.

**Objectives:** The participant shall be able to identify two skills that patient education staff can grow during their careers. The participant shall

be able to identify two ways a career ladder can improve the productivity of a patient education team. **References:** Moore, A., Meucci, J., & McGrath, J. (2019). Attributes of a successful clinical ladder program for nurses: An integrative review. *Worldviews on Evidence-Based Nursing*, 16(4), 263–270. Meucci, J., Moore, A., & McGrath, J. M. (2019). Testing Evidence-Based Strategies for Clinical Ladder Program Refinement. *The Journal of nursing administration*, 49(11), 561–568. <https://doi.org/10.1097/NNA.0000000000000812>.

### **P11-A: Urban Mobile Mammography: Strategies to Increase Follow-up Rates Among Racial/Ethnic Diverse Women with Abnormal Findings: Preliminary Results**

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**Abstract:** Purpose: While urban mobile mammography improves access to screening mammography, follow-up for abnormal screening mammograms remains challenging. Those mammograms done at Federally Qualified Health Centers (FQHCs) in New York City (NYC) form the cohort of the study which analyzed barriers to completing the follow-up in an attempt to develop strategies to increase call-back compliance. Methods: Data were collected from the clinical navigation database. 218 women (35.32% Black/African American, 10.55% White, 40.37% Hispanic, and 13.76% Other) were screened on a mobile mammography van at five FQHCs in NYC from 2018 to 2022 and were read as BI-RADS 0 – need additional evaluation. Data points included: 1. Diagnostic evaluation within 60 days 2. Diagnostic evaluation greater than 60 days 3. Patient-provider communication delay by more than 7 days 4. Insurance status, and 5. Fear of COVID-19. Results: The 218 women were divided into Pre-intervention, 2018 – 2020 (N=107), and post-intervention, 2021 – 2022 (N=111). Four strategies to improve adherence to screening callbacks were utilized: 1. Address social determinants ( i.e., transportation, diagnostic locations, reminders, medical bills, mistrust, comorbidities, time-off from work, and mode of reminders), 2. Improve coordination between the mobile mammography program and the facilities (monthly meetings, pre-registration, reminders, referrals, priors, marketing, and parking), 3. Improve timely communication between patients and physicians (education, fear dissipation, alert notice, and interpretation of diagnostic reports), 4. Utilize low or free out-of-pocket-cost services (Cancer Services Program, Access-A-Ride, Emergency Medicaid, and primary care establishment). To our disappointment and surprise, our interventions did not produce statistically significant results, which could partly be due to the inadequate interventions and not large enough sample size. Conclusion: While we are not abandoning this enhanced navigation, further efforts will focus on developing a short video on the importance of follow-up to be played on the van while patients are waiting and making follow-up plans at the time of screening, permission to communicate with the patients using email addresses and text messages, changing the color of the envelopes we send abnormal results in so they stand out from normal mail for those whom we cannot reach by phone or who have missed appointments, setting up electronic access to the patient portal, and texting links to educational resources. **Objectives:** Strategies to increase call-back rates after abnormal mammogram results. Work closely with the primary care physicians Strategies to enhance navigation protocols. **References:** Reece JC, Neal EFG, Nguyen P, McIntosh JG, Emery JD. Delayed or failure to follow-up abnormal breast cancer screening mammograms in primary care: a systematic review. *BMC Cancer*. Apr

7 2021;21(1):373. doi:10.1186/s12885-021-08100-3. Kenny JD, Karliner LS, Kerlikowske K, Kaplan CP, Fernandez-Lamothe A, Burke NJ. Organization Communication Factors and Abnormal Mammogram Follow-up: a Qualitative Study Among Ethnically Diverse Women Across Three Healthcare Systems. *J Gen Intern Med*. Oct 2020;35(10).

### **Late-Breaking Poster Abstracts**

### **P30-B-S: Raising Public Awareness on How Worms Contribute to Bladder Cancer**

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**Abstract:** Squamous cell carcinoma (SCC) is the most common type of bladder cancer in Sub-Saharan Africa (SSA), while transitional cell carcinoma is the most common type of bladder cancer worldwide. The higher rate of SCC is suspected to be caused by a chronic inflammation-causing blood fluke, *Schistosoma haematobium*. A narrative literature review was conducted using PubMed, Google Scholar, and several parasitology journals, including the *International Journal of Parasitology and Trends in Parasitology*. The review focused on schistosomiasis-associated bladder cancer in SSA using keywords such as: schistosom\*, cancer, bilharzia, urogenital, bladder, squamous cell carcinoma, poverty, disparity, prevention, water quality, culture, living conditions, and Sub-Saharan Africa. Full-text English language articles were selected if they were peer-reviewed, published between 2012–2022, and focused on bladder cancer triggered by *S. haematobium* in SSA. Other articles were identified using the references of relevant articles. A few studies attempted to quantify how many SCC cases resulted from schistosomiasis but were severely limited by the lack of data. For every 100,000 infections, an estimated 3–5 patients develop bladder cancer. However, there are currently 230 million global cases, 90% of which affect SSA, and 700 million people at risk. Fifteen of the 33 articles concluded that *S. haematobium* disproportionately affects impoverished communities. Among the socioeconomic factors contributing to this disparity are: the lack of potable water for drinking/bathing, limited health care, and poor sanitation. The link between SCC and *S. haematobium* is unchallenged, but the carcinogenesis of SCC, vaccine development, drug resistance (demonstrated experimentally, but not in nature due to scarce ecological studies), and the role of climate change are not well understood. Mass drug administration efforts with a single dose of oral praziquantel to adults and children continue as a preventive and/or treatment strategy. However, the path to eradication in many endemic countries remains distant. Cases are expected to increase as climate change progresses and may spread to European countries through immigration and species hybridization. There is an urgent need for epidemiological and ecological studies, updates in diagnostic tools and environmental detection methods, improved sanitation, mollusk control, cancer screenings, and educational programs for impoverished people in endemic regions. **Objectives:** The audience will be able to name a parasitic species linked to cancer. The audience will be able to list solutions that could potentially lessen the burden of schistosomiasis in Sub-Saharan Africa. The audience will be able to describe two reasons why schistosomiasis is an important health concern. **References:** Aula, O. P., McManus, D. P., Jones, M. K., & Gordon, C. A. (2021). Schistosomiasis with a Focus on Africa. *Tropical. Medicine and Infectious Disease*, 6(3), 109–. <https://doi.org/10.3390/tropicalmed6030109>. Jalloh, M., Cassell, A., Diallo, T., Gaye, O., Ndoye, M., Mbodji, M. M., ... Gueye, S. M. (2020). Is Schistosomiasis a Risk Factor for Bladder Cancer? Evidence-Based Facts. *Journal of Tropical Medicine*, 2020, 1–6. <https://doi.org/10.1155/2020/8270810>.

### P31-A-S: Programs to Educate the Public About Reducing Microplastic Levels in Community Water Sources

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**ABSTRACT:** Mexican children living in proximity to highly polluted rivers have higher rates of cancer than children living elsewhere in Mexico. This review explores the field of microplastics, levels of microplastics in rivers, and what is known about the correlation between exposure to high levels of microplastics and cancer. A search of the scientific literature was undertaken related to microplastics and cancer in children. Articles published in English since 2010 were eligible, provided that a complete copy of the articles could be accessed for review. The following databases were searched: PubMed/Medline, PsycINFO, and CINAHL. The following terms were used to conduct this search: cancer, risk, microplastic\*, children, pediatric\*, Mexico, rivers, waterways, pollut\*, clean water, education, prevention, solar nanobubbles, and restoration. Reference lists of all identified articles were reviewed to identify additional related published studies. Abstracts of all identified articles were reviewed for articles of direct relevance. Of the fifty-two articles identified, nine were of direct relevance. The nine identified examined microplastics and cancer risk in children in Mexico. Most studies used systematic reviews. The groups studied included both adults and children who lived near or far from polluted bodies of water. Overall, studies found that children who lived closer to bodies of polluted water were at higher risk of exposure to microplastics, which increased their cancer risk. Microplastics appear to have a positive correlation with inducing cancer, with children who live near and consume contaminated water most at risk. Sustainable alternatives to plastic and innovative solutions to cleaning up polluted rivers may help lower the number of microplastics in our environments and ensure healthier standards for the next generation. **Objectives:** Attendees will be able to identify different microplastics and their sources. Attendees will learn about ways to reduce waste inside and outside of their homes. Attendees will learn about environmental pollution and how one source of pollution can have a global effect. **References:** Mora, Abraham, et al. "A Review of the Current Environmental Status and Human Health Implications of One of the Most Polluted Rivers of Mexico: The Atoyac River, Puebla." *Science of The Total Environment*, 2021, <https://doi.org/10.1016/j.scitotenv.2021.146788>. Segovia-Mendoza, Mariana, et al. "How Microplastic Components Influence the Immune System and Impact on Children Health: Focus on Cancer." *Birth Defects Research*, 2020, <https://doi.org/10.1002/bdr2.1779>.

### P32-B: Oregon's Prospective, Controlled "War on Melanoma" Cancer Education Trial: An Update

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**Abstract:** Background: Oregon (OR) has traditionally had one of the highest incidences of melanoma in the U.S.; by 2020 its incidence had fallen to 7th highest (28.5 cases/100,000 with a 15% fall attributed to a statewide ban of indoor tanning in minors. "The War on Melanoma" (WOM) is a statewide, prospective, controlled trial of educational interventions for all stakeholders, with the specific aim of further reducing incidence and severity of melanoma. **Methods:** The trial began in May 2019 with a) a baseline survey of melanoma-related knowledge, attitudes, and behaviors in OR and 2 control states that did not have plans for a statewide coordinated educational program (Washington, Utah; WA/UT) and b) the opening of a pilot educational program and a website. Educational programs are tailored toward Primary Care Providers, skin care professionals, and the lay public. Endpoints include

both cancer outcome measures obtained from the state cancer registries (incidence, mortality, stage at diagnosis, Breslow depth) and cost outcome measures obtained from the SEER-Medicare Database (treatment cost and number of biopsies needed to detect a melanoma). **Results:** The baseline survey demonstrated that OR, WA, and UT have similar demographics and melanoma-related knowledge, attitudes, and current behaviors, and therefore the comparison between OR and WA/UT would be valid. The pilot education program proved successful and was expanded (after a delay due to COVID) to a statewide educational program conducted from January to August 2022. Data on the endpoints following the program will be reported at this meeting. A repeat measure of the endpoint will be conducted in 2024-2025 to determine durability of the educational interventions. **Conclusions:** OR is conducting a statewide, prospective, controlled trial to determine if education can reduce the incidence, cost of care, and suffering from melanoma. **Objectives:** Know the design, outcome measures, and progress of Oregon's "War on Melanoma". **References:** Seigel RL, et al. *Cancer statistics 2021*. *CA Cancer J Clin* 2021;71:7-33. Kutzner H. Overdiagnosis of melanoma-causes, consequences, and solutions. *J Deutch Dermatol Ges* 2020;18: 1236-1243.

### P33-A-S: Assessing the Use of Web-Based Animation Software to Produce an Educational Series for Tobacco Prevention in Middle School-Aged Children

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**Abstract:** Background/Purpose In 2020, 6.7% of middle school students reported current use of tobacco products. While this value is slowly decreasing, it highlights the importance of continued innovative strategies for tobacco education. The Anti-Smoking Health Education Series (A.S.H.E.S.) curriculum was created in 2019 as a tool for health educators and teachers to provide skills and strategies for keeping students smoke-free. To make the curriculum accessible to more students and populations, it was adapted to a cartoon video using PowToon, a web-based animation software typically used for branding communications for commercial businesses. **Description** Using the script and instructions for the ASHES curriculum, all six lessons were transferred into interactive video format in which students may engage. Similar to the curriculum, time and space is allotted for students to respond to questions and reflect on their own experiences. Activities, assessments, and a smoke-free pledge are built into the animations to keep students engaged. **Evaluation** Each of the six lessons in the curriculum was able to be successfully adapted into 5-8 minute long interactive, educational videos. In addition, voice narration overlays add additional context and enhance the delivery of the learning experience. **Practice Changing Updates** (if applicable) Web-based animation software can feasibly create educational health material that supplements current tools while adapting to a modern age of convenience and remote learning. A curriculum with an estimated runtime of 2.5-3 hours can now be digested in 45 minutes and could potentially reach more students without the need for additional instructors. **Impact/Application/Conclusion** Tobacco product use typically begins in adolescence. Web-based animation software could be an effective tool to provide increased access to tobacco education materials for students. While videos will never replace individualized teaching in classroom settings, they can fill the gap for populations where time, resources, or instructors may not be readily available. Additionally, the use of an animation tool to create bite-sized pieces of content may be more amenable to delivering health-friendly messages amidst a plethora of competing interests. Ultimately, this medium allows for opportunities to not only educate students but also provide an alternative mechanism for any individual seeking health education via virtual displays in clinics and hospitals. **Objectives:** Identify the value in using multimedia

software for the use of tobacco prevention education. Highlight the implementation process for converting a tobacco prevention curriculum to animated video format. **References:** Gentzke AS, Wang TW, Cornelius M, Park-Lee E, Ren C, Sawdey MD, Cullen KA, Loretan C, Jamal A, Homa DM. Tobacco Product Use and Associated Factors Among Middle and High School Students - National Youth Tobacco Survey, USA, 2021. *MMWR Surveill Summ.* 2022 Mar 11;71(5):1-29. doi: 10.15585/mmwr.ss7105a1. PMID: 35271557; PMCID: PMC8923300. Gentzke AS, Wang TW, Jamal A, Park-Lee E, Ren C, Cullen KA, Neff L. Tobacco Product Use Among Middle and High School Students - USA, 2020. *MMW*

### **P34-B-S: Edutainment in Breast Cancer: Exploring Social Media and Influencers as a Means to Raise Breast Cancer Awareness**

