# 2019 ORAL RESEARCH PRESENTATIONS

| NAME | TITLE | PROGRAM |
|---|---|---|
| **Dr. Christine Zhang RESEARCH 1** | Large Patient Photo and Name Check at Time of Order Signing Significantly Reduces Placement of Orders on Wrong Patients | **GBMC** |
| **Dr. Samuel Rosner RESEARCH 2** | Early Shift in Immune Cell Subsets to Predict Response to Immune Checkpoint Blockade in Non-Small Cell Lung Cancer (NSCLC) | **Johns Hopkins/ Bayview** |
| **Dr. Harita Shah RESEARCH 3** | Solo Se Vive Una Vez (You Only Live Once): A Campaign to Improve HIV Testing Among Immigrant Latinx in Baltimore | **Johns Hopkins/Broadway** |
| **Dr. Ahmad Al-Abdouh RESEARCH 4** | Aspirin Efficacy in Primary Prevention: A Meta-Analysis of Randomized Controlled Trials | **St. Agnes** |
| **Dr. Dina Ioffe RESEARCH 5** | Oligoclonal Banding and Survival in Patients Receiving TCR Infusions Allowing ASCT | **UMMS/VA** |

AMERICAN COLLEGE OF PHYSICIANS

MARYLAND REGION ANNUAL ASSOCIATES MEETING MAY 9, 2019

**Please check one. First author is:**
**( X ) RESIDENT**
Please check only one. Abstract is submitted to.
**( ) Poster**
**( ) Oral**
**( X ) Either**
**General Classification:**
**( ) Clinical Vignette**
**( X ) Research Competition**
- **( ) Basic Science**
- **( ) Evidence based medicine review**
- **( X ) Quality/Safety**
- **( ) Clinical Research**

**Indicate your participation in research process (4 sentences or less):**

**Concept development**
**Data collection**
**Data processing**
**Manuscript development**

**First Author Information:**

**Name: Christine Zhang, MD**

**Institution: GBMC**

**Daytime Phone: 443-849-3760**

**Co-Author(s) Associates: Jennifer Freimund, MD**

**Program Director's Name: Paul Foster, MD**

**Large Patient Photo and Name Check at Time of Order Signing Significantly Reduces Placement of Orders on Wrong Patients.**

**Background:**
Electronic medical record (EMR) systems, competing for physician support, have developed strategies to minimize typing and mouse clicks with the unintentional impact of increased orders on wrong patients. In previous work, we validated a statistical tool that estimates computerized physician order entry (CPOE) identification error (COIDE) using order repetition rates. The index that resulted from the tool demonstrated a minimum of 0.5% order misplacement. The errors directly correlated with increasing numbers of patient orders per hour. The error rate did not improve with resident seniority. Many of these errors appeared innocuous to clinical staff, yet likely represent significant latent risk for inappropriate treatment, testing, and costs. In this follow up, we piloted a novel technique where all resident orders triggered a large pop-up demographic with the patient's name, age, date of birth and large picture over a 1-month period. Our goal was to explore the impact on COIDE and search for any unexpected negative effects on work flow or safety.

**Method:**
Our EMR team developed an Epic off-the-shelf best practice advisory (BPA). As an initial test of concept and expedited review by our IRB, we implemented the BPA with all residents. Interns who placed CPOE orders both before and after the pop-up intervention were surveyed about the effectiveness and limitations. We also used the COIDE index to compare the interns' error patterns during the first three months of internship in comparison with the implementation period.

**Results:** From the anonymous resident survey, 63% (12 out of 19 residents) said the pop-up "helped them prevent orders from being placed on the wrong patient". Thirty-seven% stated they found themselves "placing orders on the wrong patient at least once per week". Seventy-four% reported at "least one COIDE during the month". Of concern, 42% reported clicking through the pop-up without reading the demographic information as "frequently or always". Additionally, 32% reported "unanticipated consequences". Our study had technical issues ensuring adequate construction of the photograph in that it sometimes appeared cropped or out of frame. Further supporting the impact, there was a 37% decrease in COIDE index pre- and post- intervention, (9.2 vs 5.8, paired t-test, two tailed p-value $< 0.05$.)

**Conclusions:**
The residents survey (including both interns and senior residents) and COIDE index both demonstrated a significant decrease in patient identification errors. Using a demographic, large, photographic pop-up alert may substantially reduce a previously underappreciated cause of error associated with EMRs. The index reduction implies a likely real prevalence of error of 3-5%. The index may be valuable in evaluating compliance and comparing alternate strategies. We need to work further to reduce the click-through rate. Based on these preliminary findings, we continue to roll out the project to other physicians/hospitalists and anticipate particular impact with Emergency Room doctors and nocturnal hospitalists where high volume orders and distraction are present. Application of a large photographic pop-up should be straightforward in alternate institutions and electronic systems.

