



***Charles R. Drew University of  
Medicine and Science***  
***CDU/ UCLA Medical Education Program***

***The Medical Student Research  
Thesis Program (MSRTP)***

**Class of 2014  
Medical Student Research Colloquium**

***Current Research in  
Health Disparities***

**Wednesday, March 26, 2014  
8:30 a. m. to 5 p. m.**

**Keck Auditorium  
Charles R. Drew University  
of Medicine and Science  
1731 East 120th Street  
Los Angeles, CA 90059**



# **AGENDA**

## **MORNING SESSION**

7:30 – 8:30 a. m. *Continental Breakfast in the Lobby of the Keck Building*

8:30 a. m. *Call to Order*

Shahrzad Bazargan-Hejazi, PhD

*Chair, CDU/UCLA Medical Student Research Thesis Program (MSRTP)*

8:35 a. m. *Opening Remarks*

Daphne Calmes, MD

*Interim Dean, College of Medicine, Charles R. Drew University of Medicine and Science*

8:40 a. m. *University Welcome*

David Carlisle, MD, PhD

*President, Charles R. Drew University of Medicine and Science*

## **MODERATOR OF STUDENT PRESENTATIONS**

Stanley Hsia, MD

*Associate Professor of Medicine*

*Charles R. Drew University of Medicine and Science*

## **PANEL OF JUDGES**

Michele A. Basso, PhD

*Professor of Medicine in the Department of Psychiatry & Biobehavioral Sciences and Neurobiology, UCLA*

Lawrence “Hy” Doyle, EdD

*Executive Director, UCLA PRIME*

Lilian Gelberg, MD

*Professor of Family Medicine in the Department of Family Medicine, David Geffen School of Medicine at UCLA and Fielding School of Public Health*

LuAnn Wilkerson, EdD

*Senior Associate Dean for Medical Education, David Geffen School of Medicine at UCLA*

Sharon Younkin, PhD

*Medical Educator, David Geffen School of Medicine, UCLA*

## **STUDENT PRESENTATIONS**

### **(MORNING SESSION)**

8:50 a. m.    **BRADEN MOGLER**                      Mentor: *Martin Shapiro* (UCLA)  
The Effect of a Behavioral Intervention to Control Hypertension on Secondary Cardiovascular Risk Factors among Low-Income Patients (*Clinical Research*)

9:00 a. m.    **JONATHAN VELASQUEZ**    Mentor: *Shahrazad Bazargan* (CDU)  
The Prevalence of Depression Symptoms in Californian Adolescents Aged 12-17 and Weight Status as a Risk Factor (*Basic Science*)

9:10 a. m.    **SIRE SOW**    Mentor: *Susan Meffert* (UCSF)  
How Do Refugees and Asylum Seekers in Senegal Perceive the Mental Health of Their Communities? (*Public Health*)

9:20 a. m.    **ETSEMAYE AGONAFER**    Mentor: *Sheba George* (CDU)  
Case Study: A Qualitative Analysis of the Rise and Fall of King-Drew Medical Center (KDMC) (*Public Health*)

9:30 a. m.    **CHIRAG PATEL**    Mentor: *Matthew Ho* (CDU)  
Pelvic Floor Disorders in Women, Osteoporosis, and Vitamin D Status (*Public Health*)

9:40 a. m.    **ALEJANDRO PEREZ**    Mentor: *David Martins* (CDU)  
Fruit and Vegetable Consumption and Chronic Kidney Disease (*Public Health*)

9:50 a. m.    **SHELLEY HAN**    Mentor: *Mohsen Bazargan* (CDU)  
Inappropriate Medication Use among Elderly African Americans (*Basic Science*)

10:00 a. m.    **ROGELIO PIÑÓN GUTIERREZ**    Mentor: *Indrani Sinha-Hikim* (CDU)  
Role of Oxidative Stress and Caspase-2 in Hepatocyte Apoptosis and Development of Metabolic Disorders in Aging (*Basic Science*)

10:10 a. m.    **OLUYEMI AJIROTUTU**    Mentor: *Karen Coleman* (Kaiser Permanente)  
The Kaiser Permanente Southern California Healthy Eating Active Living Adolescent Obesity Clinic: Evaluating the Efficacy of a Patient-Centered Lifestyle Modification Program for Obese Adolescents (*Basic Science*)

### **MORNING BREAK (20 MINUTES)**

***Reconvene at 10:40 a. m.***

**STUDENT PRESENTATIONS**  
**(MORNING SESSION, CONTINUED)**

10:40 a. m. **ERICA DAVENPORT**                      Mentor: *Dotun Ogunyemi* (UCLA)  
Are There Independent Associations Between Gestational Diabetes and Heavy Metals and  
Industrial Chemicals Exposure? (*Clinical Research*)

10:50 a. m. **BRENDA BARAJAS**                      Mentor: *Efrain Talamantes* (UCLA)  
Health Care Visits and Health Risk Behaviors among Adolescents (*Public Health*)

11:00 a. m. **JOHN FENG**                                      Mentor: *Gilberto Granados* (UCLA)  
Factors Influencing Day Laborer Self-Reported Health (*Public Health*)

11:10 a. m. **KRISTINA LEE**                                      Mentor: *Sammy Saab* (UCLA)  
Kidney Transplantation Threshold in Patients with Hepatitis C: A Decision Analysis Model  
(*Clinical Research*)

11:20 a. m. **VICTOR VELASCO**                      Mentor: *Sanaz Memarzadeh* (UCLA)  
Tubal Ligation Decreases Progenitor Cells and Proliferation in Human Fallopian Epithelium  
(*Basic Science*)

11:30 a. m. **JULIEN NGUYEN**                      Mentor: *Steven Lee* (UCLA)  
Determining Socioeconomic and Racial/Ethnic Disparities in Bicycle Helmet Use and  
Outcomes amongst Adults and Children in Bicycle Accidents (*Clinical Research*)

11:40 a. m. **BRYAN LOPEZ**                                      Mentor: *Shahrzad Bazargan* (CDU)  
What Factors Predict the Loss of Inhibitions that Lead to Sexual Activity among Medical  
Students? (*Clinical Research*)

**LUNCH BREAK**  
***Reconvene at 1:10 p. m.***

***Please proceed to the Student Lounge of the adjacent Cobb Administration  
Building, located on East 118<sup>th</sup> Street***