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**Abstract:** With over 82% of the North American population active on at least one social media platform, social media and social influencers present a potential method for disseminating breast cancer information to women from trusted sources. Social media, therefore, can be a form of edutainment that helps to reduce barriers for engagement in cancer prevention by increasing awareness of breast cancer through accurate yet easily interpreted information. A review of the scientific literature explored social media's involvement in breast cancer awareness. Articles published in English and Spanish between 2012 and 2022 were located using PubMed/Medline, Google Scholar, ProQuest, CINAHL and Dimensions.ai. Major search terms included: social media, edutainment, breast, cancer, awareness, public health, disparities, underrepresentation, low income, low literacy, screening, early detection, and guidelines. Additional studies were collected through the reference list of key articles. The 2020 through 2022 lay literature was also searched for relevant articles. The Tiktok platform was analyzed using breast cancer, early detection, cancer diagnosis, and cancer support as search words. Social media and social influencers constitute effective promoters for breast cancer awareness and screening. With a worldwide reach in followers and shared access among them, support systems can be built around active participants worldwide. Eventually, these have the potential to evolve into ongoing cancer support communities that can reduce barriers for engagement by providing lower-cost opportunities to participate in cancer-related discussions, such as on screening and genetic testing for BRCA mutations. Additionally, influencers/celebrities diagnosed with breast cancer have shown to promote a rise in cancer-related content available, often reaching a wider audience than traditional campaigns by appealing to their followers with their stories. Social media platforms can serve as edutainment with their entertaining, yet educational content about breast cancer awareness. However, social media also risks the delivery of misinformation by trusted influencers. Further research is needed to fully evaluate social media platforms' ability to promote adherence to recommended screening and health promotion guidelines. Formal collaborations, in which cancer educators provide evidence-based information to influencers should help to resolve this limitation. Providing influencers with easy access to evidence-based information is critical. **Objectives:** Identify two characteristics that constitute edutainment. Identify two barriers to breast cancer prevention engagement. Identify two benefits and limitations of social media as a form of edutainment. **References:** Basu NN, Hodson J, et al. The Angelina Jolie effect: Contralateral risk-reducing mastectomy trends in patients at increased risk of breast cancer. *Sci Rep.* 2021 Feb 2;11(1):2847. doi: 10.1038/s41598-021. Qin L, Zhang X, Wu A, Miser J, Liu Y, Hsu J, Shia B, Ye L. Association Between

Social Media Use and Cancer Screening Awareness and Behavior for People Without a Cancer Diagnosis: Matched Cohort Study *J Med Internet Res* 2021;23(8):e26395 URL: <https://www.jmir.org/2021/8/e26395> DOI: 10.2196/26395.

### **P35-A-S: Telehealth Gains for Breast Care Are Reduced by the Digital Divide**

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**Abstract:** This narrative review of the scientific literature begins with the hypothesis that people with lower education and income levels in the USA are likely to experience limited access to the full benefits telehealth offers. To narrow this review, eligible articles were focused on breast health care via telehealth, written in English or Spanish, with full-text accessibility, and published between 2018 and 2022. PubMed, CINAHL, and Google Scholar databases were searched for eligible articles, as were the citation lists of relevant articles. Search words used included: telehealth, telemedicine, digital, literacy, illiteracy, techn\* divide, tele\*, satisfaction, breast cancer, socioeconomic, income, and education. Access to online telehealth services improves access to breast care with bi-directional messaging with providers, faster appointment scheduling, and its time efficiency. Telehealth lowers the costs associated with care, e.g., transportation, child/elder care services, and lost wages. It offers appointment and screening reminders, more accessible follow-up care, and, ultimately, better outcomes. However, the limited technical knowledge of many patients, partnered with limited access to technological devices and high-speed broadband limits access to telehealth services. While this affects most socioeconomically challenged women, minority women often face a disproportionately higher digital divide. For example, Hispanic women in the US are more likely to experience factors contributing to a higher rate of digital illiteracy, low access to technology, and the often-added challenge of language barriers. Telehealth has the potential to reduce pre-existing disparities; therefore, telehealth navigation and technology courses could be prioritized to bridge this digital divide. Medical care facilities could offer optional sessions to show patients how to use online telehealth services to set up appointments, access their medical records, and message and meet virtually with their providers. Medical providers could give low-income patients insurance or government-subsidized technology and technology training for the duration of their cancer treatment. Partnerships with community-based organizations and government-linked settings, like public schools and recreational centers, will reduce the barriers to engaging in such learning activities. Further research is needed to evaluate which options most successfully bridge the technical gap for all digitally challenged communities, but especially those who also experience language barriers. **Objectives:** The participant shall be able to identify benefits of telehealth services on breast care. The participant shall be able to identify barriers that limit access to breast care via telehealth. The participant shall be able to identify potential solutions to bridge the digital divide to increase breast care. **References:** Alkureishi, M. A., Choo, Z.-Y., Rahman, A., Ho, K., Benning-Shorb, J., Lenti, G., Sánchez, I. V., Zhu, M., Shah, S. D. & Lee, W. W. (2021). Digitally Disconnected: Qualitative Study of Patient Perspectives on the Digital Divide and Potential Solutions. *JMIR Human Factors*, 8(4), e33364. <https://doi.org/10.2196/33364>. Zimmerman, B. S., Seidman, D., Berger, N., Cascetta, K. P., Nezoslosky, M., Trlica, K., Ryncarz, A., Keeton, C., Moshier, E. & Tiersten, A. (2020). Patient Perception of Telehealth S.



### P36-B: Using a Nominal Group Technique to Develop a Science Communication Curriculum for Health Professionals and Clinical Researchers

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**Abstract:** Background/Purpose Effective science communication is fundamental to closing the gap from research and innovation to clinical implementation. Existing paradigms of science communication are often challenged by a lack of skill and engagement, particularly from those who progress the science. Currently, a standardized curriculum on science communication, with global applicability, does not exist. The purpose of this project is to address the gap in training by health professionals and clinical researchers through the development of a globally relevant curriculum for science communication. Methods The Nominal Group Technique (NGT) was used whereby a convenience sample of eleven science communication experts from across the globe generated, discussed and arrived at consensus on topics that should be included in a standardized science communication curriculum. Experts represented diverse backgrounds within the health sciences including education, journalism, biomedical research and medicine. Due to the COVID-19 pandemic and geographical constraints, the NGT was conducted virtually. The consensus-building methodology allowed each expert to equally present ideas and collaborate with one another to create a robust and comprehensive curriculum outline for effective science communication. Results/Findings Expert panelists reached consensus on 10 essential components of a standardized global science communication curriculum. Following the refinement of the topic areas, a virtual meeting with project co-investigators was held to review the topics and discuss relevance, applicability and appeal to the local contexts. Recommendations A standardized science communication curriculum is needed for health professionals and clinical researchers. The NGT achieved expert consensus on the core topics that should be included in a globally relevant, open access science communications course. Discussion and Conclusion Science communication skills are fundamental to closing the research and innovation to clinical implementation gap. Consideration must be given to expanding current training programs to include science communication to course curricula to better equip health professionals and clinical researchers to communicate their science to support understanding and uptake. Creation of an open access, globally accessible course, is one approach to build capacity in science communications. The course is in development with collaborators from Rwanda, Chile, Brazil, India and Canada, and will include interviews and case studies with experts from around the world. **Objectives:** The participant will be able to use the nominal group technique to obtain group consensus in the development of online course curricula. **References:** 1. Martin K, Mullan Z, Horton R. Overcoming the research to policy gap. *The Lancet Global Health*. 03/01 2019;7:S1-S2. 2. Harvey N, Holmes CA. Nominal group technique: an effective method for obtaining group consensus. *Int J Nurs Pract*. Apr 2012;18(2):188-94. 3. Evangelista CB, Larsen KL, Cervero RM, Samuel A. Corneal Laser Refractive Surgery Curriculum Development in the Military: Using the Nominal Group Technique. *Mil Med*. 2021/06// 2021:usab262.

### P37-A-S: Mentoring the Next Generation of Cancer Prevention Scientists, While Being Next-Generation

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**Abstract:** Background: Growth in the field of cancer prevention with scientists from multiple disciplines and backgrounds creates opportunities for the training and mentoring of future scientists. Each year, a 10-week summer research education program at The University of Texas MD Anderson Cancer Center provides opportunities for undergraduate and graduate students to engage in cancer prevention research. Description: In mentored research experiences for students, this program allows early career professionals to gain mentoring experiences as part of a research team. This abstract describes challenges students face in remote mentored research environments and how an alumni developed strategies and overcame challenges for mentoring a student within that environment. Evaluation: The mentoring team consisted of a student from the previous year (student mentor), a postdoctoral trainee (postdoc mentor), and a senior faculty member (faculty mentor). There are challenges in having good research experiences, especially when working remotely; these include pacing, comfortability, and learning to work collaboratively. The skills gained by the student mentor, such as data management and organization, directly translated into knowledge available to the student. At the program's start, the student mentor created videos on how to do certain tasks (pulling data, source verification, etc.) by utilizing their own work. Both the student mentor and student were similar in age, which opened the opportunity for innovation in communication and work-relationship development. This includes the use of social media - which can be seen as taboo, yet in an ongoing pandemic, platforms have become a resource for promoting connections, overcoming the challenge of being unable to form one in-person. The student and student mentor connected on various platforms, discovering they had similar interests and values, positively impacting the team, allowing the student to open up and reach out. Conclusion: This program has demonstrated how students at different levels of experience on the same research team can open mentoring opportunities that benefit everyone. Having experienced students guide newer students, especially by helping them adjust, is useful during the pandemic where remote work is common. Near-peer guided help and the use of social media platforms should be vital resources for strengthening connections between research teams working remotely. **Objectives:** The participant shall be able to identify a way to encourage team-building within a research team. The participant shall be able to utilize mentoring skills between their peers. **References:** Cree-Green M, Carreau A, Davis SM, et alPeer mentoring for professional and personal growth in academic medicine *Journal of Investigative Medicine* 2020;68:1128-1134. Christina M. Termini, Antentor O. Hinton, Edgar Garza-López, Dana-Lynn Koomoa, Jamaine S. Davis, Michelle M. Martínez-Montemayor, Building Diverse Mentoring Networks that Transcend Boundaries in Cancer Research. *Trends in Cancer*, Volume 7, Issue 5, 2021,Pages 385-388, ISSN 2405-8033, <https://doi.org/10.1016/j.trecan.2021.01.001>.

### P38-B: Impact of the Cancer Prevention and Control (CAPAC) Research Training

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**Abstract:** Background/Purpose: The Cancer Prevention and Control Cancer (CAPAC) Research Training Program at the University of Puerto Rico Comprehensive Cancer Center (UPRCCC) aims to increase the interest of master's and health professions students from the USA (US) and Puerto Rico (PR) to execute a doctoral degree and/or a career in cancer prevention and control research. We describe the impact of the CAPAC Program on the career development of trainees within the cancer prevention and control field. Description: In 2021, CAPAC successfully recruited 25 participants (70 eligible applicants) and in 2022 recruited 26 participants (89 eligible applicants). Trainees were matched to a mentor according to their research interest in basic, clinical, and population-based research at the UPRCCC and other academic/research institutions in PR to complete a 10 or 15-week hands-on research summer program. As part of the Program's evaluation, participants completed baseline, exit, and follow-up surveys. Evaluation: From the 2021 and 2022 cohorts, most were females (78%), Hispanic/Latino (86%), and current master's students (64%). Among participants that completed the CAPAC program and completed the Exit Survey (n=48), 88% reported being highly satisfied/satisfied with the research activities performed in the program and 88% with their research mentors. At program completion, 71% of master-level trainees were confident in applying for a Ph.D./DrPH within 5 years and 58% of all trainees were confident in pursuing a career in cancer prevention and control research. Overall, 3 students are already pursuing DrPH/PhD degrees. Among research outcomes, 3 trainees (6%) have published their cancer research work in scientific journals and 20 (40%) have presented posters in scientific meetings (25 posters in total). Overall, 23 (46%) of CAPAC trainees have been supported to participate in scientific conferences (32 conference participations in total). Conclusion: The CAPAC Program has successfully executed two cycles in PR, benefiting students by providing experiences in population, basic sciences, and clinical research. We expect to positively impact the number of trainees that apply to a doctoral program and the development of the next generation of cancer prevention and control researchers with an interest in Hispanic health and health disparities. Acknowledgments: NCI Grant #R25CA240120. **Objectives:** Develop the next generation of successful cancer control researchers with a cultural sensitivity to the Hispanic population. Describe the impact of the CAPAC Program on the career development of trainees within the cancer prevention and control field. **References:** Ramirez AG, Gallion KJ, Perez A, et al (2018) *Éxito!: Making an Impact in Training Latinos for Doctorates and Cancer Research*. J Cancer Educ. <https://doi.org/10.1007/s13187-018-1397-6>. American Cancer Society (2021) *Cancer Facts & Figures for Hispanic/Latino People 2021-2023*. Atlanta, Georgia. National Science Foundation NC for S and ES (2017) *Doctorate Recipients from U.S. Universities: 2015*.

### P39-A: Creating Sustainable Education Programming to Build Capacity for Global Cancer Control

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**Abstract:** Background/Purpose In 2020, the Canadian Association of Radiation Oncology, the Association of Residents in Radiation Oncology, and the Cancer Education Program at the Princess Margaret

Cancer Centre collaborated to launch a free online course for oncology healthcare providers called the Global Oncology Enrichment Program. The program aims to build capacity for a global approach for cancer control. Now in its second year, the program is designed to introduce key concepts in global oncology and cancer control including cancer policy, cancer care economics, and cancer research and innovation, with an additional goal to develop a community of emerging and accomplished leaders in the field. Reaching participants in 22 countries, the program is time intensive to run, featuring 11 live virtual sessions with Q&A periods, eblasts marketing upcoming sessions, recordings, utilizing over 200 staffing hours to plan and launch annually. The program advisory board paused to evaluate the impact and sustainability of the program and will share results with conference attendees. Rationale Open access online programming has incredible potential to connect professionals at a global level. Sharing lessons learned for developing quality, globally relevant content in a sustainable format may support other cancer educators as they develop and evolve their programming. Methods Through reviewing program evaluation and user engagement data from two years of offering the Global Oncology Enrichment Program, the authors will share insights learned to build sustainable and effective free online programs. **Objectives:** Describe the benefits of live (synchronous) vs asynchronous virtual sessions from user experience data. Discuss program development approaches for globally relevant curricula. Discuss tips to encourage engagement and completion in online programs and courses. **References:** Eichbaum, Quentin G. MD, PhD, MPH, MFA, MMHC; Adams, Lisa V. MD; Evert, Jessica MD; Ho, Ming-Jung MD, PhD; Semali, Innocent A. MD, MSc, PhD; van Schalkwyk, Susan C. MPhil, PhD *Decolonizing Global Health Education: Rethinking Institutional Partnerships and Approaches*, Academic Medicine: March 2021 - Volume 96 - Issue 3 - p 329-335, Renée S. Jansen, Anouschka van Leeuwen, Jeroen Janssen, Rianne Conijn, Liesbeth Kester, Supporting learners' self-regulated learning in Massive Open Online Course.