## 2019 Mulholland Mohler Resident Meeting

**AMERICAN COLLEGE OF PHYSICIANS**

**MARYLAND REGION ANNUAL ASSOCIATES MEETING MAY 9, 2019**

**Please check one. First author is:**
**( X ) RESIDENT**
Please check only one. Abstract is submitted to.
**( ) Poster**
**( ) Oral**
**(x) Either**
**General Classification:**
**( ) Clinical Vignette**
**( x ) Research Competition**
- **( ) Basic Science**
- **( ) Evidence based medicine review**
- **( ) Quality/Safety**
- **( x ) Clinical Research**

**Indicate your participation in research process (4 sentences or less): Developed clinical database and performed statistical analysis. Constructed conclusions from results of data analysis to be included in abstract.**

**First Author Information:**

**Name: Samuel Rosner, MD**

**Institution: Johns Hopkins Bayview Medical Center**

**Daytime Phone: 9144827977**

**Early shifts in immune cell subsets to predict response to immune checkpoint blockade in non-small cell lung cancer (NSCLC).**

**Background:**
The use of immune targeted agents for NSCLC has improved outcomes for patients with metastatic disease. Biomarkers such as the neutrophil-to-lymphocyte ratio (NLR) prior to therapy have been shown to predict outcomes however little is known about dynamic changes in immune subset composition during therapy.
**Methods:**
A single institution, retrospective review was performed of 88 NSCLC patients who received anti-PD1 therapy. NLR and relative lymphocyte count (RLC) were recorded at baseline, 4 weeks after treatment initiation, and at every subsequent computed tomography scan until time of progression. Endpoints included overall survival (OS) and durable clinical benefit (DCB), defined as stable disease or response at 6 months after therapy. Non-parametric tests were used to compare NLR and RLC between responders and non-responders, cox-proportional hazards regression analysis was used for univariate associations with OS and Kaplan-Meier survival curves were compared by the log-rank test.
**Results:**
Our cohort comprised of 60 male patients with a median age of 63 years and a median OS of 38.5 months. Baseline NLR and RLC were not associated with response to therapy (Mann Whitney $p=0.25$ and $p=0.23$, respectively). We identified a statistically significant higher RLC and lower NLR at week 4 in pts with DCB (Mann Whitney $p=0.001$). Continuous NLR and RLC values at 4 weeks were statistically significantly correlated with OS (HR=1.008, 95% CI 1.001-1.015, $p=0.03$ and HR=0.939, 95% CI 0.9-0.98, $p=0.004$ respectively). Using median RLC at 4 weeks as a threshold, patients with high RLC at 4 weeks had significantly favorable survival (log-rank $p<0.0001$). Using the previously reported cut-off point of NLR=4, patients with NLR>4 had significantly worse OS (log-rank $p<0.0001$). For patients with acquired resistance to therapy, RLC increased early during treatment followed by a decrease at the time of progression.
**Conclusions:**
Our findings suggest early immune cell subset dynamics are associated with clinical outcomes for NSCLC pts treated with anti-PD1 therapy. Our observations reflect the differential immune repertoire shifts and if prospectively validated may be used to stratify patients receiving immune targeted agents.

**Co-Author(s) Associates: Patrick M. Forde MD, Jarushka Naidoo MD, Kristen Marrone MD, Joshua E. Reuss MD, Josephine Louella Feliciano MD, Benjamin Philip Levy MD, Christine L. Hann MD, Victor E. Velculescu MD, Julie R. Brahmer MD, Valsamo Anagnostou MD**

**Program Director's Name: Dr. Erica Johnson**
**(indicating review of abstract)**

**2019 Mulholland Mohler Resident Meeting**

**AMERICAN COLLEGE OF PHYSICIANS**

**MARYLAND REGION ANNUAL ASSOCIATES MEETING MAY 9, 2019**

**Please check one. First author is:**
**( X ) RESIDENT**
Please check only one. Abstract is submitted to.
**( ) Poster**
**( ) Oral**
**( x ) Either**
**General Classification:**
**( ) Clinical Vignette**
**( x ) Research Competition**
- **( ) Basic Science**
- **( ) Evidence based medicine review**
- **( ) Quality/Safety**
- **( x ) Clinical Research**

**Indicate your participation in research process (4 sentences or less):** I directed the Solo Se Vive Una Vez (You Only Live Once) public health campaign, overseeing its implementation and evaluation. I submitted the IRB application, managed our team of research assistants, and organized survey and EMR data collection and entry through an online database. I conducted the research analysis and authored the project's findings for dissemination.