# AFTERNOON SESSION

## MODERATOR OF STUDENT PRESENTATIONS

David Hindman, PhD

*Assistant Professor of Medicine*

*Charles R. Drew University of Medicine and Science*

## PANEL OF JUDGES

Michele A. Basso, PhD

*Professor of Medicine in the Department of Psychiatry & Biobehavioral Sciences and Neurobiology, UCLA*

Lawrence “Hy” Doyle, EdD

*Executive Director, UCLA PRIME*

Pamela Krochalk, DrPH

*Chair, Division of Health Sciences in the College of Health, Human Services and Nursing, California State University, Dominguez Hills*

Rose Maly, MD

*Associate Professor of Family Medicine in the Department of Medicine, David Geffen School of Medicine at UCLA*

Gerardo Moreno, MD

*Assistant Clinical Professor of Family Medicine in the Department of Medicine, David Geffen School of Medicine at UCLA*

Rosemary Veniegas, PhD

*Program Officer, Health Care, California Community Foundation*

LuAnn Wilkerson, EdD

*Senior Associate Dean for Medical Education, David Geffen School of Medicine at UCLA*

Sharon Younkin, PhD

*Medical Educator, David Geffen School of Medicine, UCLA*

## **STUDENT PRESENTATIONS**

### **(AFTERNOON SESSION)**

1:10 p. m.   **JESSICA HARTNETT**           Mentor: *Kenneth Lewis* (LA DHS)  
Role of Acculturation in Determining Pre-Operative Anesthesia-Related Concerns (*Clinical Research*)

1:20 p. m.   **MAYA BENITEZ**               Mentor: *Shahrzad Bazargan* (CDU)  
What Barriers Limit African-Americans Participation in Clinical Cancer Trials? (*Clinical Research*)

1:30 p. m.   **TABITHA HERZOG**               Mentor: *Jeneita Bell* (CDC)  
Nonfatal Playground-Related Traumatic Brain Injuries among Persons Aged 19 Years Admitted to United States Emergency Departments, 2001-2011 (*Public Health*)

1:40 p. m.   **NATHALIE FERNANDO**       Mentor: *Ganga Chandramohan* (CDU)  
Secondary Analysis of NHANES Data Focusing on Risk Factors for Obesity and Activity Levels by Race – Part I (*Public Health*)

1:50 p. m.   **RAUL HERNANDEZ**               Mentor: *Ganga Chandramohan* (CDU)  
Secondary Analysis of NHANES Data Focusing on Risk Factors for Obesity and Activity by Race – Part II (*Public Health*)

2:00 p. m.   **JOSEPHINE AGUILAR-JAKTHONG**   Mentor: *Jiaoti Huang* (UCLA)  
Can The Difference in Tumor Biology in Prostate Cancers of African American Males Compared to Caucasian Males Explain the Discrepancy in Prognosis? (*Basic Science*)

2:10 p. m.   **CAROLINE KOVALESKI**       Mentor: *Mary Marfisee* (CDU)  
Would Improvement in Health Information Intake Forms Improve Patient and Provider Satisfaction in a Low Resource Setting Community Clinic? (*Clinical Research*)

**AFTERNOON BREAK (20 MINUTES)**

***Reconvene at 2:30 p. m.***



# MODERATORS



## **David Hindman, PhD**

Dr. Hindman is Assistant Professor in the Department of Family Medicine at Charles R. Drew University and Director of Behavior Health Services in the Department of Health Services at Hubert H. Humphrey Comprehensive Care Center in Los Angeles. He is an officer of the California Psychological Association in the Division of Education and Training, and has been involved in residency and training programs since 2004.

## **Stanley Hsia, MD**



Dr. Hsia is an Associate Professor of Medicine at Charles R. Drew University of Medicine and Science. He is also a Health Sciences Associate Clinical Professor with the David Geffen School of Medicine at UCLA and a consultant endocrinologist for the Diabetes Clinic at the Martin Luther King Jr. Multi-Service Ambulatory Care Center. He has served as a program director for residents and endocrinology fellows, and as a clerkship director for CDU/UCLA medical students. Dr. Hsia has been conducting clinical research over the past 13 years, including both industry and investigator-initiated trials, funded by grants from National Institutes of Health and the American Diabetes Association. He has also published original research, book chapters, and review papers on the management of lipid disorders, insulin resistance, and diabetes mellitus.

# JUDGES



**Michele A. Basso, PhD**

Dr. Basso is the director of Fuster Laboratory of Cognitive Neuroscience at UCLA's Semel Institute for Neuroscience and Human Behavior. The laboratory conducts research focusing on basic questions of science that may have direct clinical impact on the treatment of certain diseases, including Parkinson's. One of her current research projects examines the role of the basal ganglia and the superior colliculus in saccadic (quick and simultaneous) eye movement decision-making.



**Lawrence "Hy" Doyle**

Lawrence "Hy" Doyle is currently the Executive Director of the Program in Medical Education (PRIME) at the David Geffen School of Medicine at University of California, Los Angeles (UCLA). Dr. Doyle also provides guidance to disadvantaged students through UCLA's Summer Medical and Dental Program and the UCLA Hispanic Center of Excellence.



**Lilian Gelberg, MD**

Dr. Gelberg is Professor of Family Medicine at the David Geffen School of Medicine at UCLA, Fielding School of Public Health, and at the Office of Healthcare Transformation and Innovation of the Veterans Affairs (VA) Greater Los Angeles Healthcare System. She is also a member of the Institute of Medicine of the National Academy of Sciences. Dr. Gelberg is a health services researcher and a family physician who conducts community-academic partnered research on the health, access to care, quality of care, and health promotion/disease prevention of homeless and other vulnerable populations

## **Pamela Krochalk, DrPH**



Dr. Krochalk received her Doctor of Public Health Degree from the UCLA School of Public Health and has an extensive background in the social and behavioral sciences. She is currently Professor and Chair of the Division of Health Sciences at California State University, Dominguez Hills. Her teaching areas include public health, research methods, program evaluation, epidemiology, medical sociology, health behavior, health education, multicultural health, and health communication.

## **Rose Maly, MD**



Dr. Maly is Associate Professor of Family Medicine at the David Geffen School of Medicine at UCLA, and a family physician and geriatrician. Her research interests include health care disparities and focus on patient-physician communication, quality of care, and improving quality-of-life among low income women with breast cancer.