### P40-B-S: Exploring the Interface Between Cancer and the Microbiome

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**Abstract:** The presence of chronic inflammation has been linked to an increased risk of developing cancer and reducing the effectiveness of immunotherapy treatment for cancer. There is a growing body of research that suggests that microbes in the environment and within the human body play a role in the development, progression, and prognosis of cancer. This field of research has rapidly expanded as a result of advances in next-generation sequencing technology. That technology has created a focus on expanding the awareness and understanding of the human microbiome and the opportunity to make predictions about the role these microbes might play in preventing or causing cancer, and/or influencing cancer survival. In this review, the delineation between the concurrence and implications of microbes is discussed to establish what Sepich-Poore et al. define as the "immuno-oncology-microbiome axis." This narrative literature review identified 14 peer-reviewed, full-text accessible articles written in English between 2009 to 2022 from PubMed, CINAHL, and Google Scholar databases using the keywords: cancer, microbiome, diagnosis, treatment, immunotherapy, diet, gut, skin, oral, and inflammation. Reference lists of articles were reviewed to identify additional eligible articles relevant to keywords and article content. This search revealed that few microbes directly cause cancer, but many appear complicit in cancer development. Studies have drawn preliminary associations related to the presence of bacteria, viruses, and/or fungi found within the body and various cancers. Despite these findings, whether the majority of microbes have the potential to directly influence carcinogenesis remains unclear. Murine immunotherapy

models have provided alluring results in the modulation of gut microbiota but are just beginning to integrate into applications for animal or human therapeutic interventions. Still, a substantial gap separates clinical observations from the development of potential clinical interventions that might directly engage microbiota as a cancer control strategy. Microbiome research will advance more quickly as scientists, clinicians, public health researchers, and epidemiologists make more “microbially-conscious” observations worthy of further analysis and scientific exploration. Additionally, educational presentations for professional and lay audiences will be critical to expediting the recruitment of study participants at the same speed that technology is advancing. **Objectives:** The participant should be able to define what the immuno-oncology-microbiome axis is. The participant shall be able to identify the current state of microbiome and cancer research. The participant shall be able to determine whether the microbiome can or cannot directly affect development, progression, and prognosis of cancer. **References:** Sepich-Poore, Gregory D et al. “The microbiome and human cancer.” *Science (New York, N.Y.)* vol. 371,6536 (2021): eabc4552. doi:10.1126/science.abc4552. Poore, Gregory D et al. “Microbiome analyses of blood and tissues suggest cancer diagnostic approach.” *Nature* vol. 579,7800 (2020): 567-574. doi:10.1038/s41586-020-2095-1.

#### P42-B-S: Asian American Patients Need Better Pain Management

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**Abstract:** Pain management improves cancer patients’ quality of life and promotes adherence to cancer treatment plans. Perceptions and expressions of pain vary widely, making optimal pain management more challenging. This narrative literature review focuses on cancer-related pain experiences of Asian Americans (AA) to better understand current pain management practices. Google Scholar, PubMed, PsychINFO, CINAHL, and dimensions.ai databases were explored to find relevant, full-text accessible, English language articles published between 2008 and 2022 using these search terms: cancer, Asian American, palliative care, palliative, pain, pain experience, pain management, pain relief, cancer pain, Chinese, Indian, Filipino, Vietnamese, Korean, Japanese, emotional distress, fatigue, nausea, symptom management, and medication. Older AAs and those with language barriers often experience inadequate pain management. Misconceptions about fear of addiction or the hope of having stronger medicines available for the later progression of their disease can discourage patients from seeking more effective pain management. The patient’s use of traditional Chinese medicine may serve to delay conversations about Western forms of pain management. Cultural differences, such as AA patients’ desire to be a good patient or not challenge their doctor’s assessment of the adequacy of their pain management needs can result in a reluctance to tell their physician their pain management is inadequate. When AA patients have limited English proficiency, pain management needs may not be easy to convey or may need to be conveyed through family members, which can lead to miscommunication between patients and providers. Lower use of hospice care and other forms of palliative care, such as constipation or wound management, may also contribute to less effective pain management because those supportive care interventions are often delivered together. To date, there has been little scientific research on effective pain management interventions for AAs. Cultural competency training can help providers: better understand AA’s attitudes on pain; develop culturally competent conversational approaches for assessing cancer pain; and evaluate the use of traditional Chinese medicines for pain management. Further research is needed to: understand the pain experience of AA cancer patients better; develop metrics for more accurately gauging AA patients’ pain levels;

and provide more effective pain management. **Objectives:** Attendees will be able to identify six factors contributing to the inadequate pain management of Asian American patients. Attendees will learn more about the pain experience of Asian American cancer patients. Attendees will be able to identify the gaps in research for pain management for Asian Americans and name recommendations for future research. **References:** Clarke et al., “Does Ethnicity Affect Pain Management for People with Advanced Disease?” Saphire et al., “Patterns of Symptom Management Medication Receipt at End-of-Life Among Medicare Beneficiaries With Lung Cancer.” La et al., “Palliative Care for the Asian American Adult Population.”

#### P43-A: Pathways to Cancer Prevention: Educating the CHW Workforce in Cancer Screening Referrals and Prevention Education

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**Abstract:** Background: Transforming the workforce of Community Health Workers (CHWs) to support increased knowledge and behavior change around cancer prevention and screening is critically needed to address health inequities in cancer among underserved populations. CHWs, are similar to cancer patient navigators, whereby they connect community members to resources and schedule appointments, such as cancer screening. This resource is particularly important during the COVID-19 pandemic because it has led to some declines in cancer screening among underserved communities. Purpose/Methods: We developed the Pathways to Cancer Prevention certification, a 16-hour training to certify CHWs to provide cancer screening referrals (breast, colorectal, lung, prostate, and cervical cancers) and cancer prevention education for underserved communities to mitigate declines in screening. In addition, we developed an electronic tool--Pathways to Cancer Prevention protocol--to assist Community Health Workers (CHWs) in connecting individuals with community resources to address unmet needs associated with cancer screening and prevention. We aim to train 30 CHWs in cancer prevention education and cancer screening referral. Participants complete a cancer prevention and screening knowledge questionnaire before and after the training. Results: Twenty-seven CHWs were recruited within six months (feasibility). A total of 88% of participants attended all four days either in-person or virtual (adherence). We expect the training to support knowledge increases in cancer, prevention, and screening. We trained a diverse group of twenty-seven CHWs over two cohorts (April and August 2022), with representatives from the African American (non-Hispanic) (n=14), Asian (majority were Hmong) (n=8), Hispanic/Latino (n=4), and White (non-Hispanic) (n=1) communities. The first cohort of 17 CHWs have currently engaged 255 total clients, with 62 clients enrolled in the Pathways to Cancer Prevention electronic protocol. Discussion: Our current results show that the Pathways to Cancer Prevention Training is a feasible way to support training of CHWs based on our accrual of the study population in six months, the number of clients engaged by CHWs, and the potential to increase knowledge in cancer, cancer prevention, and screening among both CHWs and their clients. This increased understanding may work towards reducing clients’ cancer risk, as well as addressing the declines and inequities in cancer among underserved communities. **Objectives:** The participant shall be able to describe the rationale of training Community Health Workers in cancer prevention. The participant shall be able to describe the rationale of training Community Health Workers in cancer knowledge and screening. The participant shall be able to understand the process of developing the Pathways to Cancer Prevention training. **References:** Rodriguez, N. M., Casanova, F., Pages, G., Claire, L., Pedreira, M., Touchton, M., &

Knaul, F. (2020). Community-based participatory design of a community health worker breast cancer training intervention for South Florida Latinx farmworkers. *PloS one*, 15(10), e0240827. Labaki, C., Bakouny, Z., Schmidt, A., Lipsitz, S. R., Rebbeck, T. R., Trinh, Q. D., & Choueiri, T. K. (2021). Recovery of cancer screening tests and possible associated disparities after the first peak of the COVID-19 pandemic.

#### **P45-A-S: Community Stakeholder Beliefs About HPV Vaccination Promotion in Latino Gay, Bisexual, & Queer Cis-Gendered Males: Preliminary Qualitative Findings**

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**Abstract:** Background: Sexual minority men are at increased risk for human papillomavirus (HPV) infection and subsequent HPV-related cancers, yet vaccine uptake remains low among young adults, especially among Latino sexual minority men. Given these disparities, our team is developing a targeted HPV vaccination intervention for young adult Latino men who have sex with men (YLMSM). To inform implementation of this intervention, we conducted qualitative interviews guided by Consolidated Framework for Implementation Research (CFIR) among stakeholders who work with YLMSM to receive feedback on educational materials as well as methods for how to promote HPV vaccination to YLMSM. Methods: Recruited through emails, flyers, and personal referrals, participants (n=10) were staff members from healthcare and community organizations who serve YLMSM in Florida or Puerto Rico, aged 21 or older, could speak English or Spanish, and had access to a telephone or computer. Participants completed a brief sociodemographic questionnaire and an in-depth interview with a trained research coordinator. Participants' views on three CFIR domains: 1) outer setting (e.g., larger context, governmental policies), 2) inner setting (e.g., characteristics and culture of an organization where an intervention will be implemented), and 3) characteristics of individuals (e.g., knowledge of and beliefs about an intervention) were assessed, and feedback on draft educational materials was obtained. Interview transcripts were analyzed using content analysis in NVivo. Results: Participants were majority male (70%), Hispanic/Latino (80%), and had completed a graduate degree (70%). Stakeholders most frequently indicated outer setting influences, followed by characteristics of individuals and inner setting influences. Barriers to HPV vaccination among YLMSM identified by stakeholders included: 1) financial costs for both patients and the organization, 2) administrative challenges in leadership and employment, and 3) current health education efforts in sexual minority communities being mainly focused on HIV/AIDS rather than HPV. In terms of facilitators, all stakeholders and facilitators mentioned that HPV vaccination education is crucial for YLMSM. Conclusion: Findings provide insights into stakeholders' beliefs about intervention implementation. Following additional feedback from YLMSM and stakeholders on the adapted educational materials, future research will test the effectiveness of these educational materials in the YLMSM population. **Objectives:** Describe an approach to adapting educational materials for HPV vaccination in gender and sexual minorities (GSM) utilizing Consolidated Framework for Implementation Research (CFIR) Describe the utility of qualitative methods within a CFIR framework to elicit community stakeholders' feedback on design and implementation of HPV educational intervention List at least one barrier and facilitator that can help implementation of HPV vaccination interventions among GSM. **References:** Garbutt

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#### **P46-B-S: Addressing the Growing Population of Cancer Patients Living with HIV Through Research and Education**

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**Abstract:** Background/Purpose As antiretroviral therapies (ARTs) against Human Immunodeficiency Virus (HIV) improve in efficacy and accessibility, people living with HIV (PLWH) are experiencing longer and more fulfilling lives. However, as the population of PLWH ages, the incidence of age-related complications, such as cancers, are increasing. Malignancies in this population are difficult to manage because both therapies, chemotherapy for cancer and ART for HIV, have significant side effects that can be detrimental to a patient's quality of life. Furthermore, when chemotherapy and ART are combined to treat malignancies in PLWH, an exacerbation of side effects or reduction of efficacy can occur<sup>1</sup>. However, very few studies have been performed to determine the effects of certain combinations<sup>2</sup>. To address this gap in knowledge, it is critical that oncologists and cancer patients with HIV are vigilant for adverse effects and are aware of current research into combinations of therapies. Therefore, communication of studies on this topic must be understandable to a diverse audience with a spectrum of scientific backgrounds. Methods To identify and address areas of scientific communication that can be changed to improve material comprehension, we generated a poster presentation for a non-professional scientist audience. The poster studied a combination of ART and chemotherapy in mice, which represents a common source of information on these combinations. Results We proposed three communication strategies to promote audience comprehension. First, context, such as relevance to medicine, can promote understanding of a study's rationale and significance by providing broad explanations and practical applications. Furthermore, context can bridge gaps between scientists and health care providers by relating the study to general areas of science and medicine. Second, clear figures are essential because they can simplify complex procedures and translate cumbersome explanations into an understandable format. Third, explanations should be written concisely and towards a concrete message. Tangents and repetitions should be avoided to facilitate a smooth flow from study rationale to experimental approach, results, and significance. The effectiveness of these changes at enhancing material uptake in our target audience of patients and caregivers will be evaluated as the next step in the continued development of scientific communication resources. **Objectives:** The participant shall be able to utilize three strategies in scientific communication to facilitate the education of cancer patients and their caregivers on basic and preclinical research. **References:** Medina-Moreno S, Zapata JC, Cottrell ML, et al. Disparate effects of Cytotoxic Chemotherapy on the Antiviral Activity of Antiretroviral Therapy: Implications for Treatments of HIV-Infected Cancer Patients. *Antiviral Therapy*. 2018;24(3):177-186. doi:10.3851/IMP3285. Chary A, Nguyen NN, Maiton K, Holodny M. A review of drug-drug interactions in older HIV-infected patients. *Expert Review of Clinical Pharmacology*. 2017;10(12):1329-1352. doi:10.1080/17512433.2017.1377610.