**First Author Information:**

**Name: Harita Shah MD**
**Institution: Johns Hopkins**
**Daytime Phone: 309-265-7491**
**Co-Author(s) Associates:**
Suzanne Grieb PhD MSPH, Alejandra Flores-Miller, Kathleen Page MD

**Program Director's Name: Leonard Feldman MD**

**(indicating review of abstract)**

SOLO SE VIVE UNA VEZ (YOU ONLY LIVE ONCE): A CAMPAIGN TO IMPROVE HIV TESTING AMONG IMMIGRANT LATINX IN BALTIMORE

Purpose: Of the 263,000 Latinx with HIV in the U.S., one fifth are unaware of their infection. Consistent with national trends, Baltimore City Health Department (BCHD) data show that HIV-infected Latinx are more likely to be diagnosed late than any other racial/ethnic groups. In prior studies, we demonstrated barriers to HIV testing among Latinx in Baltimore include HIV stigma, cultural/linguistic discordance, uninsured status, and fear of deportation. From July to December 2018, we implemented the Solo Se Vive Una Vez (You Only Live Once) campaign partnering with BCHD to increase HIV testing among Latinx in Baltimore by addressing these barriers. The purpose of the present study was to assess reach of the campaign and its impact on people's decision to get tested.

Methods: The campaign included a website (solovive.org) and advertisements on social media, buses, billboards, radio, events, and dating apps. We conducted cross sectional surveys of Latinx adults obtaining HIV testing at the BCHD clinic and outreach before (n=78) and after (n=315) the campaign launch. Surveys assessed demographics, HIV testing history, exposure to the campaign, and influence of the campaign on the decision to get tested. Sexual risk behaviors and PrEP information were obtained from BCHD medical records by trained research assistants. Characteristics of the population exposed to the campaign versus not exposed were compared using t-test and chi squared analyses.

Results: 34% of respondents surveyed after campaign launch reported exposure to the Solo Se Vive Una Vez campaign, compared to 0% in the baseline surveys. 86% of those exposed reported that the campaign positively influenced their decision to get tested. Respondents with campaign exposure had significantly higher numbers of sexual partners and rates of paying drugs/money for sex ($p<0.05$). The website has had 9,899 visitors, and 130 users requested testing through the website. 89% of Latinx surveyed never heard of PrEP and received PrEP information.

Conclusions: Solo Se Vive Una Vez is Baltimore's first Spanish-language public health campaign promoting HIV screening. It achieved comparable exposure to other campaigns addressing HIV testing in Latinx. The campaign positively influenced the majority of testers exposed to it to get tested, including Latinx with high risk sexual behaviors. BCHD data is currently being tabulated to measure change in testing rates.

**2019 Mulholland Mohler Resident Meeting**

**AMERICAN COLLEGE OF PHYSICIANS**

**MARYLAND REGION ANNUAL ASSOCIATES MEETING MAY 9, 2019**

**Please check one. First author is:**
**(X) RESIDENT**
Please check only one. Abstract is submitted to.
**( ) Poster**
**( ) Oral**
**(X) Either**
**General Classification:**
**( ) Clinical Vignette**
**(X) Research Competition**
- **( ) Basic Science**
- **(X) Evidence based medicine review**
- **( ) Quality/Safety**
- **( ) Clinical Research**

**Indicate your participation in research process (4 sentences or less)**: Literature search and looking for the included clinical trials, collecting and analyzing the data, and organizing the tables.

**First Author Information:**

**Name:** Ahmad Al-Abdouh, MD

**Institution:** St Agnes Healthcare

**Daytime Phone:** 443-882-9334

## Aspirin efficacy in primary prevention: A meta-analysis of randomized controlled trials

**Introduction**: The role of aspirin in primary prevention remains controversial. We have conducted a meta-analysis of all randomized controlled trials (RCTs) to evaluate the role of aspirin in primary prevention.
**Methods**: Literature search in Pubmed, MEDLINE, and Cochrane Library for related RCTs. All-cause mortality was the primary endpoint. Secondary endpoints were major adverse cardiovascular events (MACE), myocardial infarction (MI), cardiovascular mortality, cerebrovascular events, and bleeding events. We used a random effects model to report the risk ratios (RRs) with 95% confidence intervals (CIs).
**Results**: This analysis included 17 RCTs (164,862 patients; 83,309 received aspirin and 81,744 received placebo). This study did not demonstrate significant reduction in all-cause mortality for patients treated with aspirin when compared with placebo (RR 0.97; 95%CI 0.93-1.01; P=0.13). Sensitivity analysis by excluding healthy elderly (≥65) showed significant reductions of all-cause mortality in the aspirin-treated patients (RR 0.94; 95%CI 0.90-0.99; P=0.01). There were no significant differences between both groups in term of cardiovascular mortality and cerebrovascular events (P>0.05). However, aspirin-treated patients significantly reduced MACE and MI (RR 0.89; 95%CI 0.85-0.93; P<0.001 and RR 0.88; 95%CI 0.78-0.98; P=0.02, respectively), respectively. On the contrary, aspirin was associated with significantly higher incidence of bleeding, including major and intracranial bleeding (P<0.001).
**Conclusions**: Aspirin use in primary prevention has led to lower incidence of MACE and MI without significantly effecting cerebrovascular events. In contrast, aspirin was associated with higher bleeding risk. The decision regarding aspirin for primary prevention should be thoroughly discussed with patients regarding the risk of cardiovascular disease and bleeding risk.