## **Gerardo Moreno, MD**



Dr. Moreno is Assistant Clinical Professor in Family Medicine at UCLA. He received his medical degree in 2004, and completed his post-doctoral clinical residency training in Family Medicine at the University of California San Francisco. He holds a Master of Science in Health Services from the UCLA School of Public Health, and completed a research fellowship in the Robert Wood Johnson (RWJ) Foundation Clinical Scholars Program at UCLA.

## **Rosemary Veniegas, PhD**



Dr. Veniegas is the California Community Foundation (CCF) Program Officer for health care. Before joining CCF, Dr. Veniegas was Assistant Research Psychologist at the Center for Behavioral and Addiction Medicine in the UCLA Department of Family Medicine. Her work examined the implementation and evaluation of evidence-based programs and practices in community and public health settings.



## **LuAnn Wilkerson, EdD**

Dr. Wilkerson is currently Senior Associate Dean for Medical Education at the Geffen School of Medicine at UCLA. She is charged with oversight of the full range of medical student curricular programs at the University. She is a Professor of Medicine with active research projects in problem-based learning, ambulatory teaching, and nutrition education. She also serves as Program Director for the UCLA Fellowship in Medical Education.



## **Sharon Younkin, PhD**

Dr. Younkin received her Ph.D. in Counseling Psychology from The Ohio State University in 1992. She currently serves as a medical education consultant, working on research and development of the David Geffen School of Medicine's education initiatives, and program development in the areas of well-being and resiliency for medical students. In 2002, Dr. Younkin created the Office of Community Service Programs at the University of Wisconsin School of Medicine and Public Health, serving as Director until 2012.

***CLASS OF 2014***

**Students and Abstracts**

**MEDICAL STUDENT RESEARCH COLLOQUIUM**

***Charles R. Drew University of Medicine and Science***

**March 26, 2014**



## **Etsemaye Agonafer**

Mentor: Sheba George, PhD<sup>1</sup>

*Case Study: A Qualitative Analysis of the Rise and Fall of King-Drew Medical Center (KDMC)*

<sup>1</sup>Charles R. Drew University of Medicine and Science

**Background:** Safety net systems (SNS) are perpetually challenged to fulfill the mission of caring for underserved populations while maintaining competitiveness despite having limited resources. The Patient Protection and Affordable Care Act (ACA) further threatens the viability of SNS as they face a competitive market for newly insured patients while still caring for the more than 23 million uninsured people. SNS will need to improve their quality of health care provision in order to increase competitiveness and ensure sustainability. **Objectives:** To use KDMC to examine the factors that led to a SNS closure and to identify strengths/weaknesses of care provision in SNS settings. We attempt to explore and to clarify the often contested history of KDMC and its care provision in order to develop recommendations for an effective quality of care infrastructure that can inform the planned reopening of this hospital and other similar SNS in urban underserved communities. **Methods:** A qualitative case study using a two-pronged modified Grounded Theory approach including content analysis of archival historical documents and semi-structured in-depth individual interviews with a range of stakeholders associated with the hospital. **Results:** Though the closure of KDMC was multifaceted, our findings suggest that organizational structure and leadership challenges were major contributors to its inability to comply with accreditation standards. Despite the loss of accreditation and media's portrayal of poor quality of care, the hospital history and service mission attracted committed care-providers and sustained community loyalty. **Conclusion:** Recommendations that may help improve quality of care at the reopening of the hospital and other similar SNS include: 1) a careful examination and refinement of organizational infrastructure, 2) an emphasis on building sustainable partnerships, 3) incorporating multi-stakeholder perspectives into the creation and development of governance structures and 4) fostering patient loyalty, care-provider commitment and community engagement through a focus on the service mission and patient-centered care.



## **Josephine Aguilar-Jakthong**

Mentor: Jiaoti Huang, MD, PhD<sup>1</sup>

*Can The Difference in Tumor Biology in Prostate Cancers of African American Males Compared to Caucasian Males Explain the Discrepancy in Prognosis?*

<sup>1</sup>University of California, Los Angeles

**Introduction:** Prostate cancer is the second leading cause of cancer death in males, and African Americans have a 1.6 times higher incidence. The goal of our study is to explore the tumor biology of prostate cancer in African American men compared to Caucasian men, and investigate whether genes that have been implicated in prostate cancer progression, and metastasis are significantly expressed in African American men and if this correlation can be significantly attributed to prognosis. **Materials and Methods:** Retrospective immunohistochemical analysis of ~350 adult male patients, 30% who are of African American descent and the remainder Caucasian, and a small population of Asian decent (<2%) with clinically localized prostate cancer who have undergone radical prostatectomy at an equal access facility VA Greater Los Angeles Healthcare System. **Results:** Tissue microarray analyses of N-Cadherin and C-Jun expression in prostate cancer correlated with X to biochemical recurrence, X time to clinical recurrence, and X overall survival. An H-score of X, X, and X was observed in prostate cancer, high-grade prostatic intraepithelial neoplasia (HGPIN), and benign prostatic tissue respectively. X% African American men demonstrated an H-score greater than X compared to Caucasian men in N-cadherin expression, and X% African American men demonstrated an H-score greater than X compared to Caucasian men in C-jun expression. **Conclusion:** If an X of prostate tissue expression of N-cadherin and/or C-Jun is observed it may be used as a potential candidate biomarker and as molecular therapy in the more aggressive prostate cancer seen in African American men.