### P47-A-S: Do I See Someone That Looks Like Me? A User-Centered Process to Develop Educational Materials Promoting HPV Vaccination Among Adults Aged 18-26 Years

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**Abstract:** Background/Purpose: Human papillomavirus (HPV) vaccination prevents genital warts and HPV-related cancers and is recommended for all individuals between 9-26 years old. However, rates of HPV vaccine are low among young adults (39% in 2020). Limited HPV vaccine intervention research has been conducted to promote HPV vaccination among young adults, despite their high risk for HPV infection. Thus, the purpose of this project was to develop salient, theory-informed HPV vaccine educational materials that appeal to 18-26 year olds. Methods: A draft of HPV educational materials informed by Theory of Planned Behavior (TPB) and Health Belief Model (HBM) were developed, and theoretical constructs were mapped. Next, a series of qualitative interviews were conducted to receive feedback regarding content, understanding, appeal, and preferred delivery modality. The initial set of interviews were transcribed, coded, and analyzed using thematic analysis to identify overarching themes. Educational materials were then modified based upon feedback and remapped to TPB and HBM. Last, an additional set of individual interviews using the same qualitative interview analysis approach were conducted and materials were further modified. Results/Findings: Participants (n=15) were English speakers aged 18-26 years. The majority were female (93%), White (60%), and non-Hispanic (93%). All participants (100%) had heard of HPV and the HPV vaccine and 80% reported having received the vaccine. The majority (60%) had received a provider recommendation for the vaccine. Participant themes and suggestions included clarifying vaccine benefit regardless of whether individuals were currently sexually active and their sexual orientation, increasing the realism of images (e.g., similarity to self, tone of images used), and adding messaging to increase self-efficacy. Modifications made to the materials involved changes to images, content, word choice, layout, comprehension, and efficacy. Discussion/Conclusion: Guided by a theory-based construct mapping approach HPV vaccine educational materials were developed and modified through an iterative process through qualitative interviews with the target audience. Based upon interview findings, future HPV educational materials geared towards young adults should include HPV vaccine eligibility and self-efficacy statements and images that represent multiple aspects of diversity. Future intervention studies will test the efficacy of these materials in increasing HPV vaccine uptake among young adults. **Objectives:** The participant will be able to describe an approach to creating a construct map of educational materials based on the Theory of Planned Behavior and Health Belief Model The participant will be able to identify at least two changes made to the educational materials based on participant feedback. Participants will understand the need for HPV educational materials for the young adult population. **References:** Adjei Boakye, Eric et al. "Correlates of Human Papillomavirus (HPV) Vaccination Initiation and Completion Among 18-26 Year Olds in the USA." *Human vaccines & immunotherapeutics* 14.8 (2018): 2016–2024. Web.Hirth, Jacqueline M et al. "Human Papillomavirus Vaccine Motivators and Barriers Among Community College Students: Considerations for Development of a Successful Vaccination Program." *Vaccine* 36.8 (2018): 1032–1037. Web.

### P48-B: Analysis of Cancer Knowledge, Attitudes, and Practices (KAP) in Adolescents and Young Adults in Two Texas Rural Communities

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**Abstract:** Background. The Youth and Young Adults Cancer Knowledge (C-KAP) exploratory study documented knowledge, attitudes and practices of cancer from the perspective of youth and young adults in two rural underserved communities in a border community. The adolescent, youth, and young adult population (AYAs) face a greater burden than any other age group with around one million new cancer diagnoses worldwide annually. C-KAP is an interdisciplinary research pilot project led by university scholars in partnership with community partners. Methods. The study was intended to take place face-to-face in the spring of 2020, however, due to the COVID-19 pandemic, the investigation transitioned to an online modality. The exploratory cross-sectional mixed-method study recruited 141 youth and young adults (ages 18-39). A bilingual online questionnaire was field-tested, and data was collected via QuestionPro Software. Quantitative analysis was conducted using SPSS version 26. Descriptive statistics and frequency analysis were used for demographics and basic statistics. Chi squares tests and Fisher's exact tests between variables were run to find statistically significant associations. For the qualitative data, independent coders conducted recurrent content analysis. Results. Salient themes include knowledge about cancer types, access to health care, prevention, and the perceived impact of the COVID-19 pandemic. Conclusion. Findings highlight a lack of knowledge and orientation on cancer in youth and young adults suggesting the need for community-tailored education and screening interventions to advance the prevention and early detection. **Objectives:** Identify the gaps in knowledge youth and young adults have to develop programs to increase their knowledge level on cancers of their age group. Identify attitudes youth and young adults have to ensure educational programs can better be applicable to they population. identify the practices that youth and young adults take part in that can be a health risk or preventive for cancer to see what needs to be taught to this population. **References:** Close AG, Dreyzin A, Miller KD, Seynnaeve BKN, Rapkin LB. Adolescent and young adult oncology-past, present, and future. *CA A Cancer J Clin.* 2019;69:485-496. doi:10.3322/caac.21585. Avutu V, Lynch KA, Barnett ME, et al. Psychosocial needs and preferences for care among adolescent and young adult cancer patients (ages 15-39): A qualitative study. *Cancers.* 2022;14(3): 710. doi:10.3390/cancers14030710.

### P49-A: Increasing Awareness of Colorectal Cancer Screening Among Patients of a Federally Qualified Health Center: A Dialogue of Screening Motivators and Barr

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**Abstract:** Background/Purpose. In the USA colorectal cancer (CRC) has long been recognized as a health disparity among men and women. Evidence suggest CRC screening is the best option for reducing mortality rates<sup>1,2</sup>. Access to healthcare and utilization is often a challenge for marginalized populations, which creates a challenge for this population to engage in health promoting behaviors and screenings for CRC. Federally qualified health centers provide access to healthcare in the community of an underserved population. Current statistics from 2021 indicated CRC screening at FQHC's for patients 50 to 75 years was 41.9%<sup>3</sup> compared to the National Health Interview Survey reported which 71% among those 50 to 75 years<sup>4</sup>. The proposed of the pilot study was to identify barriers and facilitators for CRC screening,

preferences for CRC screening, and preferences for CRC and CRC screening education. **Methods:** The study was qualitative and utilized phone interviews of individuals who were verified patients at a federally qualified health center in the panhandle of Florida. Eligibility criteria was 45 to 75 years, able to read and understand English, and have access to a phone. A total of 60 individuals participated in the study, wherein the interviews were transcribed and reviewed by the research team to develop codes and themes. **Results/Findings:** The results indicated themes regarding stigma of discomfort with receiving a colonoscopy, CRC screening is a sensitive topic that should not be openly discussed, the need for comfort with the healthcare provider, and a need for more information on CRC and CRC screening. Cancer mortality was a common motivator for CRC screening, specifically cancer mortality of a family member. **Recommendations/Discussion:** The data from this pilot project opens the path for increasing communication about the importance of CRC screening among patients of a FQHC. Additionally, results identify preferences in education for CRC and CRC screening, which can identify preferred methods of learning (e.g., visual, audio, and reading/writing). The data will be used to develop a culturally appropriate communication toolkit for increasing and maintaining CRC screening rates among patients at a FQHC and normalizing discussions on CRC and CRC screening. **Objectives:** Describe two barriers and one motivator for patients of a federally qualified health center to receive a colorectal cancer screening. Identify psychosocial factors which are found among patients of a federally qualified health centers. **References:** National Colorectal Round Table, 2020. Data and Progress, Colorectal Cancer Screening Rates. Retrieved September 8, 2020 <https://ncrt.org/data-progress/>. Duran-Sanchon, S., Moreno, L., Gómez-Matas, J., Augé, J. M., Serra-Burriel, M., Cuatrecasas, M., Moreira, L., Serradesanferm, A., Pozo, À., Grau, J., Pellisé, M., Gironella, M., & Castells, A. (2020). Fecal MicroRNA-Based Algorithm Increases Effectiveness of Fecal Immunochemical Test–Based Screening for Colorectal Cancer. *Clinical Gastro*.

### P50-B-S: Discovery Orientation and Science Attitudes Among Middle School UMB CURE Scholars

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**Abstract:** Research has shown that the burden of cancer is disproportionate within minority communities. A possible solution that has shown promise in increasing minority representation in healthcare fields is pipeline programs, which are designed to support and guide a specific subset of individuals to increase retention in biomedical career paths. The UMB CURE Scholars Program is a pipeline program focused on exposing West Baltimore youth to careers in STEM, cancer research, and healthcare. This study explored how discovery orientation, STEM career interests, and interest in cancer topics differed between males and females in grades 6th–8th participating in the UMB CURE Scholars program. Discovery orientation refers to a measure of affect that indicates level of curiosity, and is used as an indicator of interest and aptitude for science-related subjects. Based on prior literature, we hypothesized that male students in the UMB CURE program would exhibit higher discovery orientation. Students completed a cross-sectional survey containing questions measuring discovery orientation and career interests. Students also answered the question, ‘What would you like to know about cancer?’. The sample (N=24) was 100% black; the majority of participants were males (54%) and in 7th grade (42%). Though not statistically significant, discovery orientation subscores were either equal or higher for females than males, refuting the hypothesis. In addition, the overall mean scores for subscales were higher in our sample compared to the published results. Most students reported that they were interested in a STEM or

healthcare related career (6 doctors; 6 other healthcare fields; 7 STEM related; 3 undecided; 2 other). Additionally, both males and females reported similar answers in what they would like to know about cancer; the most common answers were about strategies for cancer prevention and treatment options to cure cancer. Limitations of this study include a small sample size and the cross-sectional analysis limits causality. Future studies should explore possible explanations to the higher discovery orientation exhibited by females and examine how participation in STEM-related programs improves overall STEM and cancer interest and long term retention in STEM/healthcare careers. **Objectives:** The participant shall be able to identify at least two indicators that can impact minority student retention in STEM/healthcare career paths. **References:** Hill, P. W., McQuillan, J., Spiegel, A. N., & Diamond, J. (2018). Discovery orientation, cognitive schemas, and disparities in science identity in early adolescence. *Sociological Perspectives*, 61(1), 99–125. Rivers R et al. (2020) The NIDDK High School Short-Term Research Experience for Underrepresented Persons. *Ethn Dis*. 2020 Jan 16;30(1):5–14. doi: 10.18865/ed.30.1.5. eCollection 2020 Winter. DOI: 10.18865/ed.30.1.5.

### P51-A-S: The Increased Mortality Rate Among African Americans Diagnosed with Bladder Cancer

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**Abstract:** This narrative review of the scientific literature explored bladder cancer morbidity and mortality rates among African Americans. Relevant full-text accessible, English language articles published between 2000 and 2021 were identified using PubMed, CINAHL, and PsycINFO databases, as well as the citation lists of relevant articles. Among the search words used to identify eligible articles were: African\*, American\*, bladder, cancer, dysplasia, urologic\*, care, socioeconomic, education, cystectomy, sex, and healthcare. Fifty-five articles were eligible for inclusion. Most (n=47) concluded that African Americans have a higher bladder cancer mortality rate compared to other groups. This was in sharp contrast to the data showing that African Americans were less likely to develop bladder cancer compared to Caucasians. The articles also reported that African Americans tend to be younger and at a more advanced stage of disease when diagnosis with bladder cancer. Specifically, they were more likely to have regional and distant disease and poorly differentiated tumors. They were less likely to undergo endoscopic surgical resection and more likely to undergo radiation and chemotherapy, treatment options with lower success rates. Their care was more likely to be received at hospitals with a low volume of patients receiving bladder cancer treatment. They were more likely to experience complications with their care, resulting in longer hospital stays. The fact that African Americans are underrepresented in bladder cancer clinical trials raises concern about the confidence with which findings from current and future clinical trials can be generalized to African Americans. An equally important set of questions was asked by authors of seven of the 55 eligible articles. They queried whether factors such as marital status, socioeconomic status, gender, or other confounding factors could be linked alone or coupled together to become confounders of the impression that race is a predictor of higher mortality. Research is needed to gain greater clarity on socioeconomic and genetically linked factors’ impact on the bladder cancer mortality rates within the African American community. This is of particular importance and urgency since some of the potentially confounding factors could be remediated immediately with enhanced patient care and patient support strategies. **Objectives:** The participant shall be able to identify two risk factors, tying together the African American community and their increased risk of complication during bladder cancer treatments. The participant shall be able to identify one confounding factors that may contribute to the increased mortality

of African Americans diagnosed with bladder cancer. The participant shall be able to identify one barrier that stands in the way of African Americans and the quality of care they receive. **References:** Kotha NV, Kumar A, Qiao EM, Qian AS, Voora RS, Nalawade V, Karim Kader A, McKay RR, Stewart TF, Rose BS. Association of Health-Care System and Survival in African American and Non-Hispanic White Patients With Bladder Cancer. *J Natl Cancer Inst.* 2022 Apr 11;114(4):600–608. doi: 10.1093/jnci/djab219. PMID: 34918091; PMCID: PMC9002275. Cole AP, Fletcher SA, Berg S, Nabi J, Mahal BA, Sonpavde GP, Nguyen PL, Lipsitz SR, Sun M, Choueiri TK, Preston MA, Kibel AS, Trinh QD. Impact of tumor, treatment.

### **P52-B-S: Screening and Potential Biomarkers for Multiple Myeloma**

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**Abstract:** Multiple Myeloma (MM) is the most common form of plasma cell tumor. Symptoms of MM present as elevated calcium levels, renal failure, anemia, and bone lesions. Diagnosis regularly has, at best, a 55% survival rate over five years. There is no screening recommendation for early detection and diagnosis is complicated. Cancer control education begins with evidence-based prevention strategies, early warning signs, and early detection methods. A narrative literature review gathered the most current information on those topics using databases: PubMed, Google Scholar, CINAHL and Web-of-Science. The key search terms used were: MM, Monoclonal Gammopathy of Undetermined Significance (MGUS), Diagnosis, Screening, Biomarkers, and Genes. Articles published in English, available in full-text between 2017 and 2022 were eligible for inclusion. Citations lists of relevant articles were examined for additional information. Like most cancers, the survivability of MM increases drastically when caught early. Multiple studies agree that delayed diagnosis of MM results in a variety of negative consequences, including treatment delays, more disease complications, increased comorbidity, and patient dissatisfaction (Graziani, et al. 884). While screening is not an option, routine examination blood draws can identify a precursor condition, MGUS, that can serve as a cautionary warning sign. When combined with risk factors, like family history, obesity, and African descent, an algorithm can be created to allow for increased monitoring for disease progression. In addition, a number of mutations in genes (e.g., IRF4, PRC1, SP140, STAT3, and KRAS) have been correlated with an increased rate of MM (Kortuem, et al. 2-4), offering the possibility of screening with blood samples. To date, there is insufficient evidence upon which to build MM early detection programs. Encouraging people to schedule annual checkups can facilitate early detection. However, the biggest gains in reducing deaths from MM will be achieved by educating the public, patients with MM, and loved ones about why their participation in basic science research is critical to finding genetic mutations and other clinical aberrations predictive of elevated risk. Equally important, people need to understand that participating in clinical trials can help scientists discover which genetic profiles will be most responsive to various treatment options. **Objectives:** The participant shall be able to conceptualize the lack of early detection methods in Multiple Myeloma. The participant shall be able to identify the direct benefits of the dissemination of knowledge on the early warning signs of Multiple Myeloma. **References:** Graziani, Giulia, et al. “Time from First Symptom Onset to the Final Diagnosis of Multiple Myeloma – Possible Risks and Future Solutions: Retrospective and Prospective ‘Deutsche Studiengruppe MM’ and ‘European Myeloma Network’ Analysis.” *Leukemia & Lymphoma* 61, 4 (March 2020): 875–86. Kortuem, K. M., et al. “Panel Sequencing for Clinically Oriented Variant Screening and Copy Number Detection

in 142 Untreated Multiple Myeloma Patients.” *Blood Cancer Journal* 6, 2 (February 2016): e397–e397.