**Co-Author(s) Associates:**
Mahmoud Barbarawi, Babikir Kheiri, Yazan Zayed, Inderdeep Gakhal, Owais Barbarawi, Laith Rashdan, Ghassan Bachuwa, Mohammad Luay Alkotob

**Program Director's Name:** Sapna Kuehl, MD, F.A.C.P

**AMERICAN COLLEGE OF PHYSICIANS**

**MARYLAND REGION ANNUAL ASSOCIATES MEETING MAY 9, 2019**

**Please check one. First author is:**
**( X ) RESIDENT**
Please check only one. Abstract is submitted to.
**( ) Poster**
**( ) Oral**
**(X) Either**
**General Classification:**
**( ) Clinical Vignette**
**(X) Research Competition**
- **( ) Basic Science**
- **( ) Evidence based medicine review**
- **( ) Quality/Safety**
- **(X) Clinical Research**

**Indicate your participation in research process (4 sentences or less):**

**First Author Information:**

**Name: Dina Ioffe**

**Institution:**
University of Maryland Medical Center and Baltimore VA Medical Center

**Daytime Phone:** 410-328-7567

**OLIGOCLONAL BANDING AND SURVIVAL IN PATIENTS RECEIVING TCR INFUSIONS FOLLOWING ASCT.** **Dina Ioffe, MD, Olga Goloubeva, PhD, MSc, Aaron Rapoport, MD. University of Maryland Medical Center and Baltimore VA Medical Center, Baltimore, MD.**

**Background:** Genetically modified T cell receptors (TCRs) have been shown to be a potential target for immunotherapy in cancer patients. Patients in phase I/II clinical trials who received modified TCRs with high-affinity to myeloma markers following autologous stem cell transplantation (ASCT) demonstrated early, rapid, and robust T cell recovery. We hypothesized that these patients would have a higher frequency of oligoclonal banding (OCB), in which patients express immunoglobulins distinct from their original myeloma M protein. OCB has been associated with early lymphocyte recovery following ASCT and has been shown improve disease-free (DFS) and overall survival (OS). We also hypothesized that study patients would have better DFS compared to patients receiving standard ASCT.

**Methods:** Our study group consisted of 60 patients who received co-stimulated T cells 2 days after ASCT. The control group consisted of 203 patients who received contemporaneous standard of care ASCTs. Through retrospective chart review, we compiled data on patients' race, gender, age at transplant, presence and duration of OCB, time from transplant to OCB, risk and stage of disease at diagnosis, disease-free survival (DFS), and overall survival (OS). Length of follow-up was up to 12 years with data collection from 1/30/2007 to 2/1/2019.

**Results:** Statistical analysis did not reveal a significant difference between the study and control groups based on demographic and clinical characteristics. Univariable Cox regression revealed no statistically significant difference between the groups in OCB or in DFS. Although the multivariable Cox regression (Kaplan-Meier curves) failed to show a statistically significant difference in DFS or OS, hazard ratios showed a trend towards worse OS in the study group as compared to the control (HR 1.48).

**Discussion:** While initial study results showed a rapid immune response in patients who received TCR infusion post ASCT, our data showed that this did not translate to more robust immune reconstitution (as demonstrated by OCB), or improved DFS or OS. This may demonstrate that the studies' gene modification targets are not clinically useful. While these TCR targets did not demonstrate improved survival or immune reconstitution, they remain an important target for immunotherapy in this patient population that needs further exploration.

**Co-Author(s) Associates: Aaron Rapoport, MD, Olga Goloubeva, PhD, MSc**

---

**Program Director's Name: Susan D. Wolfsthal**

**(indicating review of abstract)**

**ABSTRACT FORM: Must be at least 10-point font. A sharp typeface will help reproduction. Be sure to single-space and STAY WITHIN THE BORDERS!**