## **Oluyemi Ajirotutu**

Mentor: Karen Coleman, MD<sup>1</sup>

*The Kaiser Permanente Southern California Healthy Eating Active Living Adolescent Obesity Clinic: Evaluating the Efficacy of a Patient-Centered Lifestyle Modification Program for Obese Adolescents*

<sup>1</sup>Kaiser Permanente

**Background:** Obesity in the pediatric population has more than tripled during the past few decades, and there is an increased risk of comorbid chronic conditions amongst pediatric patients. The Kaiser Permanente Healthy Eating Active Living (HEAL) Clinic is a multi-disciplinary clinic that utilizes a 6-month patient-centered approach to address behavior change in obese adolescents. **Objective:** To evaluate whether obese adolescents participating in the HEAL clinic intervention have improved self-reported behaviors and mental health outcomes after the 6-month intervention. **Methods:** Setting: Kaiser Permanente Los Angeles Medical Center. **Study Design:** Retrospective cohort study of adolescents at or above the 85th BMI percentile who completed the 6-month clinic intervention between October 2010 and December 2013. A total of 304 adolescents visited the clinic during that period with only 14% (n=44) completing the intervention. **Results:** Pre- and post-intervention survey data suggest that total nutrition barriers decreased (p=0.002), consumption of 1 serving per day of vegetables (in the last 30 days) increased (p<.01), and consumption of fruit juice either never or almost never (in the last 30 days) increased (p<.001) after the intervention. There was no significant change in PHQ-9 scores, total physical activity barriers, quantity of TV watching or exercise, or consumption of other foods/beverages. **Conclusion:** Greater patient retention throughout the clinic intervention is necessary in order to garner a larger sample size and better analyze the effects of the clinic intervention. The 6-month intervention may have statistically significant positive impact on healthy outcomes. However, the self-reported measures alone incorporate social desirability bias, so utilization of objective health indicators such as weight and blood sugar is needed to assess the efficacy of the clinic intervention.



## **Brenda Barajas**

Mentors: Efrain Talamantes, MD<sup>1</sup>, Deyu Pan, MS<sup>2</sup>  
*Health Care Visits and Health Risk Behaviors among  
Adolescents*

<sup>1</sup>University of California, Los Angeles and U.S. Department of Veterans Affairs; <sup>2</sup>Charles R. Drew University of Medicine and Science

**Background:** Practice guidelines recommend that adolescents receive screening and counseling on health-promoting and risk-reducing behaviors during annual well visits, with evidence supporting reduction in smoking. There is limited research on the long-term effect of provider screening and counseling. **Objectives:** Evaluate if time since physical exam has an effect on adolescent smoking behavior. **Methods:** Cross-sectional analysis of adolescents aged 12-17 years who responded to the California Health Interview Survey in 2003, 2005, 2007, 2009, and 2011-12. Trend in smoking was analyzed with Cochran-Armitage Test. The relation of specific variables to smoker status was analyzed by Chi-Square test and Logistic Regression. **Results:** Declining trend in smoking from 5.99%, 5.96%, 4.87%, 4.26% to 3.25% of total respondents each year ( $p < 0.001$ ). Adolescents who had a physical exam within the past year were less likely to have smoked in the past 30 days when compared to adolescents who had a physical exam more than two years ago or never. Adolescents who had a physical exam within the last 6 months were less likely to have smoked in the past 30 days than those who had a physical exam within the last 6-12 months on bivariate analysis. Adolescents who identified a “usual source of care” were less likely to smoke than those who did not on multivariate analysis. **Conclusions:** This study supports that the adolescent wellness visit is a critical opportunity to integrate prevention into clinical encounters. The effect illustrated by the data suggests there may be a critical timeframe in which the effectiveness of counseling interventions is maximized, strongly supporting reevaluation of the “annual well child visit” for adolescents. Further investigation is necessary to determine if this effect is also seen for other behaviors that account for the majority of morbidity and mortality among adolescents, mainly risky sexual activity and substance use.



## Maya Benitez

Mentors: Shahrzad Bazargan-Hejazi PhD<sup>1,2</sup>, Stacey Teruya<sup>1</sup>

*What Barriers Limit African-Americans Participation in Clinical Cancer Trials?*

<sup>1</sup>Charles R. Drew University of Medicine and Science; <sup>2</sup>David Geffen School of Medicine at UCLA

**Objective:** There is a paucity of systematic reviews on barriers to African American participation in clinical cancer trials. This study aims to conduct a systematic review, and synthesize and contrast findings on the perspectives of African Americans in participating in cancer-related clinical trials. **Methods:** We conducted a systematic literature review of *PubMed* in January 2013. MESH keywords used include “Patient Participation AND Clinical Trials as Topic AND African-Americans.” This query returned 34 articles, of which 19 met the following inclusion criteria: a) study published in English, b) study conducted in the U.S., c) study published between 2004 and 2014, d) African-Americans were representative participants, and e) study addressed barriers to African-American participation in clinical trials. **Results:** Most of the 19 included studies were qualitative, and confirmed mistrust as a major barrier to African-American participation in clinical trials. Other factors include a) misconceptions, b) concern about future consequences, and c) convenience (transportation, time, financial). Limitations to these studies include a) the selection of self-reported African-Americans, b) participation was voluntary (selection bias) and c) participants were recruited from databases of those currently or previously enrolled in clinical trials d.) small sample sizes, and e.) only a few studies focused on African-American participation in clinical cancer trials. **Conclusions:** The literature reveals a need for patient-centered outcomes research that allows African-Americans to voice their concerns, fears, and perceptions about cancer-related clinical trials. This enables and empowers them to make informed decisions about participating in such studies.



## Erica Davenport

Mentor: Dotun Ogunyemi, MD<sup>1,2</sup>

*Are There Independent Associations Between Gestational Diabetes and Heavy Metals and Industrial Chemicals Exposure?*

<sup>1</sup>University of California, Los Angeles; <sup>2</sup>Oakland University William Beaumont School of Medicine

**Background:** Gestational diabetes (GDM) affects nearly 4% of all US pregnancies with major long-term complications affecting the fetus and mother. Women diagnosed with GDM have an associated 30–60% increased risk of developing type 2 diabetes with an additional intergenerational risk to the fetus. Recent studies have investigated environmental maternal exposures with the development of gestational diabetes to identify other potential risk factors and improve prevention efforts. Heavy metals include arsenic, lead, and cobalt, which mainly affect the reproductive system are especially toxic to a growing fetus. Bisphenol A (BPA) is a widespread endocrine-disrupting chemical used as the base compound in the manufacture of polycarbonate plastics. Evaluating maternal environmental exposures will help determine if women with GDM and toxin exposure is related to disease or may lead to hypothesis that may link diabetes with toxins.