### **P53-A-S: Latina Women and Cervical Cancer Disparities**

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**Abstract:** Cervical cancer is most commonly caused by variations of the human papillomavirus (HPV), a sexually transmitted virus. Despite the long-term availability of the Papanicolaou test, a method for identifying pre-cancer cervical cell changes, Latinas have higher cervical cancer incidence and one of the highest cervical cancer mortality rates compared to other racial and ethnic groups in the USA. This narrative review explored factors contributing to Latinas’ high cervical cancer morbidity and mortality rates. Articles published in English and Spanish between 2014 and 2022 were identified using PubMed, CINAHL, EBSCOhost, and Google Scholar databases, using such keywords as: Latinas, women, cervical cancer, HPV, screening, morbidity, mortality, incidence, vaccines, Paps smear, religion and attitudes. Citations in relevant articles were evaluated for inclusion. Studies suggest that this ethnic disparity is correlated with low health literacy, language barriers, poverty, and cultural differences, such those discouraging procedures requiring disrobing and administration of the HPV vaccine series. The slow uptake of HPV vaccine for children within the Latino community foreshadows an even greater increase in future cervical cancer disparities between the Latino and non-Latino communities, as previously non-vaccinated Latino children become sexually active. The church can play a critical role in either discouraging or increasing the uptake of HPV vaccinations. Sharing cervical cancer morbidity and mortality rates with religious leaders and discussing the impact on the entire family of women developing cancer might be a way to gain the support of the religious leaders in the public education necessary to reduce cervical cancer rates. By identifying and addressing these disparities, educational and behavioral interventions in both Spanish and English can be implemented and their impact evaluated. Education specifically focused on information to help increase uptake of HPV vaccine is critical to the future reduction of cervical cancer. Promotion of the adherence to guidelines related to Paps smears can reduce evolving cancers. **Objectives:** Attendees will be able to identify different barrier Latina women face in cervical cancer. Attendees will learn about how they we can help reduce barrier Latina women face in cervical cancer. Attendees will learn about how different cultures can play a role in cancer disparities. **References:** Title: Outcomes of a Multicomponent Culturally Tailored Cervical Cancer Screening Intervention Among Underserved Hispanic Women (De Casa en Casa). oi: 10.1177/1524839919893309. Main author: Shokar, Navkiran K. Title: Changes in Knowledge of HPV, Cervical Cancer, PAP Smears, and Attitudes Towards HPV vaccination from a Community-Based Intervention for Latinas. Main Author: Tarp Helen DOI:

### **P54-B-S: The Effects of Colorectal Cancer Screening Among Asian Americans**

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**Abstract:** Colorectal cancer (CRC) is a leading cause of cancer-related deaths among Asian Americans (AA). This narrative literature review explored AAs’ CRC screening rates, barriers to screening, and programs that promote the annual use of mailed, at-home, fecal immunochemical test (FIT) kits for the detection of early-stage CRC. The FIT is a method for finding early-stage CRC, but not precancerous CRC. Articles published between 2013 to 2021 in English

and accessible in full-text were identified using: PubMed, CINAHL, Google Scholar, Google, and Ethnic News. Search words included: CRC, colorectal, cancer, screening, Asian, American, barriers, early detection, uninsured, and FIT. Eligible articles included research where: 1) FIT was the method of CRC screening; 2) participants of Asian descent were included in the sample; or 3) an organized screening program was used. Of the 30 articles screened, eight were eligible for inclusion. The literature revealed that AA have lower screening rates for CRC and that the major barriers to screening involve the lack of CRC awareness, embarrassment about the screening procedures, language and cultural barriers, and lack of healthcare insurance. Four studies demonstrated that the FIT option increased AAs' CRC screening rates. Consistent outreach through phone, text, mail, and mailed FIT kits increased AAs' CRC screening rates to the target goal of 80%. Two studies also showed that this intervention was more effective for the uninsured, a cohort likely to derive the most benefit. For the uninsured, the uptake of screening was higher for the FIT group (40.7%) than for the colonoscopy group (24.6%). There was a high adherence to repeated, annual FIT testing. The effects of screening intervention programs were most effective when culturally aligned, such as delivering linguistically aligned information through lay health educators. These proven interventions promoting CRC screening should be expanded via community-wide applications. Colonoscopy promoting education programs should also be improved because they find precancerous polyps. Researchers need to evaluate whether subgroups within the AA community benefit equally from evidence-based programs to increase the use of FIT and colonoscopy and whether lower-uptake AA communities benefit from customized FIT, colonoscopy, and CRC screening education interventions. **Objectives:** The participant shall be able to identify at least two barriers Asian Americans face in regard to colorectal cancer screening. The participant shall be able to determine if the fecal immunochemical test is an effective form of intervention for increasing colorectal cancer screening rates in the Asian American community. **References:** Ghai, N. R. (n.d.). Colorectal cancer screening participation among Asian...: Clinical and translational gastroenterology. LWW. Retrieved August 3, 2022, from [https://journals.lww.com/ctg/Fulltext/2018/09000/Colorectal\\_Cancer\\_Screening\\_Participation\\_Among.9.aspx](https://journals.lww.com/ctg/Fulltext/2018/09000/Colorectal_Cancer_Screening_Participation_Among.9.aspx). Gupta, S. (n.d.). Comparative effectiveness of fecal immunochemical test outreach, colonoscopy outreach.... JAMA internal medicine. Retrieved August 3, 2022, from <https://pubmed.ncbi.nlm.nih.gov/23921906/>.

#### **P55-A: Global Oncology Training Insights from the 2021 Global Oncology Survey of NCI-Designated Cancer Centers**

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**Abstract:** Background: Global cancer research training in low- and middle-income countries (LMICs) is a key priority for the U.S. National Cancer Institute Center for Global Health (NCI/CGH) to advance cancer knowledge, facilitate uptake of cancer control strategies, enable equitable and impactful collaboration, and increase diversity within the cancer research workforce. The Center for Global Health supports a nationwide network of 71 NCI-Designated Cancer Centers in their international activities, including global cancer research training and capacity-building. One approach is to regularly survey Cancer Centers to understand their global oncology activities. Methods: The NCI designed and fielded an online survey from July 2021 through January 2022 to understand Cancer Centers' global oncology programs, training opportunities, and non-NIH funded projects. Analysis was conducted in Microsoft Excel and Python and

results will be distributed to NCI, Cancer Centers, others in the academic global oncology field, and the public via cancer.gov. Results: Sixty-seven of 71 Cancer Centers responded to the survey. Nearly half (33) offer didactic training opportunities in global oncology at their Cancer Center and 15 of those have a specialized global oncology training program. Training opportunities include lectures or seminars (offered at 31 Cancer Centers), grand rounds (22), non-academic courses (14), and academic courses (9) for clinical residents and fellows, research trainees, and nursing trainees. Twenty-nine Cancer Centers offer these opportunities to trainees from LMICs. Trainees from 28 Cancer Centers conduct research or do rotations outside of the USA, including in many LMICs. Lastly, Cancer Centers reported 517 non-NIH funded global oncology projects, of which 30% (192) included capacity building or training elements. These projects had collaborators at institutions in 75 countries, including 55 LMICs. Discussion: Non-NIH funded global oncology training opportunities at Cancer Centers have increased since the previous survey was fielded in 2018. While there are still limited opportunities for trainees, especially those from LMICs, the amount of global oncology projects that focus on training or capacity-building demonstrates the high priority of this area to Cancer Centers. The NCI Center for Global Health will use the results of this survey to inform continued programming in global cancer research training and encourage collaboration between NCI-Designated Cancer Centers and international partner institutions. **Objectives:** The participant will learn about relevant and current global oncology training efforts at NCI-Designated Cancer Centers. The participant will be able to recognize the National Cancer Institute and NCI-Designated Cancer Centers' commitment to global cancer research training in low- and middle-income countries. The participant will be able to identify the mismatch in supply and demand of global oncology training in the field overall, especially among early-career researchers and trainees. **References:** 1. Rachel M. Abudu, Mishka K. Cira, Doug H.M. Pyle, and Kalina Duncan. Landscape of Global Oncology Research and Training at National Cancer Institute–Designated Cancer Centers: Results of the 2018 to 2019 Global Oncology Survey. *Journal of Global Oncology* 2019 :5, 1-8. 2. Sivaram, S., Perkins, S., He, M. et al. Building Capacity for Global Cancer Research: Existing Opportunities and Future Directions. *J Canc Educ* 36, 5–24 (2021). <https://doi.org/10.1007/s13187-021-02043-w>.

#### **P56-B-S: Dementia Patients Diagnosed with Cancer: A Ghost Population**

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**Abstract:** Patients with comorbid cancer and dementia (CCD) diagnoses have a higher mortality and shorter survival time than individuals with only one condition. The prevalence of CCD is low but is expected to rise with the aging population. This study explored the scientific literature related to this disease dyad. Articles were found using PubMed, Academic Research Complete, CINAHL, ERIC, and Google Scholar. Articles published in English between 2017 to 2022 and with full text access were eligible for inclusion. Key search words included: dementia, cancer, decision-making, screening, treatment, caregiver, Alzheimer's, and guidelines. Articles that only focused on one diagnosis were excluded. Any form of dementia or cancer was considered since many studies do not specify the type of the dementia or cancer diagnosis. Eligible articles consisted of clinical trials, systemic and literature reviews, case studies, and qualitative interview style studies with varying sample sizes. Sixteen of twenty-eight articles addressed potential factors responsible for the higher mortality and shorter survival time of CCD patients. Multiple factors contribute to this problem. First, oncology staff are often not informed of the patient's dementia.



Second, caregivers/surrogate decision makers are ill informed or consistently ignored. Third, oncologists rarely receive training in optimal care strategies for dementia patients and their caregivers. Fourth, the cancer treatment pathway is complex and rarely aligned with the capacities of a dementia patient. Fifth, CCD patients are typically less likely to adhere to screening guidelines, resulting in later stage diagnoses, and often offered less aggressive cancer treatments. Lack of optimal communication strategies is the greatest predictor of negative outcomes. The multidisciplinary health team needs training focused on patient-specific communication, clinical management strategies, and initiation of discussions for advanced planning directives and power of attorney to alleviate the stress in the later stages of the patient's life. Cancer facilities should also implement changes to ease the cancer screening and treatment process for patients with dementia such as maintaining a consistent staff, allowing longer appointment times, and limiting the number of sites required for procedures. Further research is warranted to understand the effects of dementia on cancer patients. **Objectives:** The participant shall be able to identify at least five common factors that cause CCD patients to have a higher mortality rate. **References:** Ashley, L., et al. (2021). Understanding and identifying ways to improve hospital-based cancer care and treatment for people with dementia: An ethnographic study. *Age and Aging*, 50(1), 233–241. <https://doi.org/10.1093/ageing/afaa210>. Caba, Y., et al. (2021). The Impact of Dementia on Cancer Treatment Decision-Making, Cancer Treatment, and Mortality: A Mixed Studies Review. *JNCI Cancer Spectrum*, 5(3). <https://doi.org/10.1093/jncics/pkab002>

### **P58-B: Taking a Look at the Goal Attainment Scale: Can Training Programs Change Interest in Pursuing Careers in Cancer Research?**

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**Abstract:** Background The Southeast Partnership for Improving Research and Training in Cancer Health Disparities (SPIRIT-CHD) joined Moffitt Cancer Center (MCC) and Louisiana State University Health Sciences Center (LSUHSC) to create a cancer research education program (CREP). The CREP provides unique opportunities for underrepresented minority (URM) undergraduate and medical students to participate in cancer research through mentored lab experiences, community outreach and engagement in underserved communities, and participation in a joint didactic curriculum focusing on biobanking, precision medicine, and cancer health disparities. Practices Abstract Description Results from the Goal Attainment Scale, adapted for use by the CREP to measure trainees' plans to pursue a career in biobanking, precision medicine, and/or cancer health disparities research, are presented. The survey was completed by CREP trainees at baseline, on day one of the CREP internship program and at the culmination of their 8-week internship program. Evaluation Three cohorts of trainees (n=42) successfully completed the CREP. Trainee race and ethnicity demographics were self-reported as Black (55%), White (31%), and Asian (14%); Not Hispanic/Latino(a) (52%), Hispanic/Latino(a) (48%). Gender demographics were reported as females (81%), males (14%), non-binary (2%), and prefer not to answer (2%). Findings revealed a significant increase in scores, ( $p < 0.001$ ) with a baseline mean of 13.92 (SD = 4.97) and a post-internship mean score of 18.24 (SD = 4.28). The difference in mean scores was 5.29 (SD = 5.10). Impact/Application/Conclusion The CREP addresses a national priority to increase diversity in the biomedical research workforce by creating an innovative research training program for

URM students. Results indicate an increase in trainees' plans to pursue a career in biobanking, precision medicine, and/or cancer health disparities research after participating in the CREP and may be a useful tool in other training programs. Results demonstrate the potential for research training programs to impact URM trainees' career trajectory by creating unique and immersive oncology research experiences. In turn, these practices support more equitable pathway toward increasing diversity in the biomedical research workforce. **Objectives:** Identify a validated scale that can be used to measure changes in future career plans and research interests following participation in a cancer research education training program. **References:** Odedina FT, Behar-Horenstein LS, Fathi P, et al. Improving Representation of Underrepresented Minority (URM) Students in Oncology Biomedical Research Workforce: Outcome Evaluation from the ReTOOL Program. *J Cancer Educ*. 2022;37(1):37-45. Halpern MT, Dodd SJ, Fang CY, et al. Evaluation of a Transdisciplinary Cancer Research Training Program for Under-Represented Minority Students. *Inf Sci IT Educ Conf*. 2019;2019:99-108.