**Objective:** Our aim was to determine if women who were diagnosed with GDM had a unique environmental exposure profile. We hypothesized that women with a history of GDM will have elevated levels of heavy metals, industrial chemicals, higher mean blood pressure and body mass index (BMI) compared to women without a history of gestational diabetes. **Methods:** This cross-sectional study used data from National Health and Nutrition Examination survey (NHANES) for the years 2000–2010. Pearson correlation, student T tests, chi-square analysis, and Levene's test was used ( $p$  value  $< 0.01$ ). **Results:** Women with GDM history had significantly higher body mass index, waist circumference, diastolic blood pressures, insulin, and glucose levels. Those with a history of GDM were also more likely to be Hispanic, married and have a larger household. Urine cobalt, lead, phthalate ester, and an endocrine disruptor levels were significantly elevated with GDM while free thyroxine levels were significantly decreased.

**Conclusion:** Women who self-reported a history of GDM compared to controls have significant independent associations with elevated urinary cobalt and lead levels but decreased free thyroxine levels.



## John Feng

Mentors: Gilbert Granados, MD<sup>1,2,3</sup>, Jyoti Puvvula, MD<sup>1,2,3</sup>, Shahrzad Bazargan-Hejazi, PhD<sup>1</sup>

*Factors Influencing Day Laborer Self-Reported Health*

<sup>1</sup>Charles R. Drew University of Medicine and Science; <sup>2</sup>David Geffen School of Medicine at UCLA; <sup>3</sup>Harbor-UCLA Medical Center

**Background:** Observational studies have shown that higher education level correlates with lower mortality. We are testing if higher levels of education among day laborers will significantly correlate with improved self-reported health status. **Methods:** This is a retrospective study using responses to the Day Laborer Health Needs Assessment Survey collected from 2010 through 2013. The 92-question Day Laborer Health Needs Assessment Survey consists of questions from the National Health Interview Survey and the Field Institute Survey which have been tested for accuracy and validity in both English and Spanish. Questions of interest to our study are “Would you say that in general your health is excellent, very good, good, fair or poor?”, “Thinking about your physical health, which includes physical illness and injury, for how many days during the past 30 days was your physical health not good?”, “Overall, how easy or difficult is it for you to get medical care when you need it? Would you say it is very difficult, somewhat difficult, somewhat easy, or very easy?” and “What is the highest level of school you have completed or the highest degree you have received?” STATA was used for statistical analysis. **Results:** A total of 312 surveys were collected during the time period. There was a significant positive association ( $p < 0.05$ ) between day laborers rating their health as “fair” or “poor” and whether or not they attended college. Surprisingly, there was an inverse relationship between education level and ease of obtaining medical care ( $P < 0.05$ ). The relationship between self-rated health and ease of obtaining medical care was non-significant ( $P < 0.2$ ). **Conclusion:** The positive relationship between education level and health applies to day laborers. In day laborers, there is no significant correlation between access to care and self-reported health.



## Nathalie Fernando

Mentors: Ganga Chandramohan, MD<sup>1</sup>, Shahrzad Bazargan PhD<sup>1,2</sup>, Dulcie Kermah MPH<sup>1</sup>

*Secondary Analysis of NHANES Data Focusing on Risk Factors for Obesity and Activity Levels by Race*

<sup>1</sup>Charles R. Drew University of Medicine and Science, <sup>2</sup>David Geffen School of Medicine at UCLA

**Introduction:** One of the most important factors contributing to our national disease burden is obesity. Blacks and Hispanics, as well as those generally on the lower end of the socioeconomic spectrum, have significantly higher risk of becoming obese. Previous epidemiological studies have addressed the effects of behavior such as exercise on obesity rates, but such investigations are far from complete. Here, we will investigate interesting patterns relating to different levels of obesity and how certain lifestyle patterns may account for this trend when stratified by race. **Methods:** 2005-2006 Data National Health and Nutrition Examination Survey database was used to determine associations between Body Mass Index (BMI) and several lifestyle factors. A total of 1,675 adults between ages 18-30 years were assessed in the study. Activity factors were statistically analyzed to determine significant effects and correlations. Bivariate and multivariate analyses were performed. **Results:** Non-white populations had significantly higher rates of moderate obesity, though surprisingly, not extreme obesity. Several lifestyle factors were examined that may cause this pattern. In general, whites reported more vigorous activity, but non-whites had greater levels of transportation-related walking or bicycling. With regard to sedentary activity, white and non-white individuals reported similar amounts of computer time, but non-whites reported significantly higher amounts of watching television. Multivariate analysis revealed that only non-white race and no vigorous activity had increased odds of BMI >30. **Discussion:** As expected, non-white populations had higher obesity, but only for moderate obesity, not extreme obesity. This interesting observation indicates that a different set of factors may be influencing the obesity patterns of non-whites. While non-whites reported lower income and overall activity levels, non-whites also had higher levels of transportation-based exercise. This additional exercise may account for the increase among non-whites in only moderate obesity. Additionally, the differences in sedentary activity are of potential interest. Non-whites had total higher levels of sedentary activity than whites, but this was accounted entirely by television time, as both groups had similar amounts of computer time. By identifying the factors associated with this difference, possible interventional strategies may be developed to help reduce the television sedentary time in non-whites, and thus, their incidence of obesity.



## Shelley Han

Mentors: Hamed Yazdanshenas MD<sup>1</sup>, Mohsen Bazargan PhD<sup>1,2</sup>

### *Inappropriate Medication Use among Elderly African Americans*

<sup>1</sup>Charles R. Drew University of Medicine and Science; <sup>2</sup>David Geffen School of Medicine at UCLA

**Background:** Numerous studies have documented that potentially inappropriate medication (PIM) use is highly prevalent among the older population. However, there has been very little attention given to inappropriate medication use among elderly African-Americans. **Objectives:** The goal of this study is to identify correlates and prevalence of PIM use among community-dwelling elderly African Americans. **Methods:** This cross-sectional study recruited 400 elderly African Americans from 16 churches located in South Los Angeles. Face-to-face surveys were conducted to obtain data pertaining to type, frequency, dosage, and indications of all medications used by participants. The latest Beers Criteria (2012) was employed to assess the use of PIM. **Results:** Almost 70% of participants used PIMs. More than one-third of participants were taking at least two PIMs. 27% of participants used at least one PIM that was classified as “Avoid” in Beers Criteria. 28% of participants had one and 25% had two or more possible severe drug-drug interactions. Significant correlations emerged between PIM use and number of chronic conditions; severity of pain; number of medications; medication duplications and drug-drug interactions. Finally, this study documented a higher rate of PIM use among underserved African-American elderly compared to their white counterparts. **Conclusions:** This study documents several trends: 1. A higher rate of PIM use among underserved African American elderly compared to their non African American counterparts. 2. Number of chronic medical conditions, number of medications used, medication duplications, drug-drug interactions and PIM use are all inter-related issues placing elderly African Americans at increased risk for various types of medication-related complications. These findings point to the need for multidisciplinary team programs consisting of primary and specialist physicians, pharmacists, nurses, and social workers to improve health outcomes, enhance quality of life, and reduce morbidity and mortality due to inappropriate medication use.



## Jessica Hartnett

Mentors: Kenneth Lewis, MD<sup>1</sup>, Shahrzad Bazargan-Hejazi, PhD<sup>2,3</sup>

### *Role of Acculturation in Determining Pre-Operative Anesthesia-Related Concerns*

<sup>1</sup>Martin Luther King Jr. Multi-Service Ambulatory Care Center,

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**Background:** Many patients are concerned about the complications of anesthesia, but may not feel comfortable addressing those concerns with their anesthesiologist. This study aims to first determine which general anesthesia complications, if any, pre-operative patients are most concerned about. Secondly, this study aims to determine if there is an association between patient's level of acculturation and the general anesthesia complications that patients are concerned about. **Methods:** This is an IRB (CDU/ACC) cross-sectional survey study. Patients were recruited using a study flyer at Martin Luther King Multi-service Ambulatory Care Center over the course of January 2014. Patients were Mexican American or of Mexican heritage, over age 18, and scheduled for a laparoscopic cholecystectomy. The questionnaire was self-administered, took 10-15 minutes, and composed of demographics, medical history, and the Acculturation Rating Scale for Mexican Americans II. Independent variable was level of acculturation. Dependent variables were complications of anesthesia. Data analysis was univariate and bivariate. **Results:** 65% of patients had an acculturation level of I (very Mexican oriented), 29% level II, and 6% level III. There were no patients with an acculturation level of IV or V (very assimilated; anglicized). 43% of patients were concerned about sore throat, 28% about nausea and vomiting, 21% about altered mental status, and 7% about damaged teeth. **Conclusions:** The majority of patients were of considered Mexican oriented. The top 3 complications that patients were concerned about were sore throat, nausea and vomiting, and altered mental status. Patients who were Mexican oriented tended to be concerned with sore throat and nausea and vomiting. Altered mental status was a concern across all levels of acculturation.



## **Raul Hernandez**

Mentors: Ganga Chandramohan, MD<sup>1</sup>, Shahrzad Bazargan PhD<sup>1,2</sup>, Dulcie Kermah, MPH<sup>1</sup>

*Secondary Analysis of NHANES Data Focusing on Risk Factors for Obesity and Activity Levels by Race*

<sup>1</sup>Charles R. Drew University of Medicine and Science, <sup>2</sup>David Geffen School of Medicine at UCLA

**Introduction:** One of the most important factors contributing to our national disease burden is obesity. Blacks and Hispanics, as well as those generally on the lower end of the socioeconomic spectrum, have significantly higher risk of becoming obese. Previous epidemiological studies have addressed the effects of behavior such as exercise on obesity rates, but such investigations are far from complete. Here, we will investigate interesting patterns relating to different levels of obesity and how certain lifestyle patterns may account for this trend when stratified by race. **Methods:** 2005-2006 Data National Health and Nutrition Examination Survey database was used to determine associations between Body Mass Index (BMI) and several lifestyle factors. A total of 1,675 adults between ages 18-30 years were assessed in the study. Activity factors were statistically analyzed to determine significant effects and correlations. Bivariate and multivariate analyses were performed. **Results:** Non-white populations had significantly higher rates of moderate obesity, though surprisingly, not extreme obesity. Several lifestyle factors were examined that may cause this pattern. In general, whites reported more vigorous activity, but non-whites had greater levels of transportation-related walking or bicycling. With regard to sedentary activity, white and non-white individuals reported similar amounts of computer time, but non-whites reported significantly higher amounts of watching television. Multivariate analysis revealed that only non-white race and no vigorous activity had increased odds of BMI >30. **Discussion:** As expected, non-white populations had higher obesity, but only for moderate obesity, not extreme obesity. This interesting observation indicates that a different set of factors may be influencing the obesity patterns of non-whites. While non-whites reported lower income and overall activity levels, non-whites also had higher levels of transportation-based exercise. This additional exercise may account for the increase among non-whites in only moderate obesity. Additionally, the differences in sedentary activity are of potential interest. Non-whites had total higher levels of sedentary activity than whites, but this was accounted entirely by television time, as both groups had similar amounts of computer time. By identifying the factors associated with this difference, possible interventional strategies may be developed to help reduce the television sedentary time in non-whites, and thus, their incidence of obesity.



## **Tabitha Herzog**

Mentor: Jeneita Bell, MD<sup>1</sup>

*Nonfatal Playground-Related Traumatic Brain Injuries among Persons Aged 19 Years Admitted to United States Emergency Departments, 2001-2011*

<sup>1</sup>Centers for Disease Control

**Background:** Playground-related traumatic brain injury (TBI) is a leading cause of sports and recreation-related TBI among persons aged  $\leq 19$  years. To date, no national study has been conducted to specifically describe the characteristics of persons who sustain playground-related TBIs and trends of this injury over time. We describe the epidemiology of playground-related TBI in order to guide public health prevention strategies. **Methods:** Data from the National Electronic Injury Surveillance System–All Injury Program (NEISS-AIP) was analyzed from 2001 to 2011 for persons aged  $\leq 19$  years who visited an emergency department (ED) for a TBI. A person was classified as having a playground-related TBI if it was sustained during playground activities, the primary body region injured was the head, and the principal diagnosis was designated as concussion or internal organ injury. Each playground-related TBI case was assigned a sample weight based on the inverse probability of selection in order to derive national estimates. Results: During 2001 to 2011, there were 216,984 ED visits for TBIs sustained among persons aged  $\leq 19$  years while on the playground. Of these, 58% were male and 42% were female. Additionally, the estimated number of playground-related TBIs treated in EDs increased 53% from 2001 to 2011. Monkey bars and swings were the equipment with the highest rates. Most persons were treated and released from the ED (95.8%), while 2.6% were hospitalized or transferred. **Conclusions:** The number of playground-related TBIs treated in U.S. EDs increased 53% from 2001 to 2011. Due to limitations of the NEISS-AIP, this observation may have resulted from an increase in incidence or an increase in awareness of TBI and concussion among the public. However, interventions targeting playground surfacing and improved adult supervision may remain key strategies in preventing playground-related TBI.