### **P59-A-S: An Examination of Hookah Usage and Its Association with Lung Cancer Risk in the USA: A Systematic Literature Review**

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**Abstract:** Background: Lung cancer continues to be one of the most prevalent forms of cancer in the USA. An estimated 236,740 new lung cancer cases and 130,180 lung cancer-related deaths will occur in 2022 alone. Although on the decline, cigarette smoking remains the most substantial risk factor for lung cancer. Meanwhile, waterpipe tobacco smoking (WTS), also known as hookah, is a widespread alternative to tobacco use. As of 2020, WTS prevalence in the US was at an estimated 2.6 million adults. However, little research has thoroughly investigated hookah use and its association with lung cancer risk. Methods: A literature search of articles was performed utilizing the biomedical database: PubMed. The retrieved articles were in English and published between 2012 and 2022. The study types ranged from literature reviews to observational studies. Search keywords included, but were not limited to, "waterpipe tobacco smoking," "tobacco," "hookah," "lung cancer," and "USA or US.". Results: The findings showed that WTS was associated with lung cancer risk. Research showed that WTS is most prevalent in adolescents and young adults, higher among men than women and Blacks and Hispanics are at increased odds of smoking hookah than their white counterparts in the US. Moreover, waterpipe tobacco has similar carcinogenic substances present in cigarette smoke, such as tobacco-specific nitrosamines (TSNA), polycyclic aromatic hydrocarbons (PAHs), and volatile organic compounds (VOCs). WTS usage patterns typically extend between 45-60 minutes, in which users can potentially inhale 100-200 times the amount of smoke that a single cigarette would produce. Conclusion/Discussion: Fourteen of twenty-two initially retrieved articles met the inclusion criteria for the literature review. The literature reviewed highlighted that WTS is becoming a growing substitute for traditional cigarette smoking. As hookah stores and lounges continue to emerge, the increasing access and social popularity pose a significant risk to lung cancer incidence in America. Researchers should conduct more substantive research to quantify key measures of WTS prevalence, the average frequency of use, and more accurate demographic data on WTS use. Furthermore, there ought to be more federal and state efforts to implement WTS interventions to stifle the growing use in adolescents and young adults. **Objectives:** The participant will be able to understand at least two reasons that waterpipe tobacco smoking is growing from a social perspective. The participant will be able to describe the lung cancer-related risks of waterpipe tobacco smoking compared to traditional

tobacco smoking. **References:** Assari, S., et al. (2020). "Social Determinants of Hookah Smoking in the USA." *J Ment Health Clin Psychol* 4(1): 21-27. Barta, J. A., et al. (2019). "Global Epidemiology of Lung Cancer." *Ann Glob Health* 85(1). Jeon, J., et al. (2018). "Smoking and Lung Cancer Mortality in the USA From 2015 to 2065: A Comparative Modeling Approach." *Ann Intern Med* 169(10): 684-693. Kassem, N. O. F., et al. (2018). "Levels of Urine Cotinine from Hookah Smoking and Exposure..."

### P60-B-S: Improving Public Access to Scientific Information

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**Abstract:** While the average American reads at a seventh to eighth grade level, literacy is directly correlated with socioeconomic status, resulting in widely diverse literacy levels within the population. In the USA, where most scientific research funding is raised through taxation, there is a growing recognition that information about those scientific discoveries should be accessible to all. Further, when lay articles are written by a third party to disseminate the researchers' discoveries in an accessible way, there is the risk that the journalist may misconstrue or misinterpret the research. As such, lay audiences are vulnerable to receiving misinformation or incomplete information about research studies. This literature review investigates the accessibility of scientific literature to lay audiences, using the randomly selected topic of Multiple Myeloma. Twenty articles were collected from PubMed using four of its filters to assure diversity and relevance among the literature being evaluated: reviews, clinical trials, randomized controlled trials, and systematic reviews. Five articles were gathered with each filter. Each article's abstract was scored using Word's Flesch-Kincaid (FK) reading grade level evaluation tool. The average reading grade level for all 20 articles was 16.44, which reflected the reading level of a college graduate. The review articles' average FK was 18.36, the clinical trials' average FK was 16.3, randomized control trials' average FK was 15.5, and systematic reviews' average FK was 15.6. Scientific abstracts' information is critical to the scientific community where the vocabulary and process are commonly shared. To increase the public's access to information about scientific discoveries, scientific journal should require authors to include a second abstract that has a Flesch-Kincaid reading grade level no higher than seventh grade. The lay abstract should be written so that the information is neither diluted nor should information be omitted that is critical to understanding the scientific discovery. A longer word count should be allowed for lay abstracts, so that scientists can include explanations that are essential to understanding the discoveries being explained in the abstract. Such abstracts are already required in grant applications submitted to the National Institutes of Health (e.g., the project narrative) and other organizations' grant applications. **Objectives:** The participant shall be able to identify two reasons why diverse literacy levels create disparities in accessible literature. The participant shall be able to identify two risks associated with the lay audiences receiving information from articles about the research. The participant shall be able to interpret a Flesch-Kincaid reading grade level score. **References:** Arcuri, L. J., & Americo, A. D. (2021). Treatment of relapsed/refractory multiple myeloma in the bortezomib and lenalidomide era: a systematic review and network meta-analysis. *Annals of Hematology*, 100(3), 725–734. <https://doi.org/10.1007/s00277-021-04404-3>. Brigle, K., & Rogers, B. (2017). Pathobiology and Diagnosis of Multiple Myeloma. *Seminars in Oncology Nursing*, 33(3), 225–236. <https://doi.org/10.1016/j.soncn.2017.05.012>. Chong, L. L., Soon, Y. Y., Soekojo, C. Y., Ooi, M., Chng, W. J., & de.

### P61-A-S: Demographic Correlates of Human Papillomavirus (HPV) Awareness and Knowledge Among a Young Gender Diverse Sample

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**Abstract:** Human papillomavirus (HPV) is the most common sexually transmitted infection in the USA and is the primary cause of certain cancers including cervical, penile, and oropharyngeal. Sexual and gender minorities (SGM) are at increased risk for HPV infection and morbidity. Our study aims to expand understanding of HPV knowledge and awareness among SGM young adults. Data are from an online, cross-sectional survey of SGM young adults (18-30 years old) residing in Southern California recruited through online (e.g., social media ads) and in-person (e.g., recruitment at Pride events) strategies (N=239). HPV awareness was assessed using a self-report item (e.g. Have you ever heard of HPV?), and HPV knowledge was assessed using six items adapted from the Health Information National Trends Survey (e.g. Check each HPV fact that you did not know before today: HPV can cause cancer of the cervix, etc.) that were averaged based on accuracy. Descriptive statistics of the sample demographics and HPV awareness and knowledge were conducted. Bivariate analyses assessed the association between healthcare providers suggesting an HPV vaccine and HPV awareness/knowledge. The average age was 22.7 years (SD=3.5). Most respondents identified as cisgender (60.9%), non-white (65.6%), and had greater than a high school education (75.3%). The majority were aware of HPV (86.0%) and answered 53.2% of knowledge items correctly on average. The sample most often knew HPV could affect all genders and sexes (77.6%), but least often knew it could cause oropharyngeal cancer (35.1%). Providers suggesting HPV vaccination was significantly associated with HPV awareness (71.3% vs 97.6%;  $\chi=32.1$ ,  $p<0.001$ ) and knowledge (M=0.46 vs 0.59;  $t=-3.13$ ,  $p=0.002$ ). Findings highlight significant gaps in HPV knowledge among a community sample of SGM young adults. By offering an HPV vaccine to patients, providers may open the opportunity to educate their SGM patients. Furthermore, research is needed on correlates of HPV knowledge related to HPV-linked cancer and SGM. Our sample knew HPV causes oropharyngeal cancer the least, increased awareness of HPV morbidity is essential for prevention efforts in this population. **Objectives:** Participants shall be able to restate the important correlates of HPV awareness and knowledge in the SGM study sample. Participants shall be able to describe disparities in SGM populations related to HPV morbidity and cancer. **References:** Hao, Z., Guo, Y., Bowling, J., & Ledenyi, M. (2021). Facilitators and barriers of HPV vaccine acceptance, initiation, and completion among LGBTQ community in the U.S.: A systematic review. *International Journal of Sexual Health*, 34(2), 291–307. <https://doi.org/10.1080/19317611.2021.1989535>.

### P63-A-S: Enhancing Equity and Accessibility to Umbilical Cord Stem Cell Transplantation

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**Abstract:** Allogeneic hematopoietic stem cell (HSC) transplants are used to treat several malignant and non-malignant hematological diseases. Many blood cancer patients depend upon HSC transplants to regenerate their blood-forming system after high-dose chemotherapy

ablates malignant and normal hematopoietic cells. HSC transplants can also provide curative therapies for genetic and acquired anemias, bone marrow failure syndromes, immune deficiencies, and autoimmune diseases. HSCs for transplantation are obtained from donor bone marrow, mobilized peripheral blood, and umbilical cord blood (UCB). A sufficient source of HSCs is lacking for many patients, and underrepresented racial and socioeconomic groups are most disadvantaged. This literature review examines evidence-based policies and education programs that promote equitable availability of UCB HSCs to identify high-impact interventions. Articles were found using JSTOR, PubMed, Google Scholar, Google, and ASH Publications databases, using such keywords as: cord blood, donor, ethnicity, race, diversity, banks, education, programs, transplantation, barriers, cost, financial, religion, age, gender diversity, and culture. Eligible articles were full-text accessible and published in English between 2011 and 2022. Citations of relevant articles were reviewed for eligible articles. The literature showed that most USA-based UCB donation education programs teach families about the personal potential benefits for a newborn child. Comparable campaigns do not exist for promoting donations of a child's UCB to public banks. In contrast, European countries place great social value on individuals' contribution to public UCB banks and discourage the use of private banks that only benefit the donor. The development of campaigns to promote public UCB bank donations can help to provide an easy and continuously expanding on-demand source of life-saving stem cells. Several studies examined differences between the USA' private and public UCB banks, highlighting the distinct underfunding of public education programs. There is a clear dearth of articles describing evidence-based programs to increase knowledge and participation in public UCB donation in the USA. Improving comprehensive education and outreach programs through community, campus, and health system partnerships focused on diversity of public UCB banks' holdings would significantly raise public understanding of the value of expanding the equity and accessibility to life-saving stem cells. **Objectives:** The participant will be able to identify the difference between public and private UCB banks and the ethical factors in deciding between both. The participant will be able to determine why public UCB donation is imperative to promote and how UCBs are different from alternative HSC transplant options. The participant will be able to identify relevant education program strategies to improve the equity and access to UCB transplants, especially for traditionally underrepresented persons. **References:** "Awareness of cord blood collection and the impact on banking": <https://doi.org/10.1002/pbc.26412>. "Challenges to the Sustainability of the U.S. Public Cord Blood System": [https://www.researchgate.net/publication/326044869\\_Challenges\\_to\\_the\\_Sustainability\\_of\\_the\\_US\\_Public\\_Cord\\_Blood\\_System](https://www.researchgate.net/publication/326044869_Challenges_to_the_Sustainability_of_the_US_Public_Cord_Blood_System)

#### **P64-B-S: A Systematic Literature Review: Society, Genomics, and Black Cancer-related Outcomes and Mortality; Intrinsic Reversibility for Cancer Prevention**

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**Abstract:** 1. Background/Purpose Black persons residing in the USA have unique life experiences that may serve as an adverse trigger for toxic cellular processes, contributing to disparate cancer health outcomes. In previous studies, racism has been associated with severe chronic stress resulting in systematic chronic inflammation and allostatic load that may lead to cancer-causing modifications that serve as contributing factors to increased risk of developing cancer. This systematic review provides a comprehensive evaluation of these associations, interventions, and prevention strategies. 2. Methods This is a scoping review design. The "PubMed" database were searched for articles published through July 2022. Three research questions were proposed "Are allostatic load and systematic chronic inflammation

more present or associated with increased risk to develop cancer or more aggressive cancer forms in Blacks in the USA?" "What interventions are effective at preventing and reducing allostatic load and systematic chronic inflammation?" We only considered studies that addressed allostatic load, systematic chronic inflammation, or interventions among adult Black people at risk for or current cancer patients in the USA. 3. Results Forty studies met inclusion criteria for this review. Higher rates of allostatic load and systematic chronic inflammation was found to be significantly present in Blacks. Higher allostatic load among Black women cancer patients was also found to be associated with increased odds of poorer tumor differentiation and larger tumor size. In a study of Black women at higher risk for cancer, effective interventions for reducing allostatic load were found to be increased exercise and consumption of lower sodium and balance diets. There have not been interventions that analyzed systematic chronic inflammation in Black cancer patients. 4. Discussion/Conclusion Findings from this systematic review indicates the contribution that structural, interpersonal, and personally mediated racism in the USA has on chronic stress and allostatic load leading to cancer health disparity gaps in Blacks. Lifestyle change interventions were found to be effective. Although intrapersonal interventions have been effective, further research must be conducted on structural interventions to address the multi-factorial contributors to chronic stress in Blacks. The findings of this review strongly indicate the necessity for developing multi-level intervention strategies that address negative social and structural determinants of health afflicting cancer outcome disparities in Blacks in the USA. **Objectives:** The participant shall be able to understand associations related to stressors that increase allostatic load and cancer risk and mortality amongst Black populations in the USA. **References:** 1. Article tools. Journal of Clinical Oncology. (n.d.). Retrieved July 21, 2022, 2. Akinyemiju, T., Wilson, L. E., Deveaux, A., Aslibekyan, S., Cushman, M., Gilchrist, S., Safford, M., Judd, S., & Howard, V. 3. Brody, G. H., Lei, M. K., Chae, D. H., Yu, T., Kogan, S. M., & Beach, S. R. H., Michaels, E. K., Reeves, A. N., Okoye, U., Price, M. M., Hasson, R. E., (2014) 4. Thomas, (2019) 5. Adams-Campbell(2021) 6. Soltani(2018) 7. Nuno (2019) 8. Soltani(2018) 9. Guidi (2021) 10. Venango (2022).