## Thanh Ho

Mentor: Francesco Celi, MD<sup>1</sup>

*Effects of Inflammation and Adiposity on Bone Density in Non-Elderly Adults*

<sup>1</sup>Virginia Commonwealth University

**Introduction:** Although epidemiologic data indicate that body mass is associated with reduced risk for fractures, obesity is a state of chronic inflammation and inflammatory mediators have in vitro deleterious effects on bone formation. However, it is unclear how inflammation contributes to bone density in healthy individuals with varying levels of adiposity. **Methods:** Study volunteers with body mass index (BMI) in the range of 19.0-45.0 kg/m<sup>2</sup> were recruited to undergo laboratory tests, anthropometric and body composition assessment. Diabetes mellitus, cardiovascular disease, or chronic use of medications was considered exclusion criteria for participation in the study. Fat mass and bone mineral density (BMD) were assessed with dual-energy X-ray absorptiometry (DXA). Subjects were men and premenopausal women between 25 to 45 years old. Linear regression was performed after assessing statistically significant Pearson correlations between bone density and measures of adiposity, adipokines, cytokines, and markers of inflammation. **Results:** Ninety-four participants age 36.3±6.0, of which 49 were female (52.1%), were studied. Mean weight was 90.0±21.5 kg, and fat mass was 33.4±15.2 kg. Mean BMI was 30.5±6.9 kg/m<sup>2</sup>; 69.1% were overweight or obese (BMI≥25 kg/m<sup>2</sup>). Trunk, pelvis, spine, and total BMD were significantly associated with multiple measures of adiposity (all P <0.05). Adiponectin levels correlated positively with total Z score (r=0.221, P<0.04). Conversely, C reactive protein (CRP) was inversely associated with total Z score (r = -0.208, P<0.05). With sex-adjusted total Z score, adiponectin and CRP maintained a significant association (positive and negative, respectively) independent of BMI or fat mass (all P<0.04). **Conclusion:** Our data indicate that in a population of otherwise healthy, non-elderly adults, the state of inflammation plays a role in the maintenance of bone density independent of the state of adiposity.



## **Caroline Kovaleski**

Mentor: Mary Marfisee, MD<sup>1,2</sup>, Senait Teklehaimanot, MPH<sup>1</sup>

*Would Improvement in Health Information Intake Forms Improve Patient and Provider Satisfaction in a Low Resource Setting Community Clinic?*

<sup>1</sup>Charles R. Drew University of Medicine and Science,

<sup>2</sup>University of California at Los Angeles

**Background:** In 1983, the UCLA School of Nursing Health Center at the Union Rescue Mission was established to provide free medical care for homeless individuals on Skid Row. Due to limited funding, the clinic functions with reduced staffing, therefore efficiency is vitally important. Evaluating perceptions of current patient intake forms and revising them to improve efficiency has potential to improve quality of care. **Objectives:** To evaluate patient and provider satisfaction with current intake forms, revise the form, and assess the level of improvement after revisions. **Methods:** A semi-structured, focus-group interview with 7 providers was conducted to assess perceptions of original forms and to elicit improvement suggestions. Based on interview responses, literature searches, and examples from outside clinics, revisions were made. We selected 25 patients to provide feedback on revised forms. We then conducted follow-up interviews with providers regarding changes made. **Analyses:** We used percentages and frequency distributions for categorical data and means/medians  $\pm$  standard deviations for quantitative data. We used the Wilcoxon signed rank test to compare results with respect to time to complete forms and satisfaction before and after form revisions. **Results:** Suggested changes to original forms included: larger, darker print, fewer questions, different question arrangement, and separate English and Spanish forms. Form revisions elicited a statistically significant change in provider satisfaction ( $Z=-2.414$ ,  $p=0.016$ ), patient satisfaction ( $Z=-2.709$ ,  $p=0.007$ ) and form completion time ( $Z=-3.357$ ,  $p=.001$ ). Median satisfaction for patients and providers (1-10 scale) increased from 8 and 7 with original intake forms to 9 and 9 for revised forms respectively. Median time to complete forms decreased from 8 minutes to 7 minutes post revision. Patients and providers were satisfied with revised forms with no suggested further changes. **Conclusion:** Revised forms increased patient and provider satisfaction, decreased completion time, and eliminated redundant questions.



## **Kristina Lee**

Mentor: Gina Choi, MD<sup>1</sup>, Shahrzad Bazargan-Hejazi, PhD<sup>1,2</sup>, Crystal Wu<sup>1</sup>, Sammy Saab, MD<sup>1</sup>

*Kidney Transplantation Threshold in Patients with Hepatitis C: A Decision Analysis Model*

<sup>1</sup>David Geffen School of Medicine at UCLA; <sup>2</sup>Charles R. Drew University of Medicine and Science

**Background:** It is well known that patients infected with hepatitis C virus (HCV) often also have end stage renal disease (ESRD). There is limited information on the prognosis of HCV patients with ESRD who remain on dialysis compared with those who receive kidney transplantation. At present, there are no standard guidelines for the permissible degree of liver fibrosis in patients with chronic HCV prohibiting cadaveric renal transplantation (CRT). Given the risk of liver decompensation and the scarcity of organs, many centers have adopted the policy of prohibiting CRT for ESRD in HCV patients with greater than stage 2 liver fibrosis. **Objectives:** Our aims were to compare the 5-year survival of three different management strategies in patients with ESRD and HCV and to determine if patients with stage 3 liver fibrosis from HCV who undergo CRT have improved survival compared with those remaining on hemodialysis (HD). **Methods:** A decision analysis model was constructed to compare 5-year survival using three different strategies: Strategy 1, patients remained on HD; Strategy 2, patients on HD or received CRT; Strategy 3, patients were first treated with antiviral therapy then either remained on HD or received CRT. A systematic review of the literature was performed to obtain the probabilities of 5-year survival on HD and after CRT, progression of liver fibrosis, CRT, and SVR in patients with ESRD and chronic HCV. Multiple sensitivity analyses were performed. **Results:** Kidney transplantation seems to improve 5-year survival for patients with stages 1-3 liver fibrosis, but not stage 4 liver fibrosis (cirrhosis). Antiviral therapy seems to improve 5-year survival for patients with stage 3 liver fibrosis. Our results were robust despite varying probabilities of CRT, SVR, and progression of fibrosis in the sensitivity analysis. **Conclusion:** Stage 3 liver fibrosis alone should not prohibit consideration for kidney transplantation in HCV patients with ESRD.