#### **P65-A: Unmet Needs and Health-Related Quality of Life Impacts Among Family Caregivers of People with Metastatic Bladder Cancer**

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**Abstract:** Background: Family caregivers provide critical support to people with cancer, yet research about the experiences and unmet informational/support needs of caregivers for metastatic bladder cancer patients (mBCP) is limited. We recruited caregivers of mBCP to complete a survey to understand: 1) caregiver support provided to mBCP, 2) caregivers' unmet needs and health-related quality of life (HRQoL), and 3) feasibility of caregiver research engagement, including caregivers' perceptions of barriers/facilitators affecting their research participation. Methods: Recruitment occurred through advocacy networks (Cancer Support Community & Bladder Cancer Advocacy Network) and a physician clinic. From July–Nov 2021, 15

current caregivers to mBCP completed an online survey including sociodemographics, mBCP clinical history, support provided, resources and unmet needs, and barriers/facilitators to caregiver research participation. Results: Caregivers were 93% non-Hispanic White, 93% women; mean age=60y (range:26-78); 87% caring for spouse; mean yrs since diagnosis=3.3 (range:<1-14); mean yrs between diagnosis and metastasis=1 (range:0-6); mean yrs of care=4.5 (range:<1-20); mean hrs/week care provided=100. Most frequent support (quite a bit to very much involved) included emotional support for mBCP (100%), talking to the care team about mBCP prognosis/care goals (93%), helping mBCP understand medical information (87%), talking to mBCP about prognosis/care goals (80%), helping mBCP manage symptoms/side effects (73%), managing mBCP finances (73%), medical visit transportation (73%), and medical visit coordination (73%). Most caregivers (60-80%) reported their physical, emotional, and social quality of life worsened due to caregiving. Most received help understanding mBCP medical condition (73%) and treatment options (67%), yet many caregivers did not receive needed help with their own physical (47%) or mental health (27%), or providing emotional support to mBCP (27%). Most caregivers (87%) reported lack of awareness as a main barrier to research participation. Conclusions: Caregivers are heavily involved in mBCP care, and experience substantial HRQoL impacts due to caregiving. While most receive support on clinical information and mBCP physical care, many do not receive vital support for the psychosocial needs of themselves or mBCPs. Awareness was the primary identified barrier to caregiver research participation. Our results provide an important foundation for enhancing education and support of caregivers for all people living with advanced cancer. **Objectives:** The participant shall be able to describe at least three types of key support provided by family caregivers of people living with metastatic bladder cancer. The participant shall be able to identify at least three areas of unmet need among family caregivers of people living with metastatic bladder cancer. The participant shall be able to identify at least one key barrier to research participation by family caregivers of people living with metastatic bladder cancer. **References:** Kent E. E., Rowland J. H., Northouse L., Litzelman K., Chou W. Y. S., Shelburne N., Huss K. (2016). Caring for caregivers and patients: Research and clinical priorities for informal cancer caregiving. *Cancer*, 122(13), 1987–1995. Taarnhoj, G. A., Johansen, C., Lindberg, H., Basch, E., Dueck, A., & Pappot, H. (2020). Patient reported symptoms associated with quality of life during chemo- or immunotherapy for bladder cancer patients with advanced disease. *Cancer Medicine*, 9, 3078-3087.

#### **P66-B-S: Exploring Body Image Interventions for Patients with Breast Cancer: A Review of the Literature**

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**Abstract:** Breast cancer and its treatment can have profound effects on bodily appearance and functioning, altering subjective perceptions of the body or body image (BI). These BI alterations are of special concern, considering poor body image predicts elevated levels of depression, anxiety, impairment of intimate relationships, and shorter length of survival. A review of the scientific literature was done to explore the impact of breast cancer on body image, quality of life, and interventions. PubMed, PsycINFO, and Google Scholar databases were searched to identify relevant articles published in English between 2011 and 2021. Combinations of the following search terms were used: breast, cancer, body, image, esteem, psychological, psychosocial, and intervention. Reference lists were reviewed for relevant articles. The literature confirms that breast cancer and its treatment adversely alter body image and that different types of psychological interventions are effective in reducing body image dissatisfaction. The literature also identifies

a key programmatic weakness: some interventions lack a holistic approach that focuses on the complex interplay between breast cancer, the individual, and the broader sociocultural context of women's lives. Interventions using Cognitive Behavioral Therapy (CBT) and other forms of psychotherapy are particularly promising in addressing adverse body image issues. Body image is a complex, multidimensional construct. Enhancing body image can be accomplished with personalized and/or collaborative psychological interventions designed to meet patients' needs and preferences. Further research in novel and mixed-method approaches is crucial in the development of improved interventions. **Objectives:** The participant shall be able to identify at least one way breast cancer treatment impacts patients' body image and one way to help the patient. **References:** 1) Sherman KA, Przedzicki A, Alcorso J, Kilby CJ, Elder E, Boyages J, Koelmeyer L, Mackie H. Reducing Body Image-Related Distress in Women With Breast Cancer Using a Structured Online Writing Exercise: Results From the My Changed Body Randomized Controlled Trial. *J Clin Oncol*. 2018. 2) Lewis-Smith H, Diedrichs PC, Harcourt D. A pilot study of a body image intervention for breast cancer survivors. *Body Image*. 2018.

#### **P67-A-S: Disparities in Multiple Myeloma Treatment and Research in African Americans**

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**Abstract:** Multiple Myeloma (MM) is a relatively common blood cancer of plasma cells in the bone marrow. As MM progresses, patients generally experience anemia (red blood cell deficiency), bone lesions, and hypercalcemia (excess calcium levels in blood). It accounts for roughly one percent of all annual USA' cancer cases. The five-year survival rate for MM patients is roughly 55%. MM typically arises in older patients and has no proven environmental risk factors. However, numerous studies since 2017 have identified a significantly higher incidence in African Americans than in Whites. This literature review explored recent developments related to that disparity, analyzing full-text accessible articles published in English between 2017 and 2022 using Google Scholar, PubMed, ProQuest, and the UC Library Search. The following keywords were used in the search: multiple myeloma, African-American, bone marrow donor, blood cancer, and disparities. MM, as well as many other bone marrow diseases, can be treated with hematopoietic stem cell transplant (HSCT) (bone marrow transplant). For HSCT to be administered to patients, human leukocyte associated antigen (HLA) matches must be made (donor and recipient tissue compatibility). Due to a combination of potential racial bias, psychological stigmas surrounding access to care, and delays in referral, Black patients have been referred for HSCT at much lower rates than White patients. When Black patients are referred for HSCT, there is often difficulty finding a donor with a clinically adequate match of their stem cells. Furthermore, research suggests that under similar clinical conditions with both HSCT and novel therapeutics (treatment combinations with thalidomide, lenalidomide, and bortezomib), African-American patients demonstrate greater overall survival than White patients (Fillmore et. al, 2019). Indications that African-Americans may have greater survival than Whites with equal access to treatments underscores that socioeconomic factors likely play a role in their relatively high MM mortality. An important step to bridging their medical gap would be to spread awareness on the importance of encouraging sample diversity in clinical trials and increased bone marrow donor registration within the community. Ensuring African-Americans have equitable access to HSCT would help address the disparity they face within MM. **Objectives:** The participant shall be able to recognize the disparities African-Americans face in Multiple Myeloma treatment.

The participant shall be able to consider solutions in bridging health disparities that African-Americans face with Multiple Myeloma. The participant shall be able to connect emotionally with the disproportionate struggles that minority populations, including African-Americans, suffer with medical issues, including cancer. **References:** Nathanael R. Fillmore, Sarvari V. Yellapragada, Chizoba Ifeora, Ansh Mehta, Diana Cirstea, et. al; With equal access, African American patients have superior survival compared to white patients with multiple myeloma: a VA study. *Blood* 2019; 133 (24): 2615–2618. doi: <https://doi.org/10.1182/blood.2019000406>. Landry I. Racial disparities in hematopoietic stem cell transplant: a systematic review of the literature. *Stem Cell Investig* 2021;8:24. doi: 10.21037/sci-2021-058.

### **P68-B-S: Are Pediatric Brain Tumor Survivors at Risk for Post-Treatment ADHD**

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**Abstract:** Pediatric brain tumor survivors have expressed attention difficulties similar to Attention-Deficit/Hyperactivity Disorder (ADHD) following their completion of cancer treatment. This narrative review explores what is known of the relationship between (ADHD) and pediatric brain tumor survivors. PubMed, ScienceDirect, and Google Scholar databases were searched with key terms: attention deficit, hyperactivity, brain, cancer, neural divergence, treatment, and ADHD. ADHD symptoms were defined as hyperactivity/impulsivity and/or inattention that cause impairment in multiple settings. Articles were found from citations listed in relevant articles. Peer-reviewed articles published between 2013 and 2022 were included if they focused on children, were in English, and full text-accessible. Twenty articles were eligible. Few evidence-based studies related to pediatric post-brain tumor treatment and ADHD sequelae were found. A higher risk of ADHD and related symptoms were confirmed in survivors of pediatric brain tumors. The literature underscored the need for a standardized clinical protocol to aid clinicians and researchers in identifying post-treatment ADHD and optimal methods for intervening in the management of attentional deficit effects. Four studies used standardized methods for assessing pre-treatment, post-treatment, and long term pediatric brain function. Several studies reported that select patients may benefit from behavioral or pharmacologic treatment of their ADHD. However, the selection of the intervention is on a case-by-case basis, depending on the manifestations of the symptoms and brain regions affected. A few studies reported that methylphenidate helped mitigate attention challenges in some patients. The literature suggests that a disadvantaged situation (such as socioeconomic status) may negatively impact optimal rehabilitation and the prevention of psychological distress. Results demonstrate that screening for ADHD symptoms, clearer assessments, and intervention methods for attentional deficit effects might help identify survivors who need neuropsychological evaluations and interventions. Necessary academic accommodations and student services should be documented by clinicians to enable patients to secure appropriate accommodations. Further research is recommended to develop evidence-based standardized pre-treatment assessment methods and post-treatment ADHD management strategies for pediatric patients who experience ADHD and/or symptoms of ADHD. The use of behavioral and medicinal interventions warrant further evaluation for mitigating attention challenges. **Objectives:** The audience will be able to determine whether or not pediatric brain tumor survivors are at risk for post-treatment ADHD and learn about current research endeavors to curb this disparity. The audience will be able to iterate at least three factors suggested ensuring optimal post-cancer treatment among pediatric patients who experience ADHD and/or symptoms of ADHD. The audience will be able to discuss how

post-treatment ADHD in brain tumor survivors is currently handled and determine whether it is viable to continue with these practices. **References:** Shabason, Emily K., et al. “Clinical Diagnosis of Attention-Deficit/Hyperactivity Disorder in Survivors of Pediatric Brain Tumors.” *Journal of Neuro-Oncology*, vol. 143, no. 2, June 2019, pp. 305–12. PubMed, <https://doi.org/10.1007/s11060-019-03165-4>. Hardy, Kristina K., et al. “Attention-Mediated Neurocognitive Profiles in Survivors of Pediatric Brain Tumors...” *Neuro-Oncology*, vol. 20, no. 5, Apr. 2018, pp. 705–15. PubMed Central, <https://doi.org/10.1093/neuonc/nox174>.

### **P69-A-S: Education to Protect Lung Function and Increase Cancer Survival Rates**

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**Abstract:** Coping with cancer and a second life-limiting severe disease usually results in a poorer prognosis for the cancer outcome. The treatment plans designed to manage two diseases are often complex and cumbersome. Diseases that reduce lung capacity have an exceptionally high risk of lowering cancer survival rates. This review of the literature focused on the various triggers of lung inflammation experienced by adults and children living in California’s Imperial Valley as a way to reduce that source of comorbidity. Studies included patients who experienced respiratory illness as a comorbidity with cancer. Research articles between 2015 and 2022 related to the Imperial Valley and surrounding areas were identified using PubMed, Google Scholar, and CINAHL databases. Search terms included Imperial Valley, asthma, lung, cancer, comorbidities, COPD, respiratory illness, and air quality. Additional information was identified through the research articles’ and clinical studies’ reference lists. Studies suggest that patients with respiratory illnesses experienced increased vascular endothelial growth and transforming growth factors, promoting tumor growth and metastasis. This was observed in patients with comorbidities such as asthma, Chronic Obstructive Pulmonary Disease (COPD), and bronchitis. Survival rates for lung cancer patients with COPD had worse outcomes and 54.5% survival compared to patients without COPD of, 69%. However, one study showed decreased mortality rates among asthma patients with small-squamous lung cancer, a possible protective benefit of asthma drugs. While lung cancer rates in Imperial Valley are falling, respiratory illness remains high, potentially leading to an increased risk of lower survival rates. Other factors also contribute to decreased lung function: pesticides, agricultural burning, particulate matter exposure and Salton Sea airborne toxins. California’s Imperial Valley faces high rates of respiratory illness due to unhealthy air quality. Other contributing remedial factors also need to be reduced. Binational policies are necessary to promote lung function. Providing education to help providers recognize when patients with existing respiratory illness should be referred for cancer screening should be evaluated as a way to reduce this disparity. **Objectives:** The participant shall be able to learn more about comorbidities that decrease lung function and lead to increased cancer mortality rates. The participant shall be able to identify remedial factors that affect lung inflammation. **References:** Qin L, Guitart M, Curull V, Sánchez-Font A, Duran X, Tang J, Admetlló M, Barreiro E. Systemic Profiles of microRNAs, Redox Balance, and Inflammation in Lung Cancer Patients: Influence of COPD. *Biomedicines*. 2021; 9(10):1347. <https://doi.org/10.3390/biomedicines9101347>. Doede AL, DeGuzman PB. The Disappearing Lake: A Historical Analysis of Drought and the Salton Sea in the Context of the GeoHealth Framework. *Geohealth*. 2020 Sep 23;4(9):e2020GH000271. doi: 10.1029/2020GH000271. PMID: 32999947; PMC.

### P70-B-S: Endocrine Disrupting Chemicals and Triple-Negative Breast Cancer

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**Abstract:** Triple-Negative Breast Cancer (TNBC) is the most fatal variation of breast cancer killing twice as many African American women than white women. More research is needed on hormone-containing personal care products to analyze the association of Endocrine Disrupting Chemicals to TNBC. **Objectives:** The participant shall be able to examine the association of EDC containing hair products and Triple-Negative Breast Cancer among African American women in the USA. **References:** Centers for Disease Control and Prevention (2021) Howard, F. M., & Olopade, O. I. (2021). Li, Z. et al. (2018). Llanos, A et al. (2017). Stiel, L et al. (2016).

### P71-A-S: Factors Explaining Higher Rates of Prostate Cancer in Latino Men in the USA than Latino Men in Mexico

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**Abstract:** Latino men born and living in the USA are more likely to develop prostate cancer than Latino men born and living in Mexico. This review of the scientific literature was undertaken to explore possible explanations of this difference and research to reduce prostate cancer among Latinos in the U.S. This literature review use PubMed, CINAHL, and Google Scholar and such search words as: Latino men, prostate cancer, Hispanic, acculturation, health care, diet, language barrier, living/work environments, education, and familial support. Articles published in English or Spanish from 2015 to 2022 were eligible for inclusion. Citations from eligible articles were reviewed for additional articles. Only full-text accessible articles were eligible. Internet sites were also searched, such as the American Cancer Society, National Cancer Institute, Prostate Cancer Foundation, and the U.S. Department of Health and Human Services Office of Minority Health. Differences related to lifestyle, education, lack of health care access, and language barriers to health information have been proposed as correlated with the higher rates of prostate cancer among U.S. Mexican Latinos. Studies showed that Latino men born and raised in the USA have different lifestyles from Latino men living in Mexico. Overall, Latino men in the USA are more likely to have lower physical activity levels, lower socioeconomic status, less healthy diets, limited access to education and lack of a regular health care provider, so they are less likely to discuss prostate cancer screening with their doctor. Mexican Latinos born and raised in the USA experience a lifestyle that resembles traditional American lifestyles and levels of prostate cancer similar to other American men. More research is needed to define the specific prostate cancer factors of Mexican-born Latinos, needed to develop education programs for risk reduction and early detection strategies for Latino men. Particular concern relates to the high use of urgent care clinics, which reduce the likelihood of cancer screening discussions and the potential benefit of self-paced education programs at those venues. Attention should be geared towards increasing the number of prostate cancer awareness initiatives in Spanish for Latino community. **Objectives:** Attendees will be able to identify various risk factors for prostate cancer. Attendees will learn about health disparities in the Latino community. Attendees will learn ways to improve health care for the Latino community. **References:** Stern, M., 2022. Prostate Cancer in US Latinos: What Have We Learned and Where Should We Focus Our Attention. National Library of Medicine. Span, P., 2022. Do Cancer Centers Push Too Many Tests?. [online] Nytimes.com.

### P72-B-S: Reducing Sexual Minority Women's Breast Cancer Risk

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**Abstract:** Increased breast cancer risk has been linked to moderate to heavy alcohol consumption. Research has documented that sexual minority women (SMW) have higher alcohol consumption than non-sexual minority women. This integrative review of the scientific literature explored the variables between breast cancer, sexual minority women, and alcohol consumption, as well as evidence-based programs that will help reduce this risk factor among sexual minority women. Eligible articles were identified using Google Scholar, Proquest, and LGBT Life, using such keywords as: sexual minority women, LGBT, breast cancer, alcohol consumption, one-carbon metabolism, and DNA methylation. Full-text accessible articles written in English and published between 2001 and 2022 were eligible for inclusion. Studies related to trans women and men were excluded due to the possible confounding effects of hormone replacement therapy. Epigenetic mechanisms inducing breast cancer include one-carbon metabolism (OCM) disruptions that, in turn, deplete DNA methylation; moderate to chronic alcohol intake decreases folate intake and increases estrogen levels. Methylation decreases as alcohol intake is increased (hypomethylation), thus inducing tumorigenesis in breast cells. No research was found including sexual minority women, either as a group or as subgroup of members of a larger study sample in DNA methylation profiling. Psychosocial risk factors, specific to SMW, mediate preventive care barriers, increased morbidity and mortality rates, and long term prognosis. Psychosocial risk factors include and influence substance abuse. Exploring psychosocial risk factors and intricate biochemical mechanisms will be critical for future research and inclusion in health-care for LGBTQ+ individuals. Although further research is needed to clarify this relationship between breast cancer and alcohol in SMW, LGBTQ+ advocacy and support organizations can play a key role in encouraging SMW participation in breast cancer control research studies. Funding is needed to provide evidence-based educational resources to raise awareness of the link between breast cancer and alcohol for SMW, as well as interventions to help reduce SMW's alcohol consumption. **Objectives:** Identify the psychosocial risk factors experienced by sexual minority women that are linked to increased breast cancer risk with an emphasis on alcohol consumption Discover the epigenetic mechanisms behind alcohol-induced breast cancer Acknowledge the different communities that will help reduce alcohol abuse/dependence and expand cancer education concerning LGBTQ+ individuals. **References:** Williams, Austin D., et al. "Breast Cancer Risk, Screening, and Prevalence Among Sexual Minority Women: An Analysis of the National Health Interview Survey." *LGBT Health*, vol. 7, no. 2, Mar. 2020, pp. 109–18. [liebertpub.com \(Atypon\), https://doi.org/10.1089/lgbt.2019.0274](https://doi.org/10.1089/lgbt.2019.0274). Rumgay, Harriet, et al. "Alcohol and Cancer: Epidemiology and Biological Mechanisms." *Nutrients*, vol. 13, no. 9, 9, Sept. 2021, p. 3173. [www.mdpi.com, https://doi.org/10.3390/nu13093173](https://doi.org/10.3390/nu13093173).

### P73-A-S: Factors Associated with Genetic Counseling and Testing for Black Women Diagnosed with Triple-Negative Breast Cancer in the USA

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**Abstract:** Background/Purpose. Breast cancer is the second leading cause of death in women. Mutations of BRCA 1 or 2 genes are the cause of breast cancer in 5%-10% of those women. Black women have a higher occurrence of early-age onset breast cancer before 50 years old and are two times more likely to be diagnosed with Triple Negative Breast Cancer (TNBC). There are disparities in awareness and

utilization of genetic testing for inherited breast cancer with lower rates being seen among Blacks compared to non-Hispanic whites. Genetic counseling and testing allow for the discovery of mutations that would allow for decision-making on screening, chemoprevention, and prophylactic measures that would reduce morbidity and mortality. The purpose of this literature review is to better understand the factors associated with Black women's receptivity to genetic counseling and testing. **Methods.** A literature search was performed using the online database: PubMed. This systematic review consisted of search parameters from January 2012 to June 2022. Keywords guiding this search included: "TNBC", "genetic counseling", "genetic testing", "genetic mutations", "black women", and "cancer health disparities". **Results.** The findings indicated that there were lower genetic testing rates in Blacks compared to non-Hispanic whites. Factors associated with low testing rates among Black women included lack of awareness of genetic counseling and testing, low referral rates, geographical location, cost of testing, insurance coverage, distrust in medicine, and limited recall of family history. The literature search did also reveal that there were women wanting to know their status who were open to genetic counseling and testing if it was recommended by a medical provider. Additionally, women were more receptive when they perceived the benefits of genetic counseling, sharing information with family members, being informed about their health, and feeling worthy of contributing to society and science through research. **Discussion/Conclusion.** Genetic counseling and genetic testing are underutilized resources among black women with TNBC who is most affected. The most common factor associated with low testing rates was the lack of awareness of the services. Based on this finding, an increase in education on the importance and implications of genetic counseling and testing is warranted in the Black community to cause receptivity and the use of these vital services. **Objectives:** The participant will be able to identify two factors that cause genetic counseling and testing to be underutilized in African American women diagnosed with Triple Negative Breast Cancer. **References:** National Human Genome Research Institute. (2019, October 11). What is genetic testing? National Institutes of Health (NIH). <https://www.genome.gov/About-Genomics/Introduction-to-Genomics>. Reid, S., Cadiz, S., & Pal, T. (2020). Disparities in Genetic Testing and Care among Black women with Hereditary Breast Cancer. *Current breast cancer reports*, 12(3), 125–131. doi:10.1007/s12609-020-003. [CancerDisparitiesProgressReport.org](https://www.cancerdisparitiesprogressreport.org) [Internet]. Philadelphia: American Association for Cancer Research; ©2022.

#### **P74-B-S: Influence of Critical Reflective Writing on Professional Identity Formation for Under-Represented Students in a Cancer-Career Pipeline Program**

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**Abstract:** Professional identity formation (PIF) is the developmental, non-linear process through which students start to align with the identity of physician (Cruess et al., 2015). Research demonstrates that the transition process from school towards employment encompasses making commitment towards the profession (London, 1983; Orkibi, 2010). This process can be additionally challenging for students who are from underrepresented groups (Fergus et al., 2018). Little is known about the specific process through which PIF is cultivated. However, reflective writing offers learners the opportunity to engage in the examination and illumination of critical events (Ward, et al., 2015). Reflective writing is not always an intuitive practice. When coupled with prompts to explore professional identity, learners have an opportunity to investigate important lived events that support their career trajectory. This study used an exploratory approach to investigate the process of weekly critical reflective writing assignments to encourage

students in the exploration of their professional identity as it relates to the cancer-career pipeline program as well as their development as a professional. Weekly de-identified reflective writing prompts were assigned to a group of ten undergraduate scholars participating in a summer academic pathway program. Seventy written reflections gathered over eight weeks from this cohort were analyzed using consensual qualitative analysis. Within Dedoose, an online qualitative analysis tool, a code book was created using inductive coding practices. Recurring codes were compiled to form a foundation of themes representing the cohort's experiences and perspectives. Many of the students identified academic, research, and clinical experiences they might not have otherwise received outside of SPARCC participation, including a new awareness of career choice and opportunity situated in the field of cancer research. Inclusion of social supports and mechanisms for collaboration supported a community of practice. A sense of belonging and mattering seemed to alleviate moments of self-doubt as a developing professional. **Impact/Application/Conclusion** As of June 2022, student trajectory after participation in the 2019 summer program include matriculation into medical school and graduate school, entrance into clinical research positions, and longevity in healthcare professions. Programs should include reflective writing and identified writing prompts to better understand student experiences and tap into lived experiences and rich stories to further understand how students position themselves in this career field. **Objectives:** Draft reflective writing prompts as a method to better understand learner/participant experiences. Determine a theoretical framework or conceptual framework that will support research. Implement skills to qualitatively analyze data. **References:** Houseknecht VE, Roman B, Stolfi A, Borges NJ. A Longitudinal Assessment of Professional Identity, Wellness, Imposter Phenomenon, and Calling to Medicine Among Medical Students. *Med Sci Educ*. 2019 Mar 14;29(2):493-497. doi: 10.1007/s40670-019-00718-0. PMID: 34457506; PMCID: PMC8368953. Chandran L, Iuli RJ, Strano-Paul L, Post SG. Developing "a way of being": Deliberate approaches to professional identity formation in medical education. *Acad Psychiatry*. 2019;43(5):521–7.

#### **P75-A-S: Education on Current Approaches and Immunotherapy Towards Breast Cancer in High-Risk Subpopulations**

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**Abstract:** African American women have the highest breast cancer death rate compared to other racial/ethnic groups in the USA. This narrative literature review explored the factors believed to contribute to this disparity. One factor is that African American women are more likely to develop triple-negative breast cancer (TNBC), a highly aggressive form of cancer. There are three common biomarkers associated with breast cancer that have been identified that can help with its prognostic evaluation. A negative evaluation means that the marker is not present. The markers are estrogen receptor (ER), progesterone receptor (PR), and human epidermal growth factor receptor 2 (HER2). In the absence of these markers, there is little to guide oncologists' selection of therapeutic agents that are likely to be most effective. This makes TNBC an emotionally difficult message for patients and their loved ones to receive. This review of the TNBC literature will help those who help patients or their loved ones to explain this form of breast cancer. TNBC are typically more aggressive and have fewer conventional treatment options. Immunotherapy is a new strategy for cancer treatment that uses a patient's own immune system to combat cancer. TNBC has shown to have high infiltration of tumor-infiltrating lymphocytes (immune cells), making it a great candidate for immunotherapy. Antibody therapy is a type of immunotherapy that enhances

the body's immune system to target and eliminate cancer cells. This can help prevent disease progression by inhibiting the multiplication of cancer cells and inducing cancer cell death. This treatment has shown considerable promise for treating patients with TNBC. Side effects common to traditional chemotherapy are also reduced with immunotherapy. This overview will help attendees respond to questions about the newly evolving field of immunotherapy and its promising use with TNBC. Such conversations can also be used to explain the importance of volunteering for immunotherapy-related research studies when such opportunities arise. **Objectives:** The participant shall be able to educate on cytokines involving immunotherapy advancement in different ethnic/racial groups. The participant shall be able to educate the public about why diversity in genomic databases is critical to discovering explanations of disease-related disparities. The participant shall be able to educate on immunotherapy the benefits in expanding genomic databases. **References:** Smyth, Mark J., et al. "Cytokines

in Cancer Immunity and Immunotherapy." *Immunological Reviews*, vol. 202, no. 1, 2004, pp. 275–93. Wiley Online Library, <https://doi.org/10.1111/j.0105-2896.2004.00199.x>. Yeyeodu, Susan T., et al. "Protective Innate Immune Variants in Racial/Ethnic Disparities of Breast and Prostate Cancer." *Cancer Immunology Research*, vol. 7, no. 9, Sept. 2019, pp. 1384–89. PubMed Central, <https://doi.org/10.1158/2326-6066.CIR-18-0564>.

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