## **Bryan Lopez**

Mentor: Shahrzad Bazargan-Hejazi, PhD<sup>1,2</sup>

*What Factors Predict the Loss of Inhibitions that Lead to Sexual Activity among Medical Students?*

<sup>1</sup>Charles R. Drew University of Medicine and Science; <sup>2</sup>David Geffen School of Medicine at UCLA

**Objective:** To explore the prevalence and predictors of alcohol use within two hours preceding sexual relations in a population of medical students at American medical schools. **Methods:** This is a retrospective study of data collected from a cross-sectional website survey administered to enrolled medical students in the United States in 2005. Students were in accredited M.D.-granting medical schools. A total of 2693 medical students completed the survey. Study outcome variable was “report of alcohol use within 2 hours prior to sex.” Potential predictor variables in addition to demographic variables include: Year in medical school, marital status, tobacco use, illicit drug use, impulsivity (5-item, 4-point scale), perceived stress, and risk perception (6-item, 4-point scale). Data analysis included descriptive, univariate, bivariate and multivariate analyses. **Results:** In the surveyed population, 76.4% reported having had sex (oral, vaginal, and/or anal) within the past six months, and had a mean age of 25.6 years. Of those that identified as being sexually active, 52% responded that they had consumed alcohol some, most, or all of the time within 2 hours of having sex. Students who were single, used illicit drugs in the past 30 days, used tobacco in the past 30 days, had a lower perception of risk, and who were “highly” impulsive were all at a statistically significant ( $p < 0.05$ ), increased risk of consuming alcohol within 2 hours of having sex. **Conclusion:** Much of the literature has established alcohol use in the proximity of sexual relations as a risky practice. Our data has shown that the majority of sexually active medical students do indulge in such behavior. Implications for interventions are discussed.



## **Lance Mixon**

Mentor: Charles Brunicardi, MD<sup>1</sup>

*Personalized Medicine in a Community Based Setting*

<sup>1</sup>University of California at Los Angeles

**Background:** While the completion of the Human Genome Project in 2001 was a landmark moment in science, the notion that such expansive knowledge would soon be translated to the bedside was premature. Significant improvements have been made in the speed and cost of genetic sequencing techniques. WGS is too time intensive, too costly, and provides a wealth of information that is either uninterpretable or of little clinical utility for patients. Whole exome sequencing provided a moderate improvement by focusing only on protein coding regions, the same fundamental problems preclude its widespread clinical use. We present a strategy for practical, management guided genetics that can potentially be used by clinicians to improve patient outcomes. **Methods:** Extensive literature review, yielded a portfolio of genes with variants that are known to have clinically meaningful impacts for patient care. These variants, in the form of SNPs, will be detected through the use of a DNA microarray. DNA microarrays consist of a series of microscopic DNA probes attached to a solid surface. When DNA is added to this surface, the probes anneal to corresponding targeted DNA sequences, in our case SNPs corresponding to disease gene alleles. Lastly, the SNP-probe hybridization is detected through the use of labeled targets. Chips are able to detect upwards of 2 million SNPs quickly and cost-effectively. **Results:** A portfolio of 34 genes was selected based on the above criteria. These gene variants are known to be highly penetrant and with strong evidence-based predispositions for causing management altering disease states. Genes were selected in 4 main categories based on scientific evidence and potential benefit: cancer genetics, perioperative/anesthesia, drug metabolism, and coagulopathies. **Conclusions:** While actionable genomics appears to be a pragmatic solution to introducing personalized medicine to the healthcare arena, data collection and analysis of outcomes are necessary next steps in proving its feasibility and efficacy.



## **Braden Mogler**

Mentor: Martin Shapiro, PhD<sup>1,2</sup>

*The Effect of a Behavioral Intervention to Control Hypertension on Secondary Cardiovascular Risk Factors among Low-Income Patients*

<sup>1</sup>Charles R. Drew University of Medicine and Science; <sup>2</sup>David Geffen School of Medicine at UCLA

**Background:** Low patient adherence is a frequently encountered clinical problem. Behavioral interventions that seek to leverage patients' intrinsic motivation to improve specific aspects of their health (e.g. improved blood pressure control) may have positive effects on related health measures (e.g. diet and exercise behaviors), regardless of whether or not the primary goal is met. **Objectives:** We evaluated changes in cardiovascular risk factors in a study that used cash incentives and a motivational intervention in an effort to improve blood pressure control. **Methods:** Adults with hypertension were randomized into control (CONT) and intervention (INT) conditions. CONT received \$20/month for 6 months to return for BP checks. INT identified their reasons to stay healthy and received calendars with personalized images. INT received payments for BP improvements and lottery tickets for monitoring BP and medication use at home. Research staff reinforced what improved BP meant for identified reasons to stay healthy. We measured changes in: consumption of fruits, vegetables, and fast foods, exercise, regular walking, and cigarette use. **Results:** We used a linear mixed-effects model to analyze data. Of 207 subjects, 80% completed 6 months follow-up; 74% completed 12 months. INT met recommended standards of health behaviors in 2.09 of the 6 categories at baseline, 2.41 at 6 months, and 2.50 at 12 months. CONT met recommendations in 2.36 at baseline, 2.48 at 6 months, and 2.47 at 12 months. The increase in healthy behaviors at 6 and 12 months for INT compared to baseline reached significance ( $p < 0.05$ ). The increase in CONT ideal behavior scores was not significant, nor were between group differences at any time period. **Conclusions:** We found significant improvements from baseline in cardiovascular health behaviors in the intervention group of a behavioral study focused solely on improved blood pressure management. However, amount of increase was not significant as compared to the control group.



## **Sonia Morales**

Mentors: Revecca Millán<sup>1</sup>, Elvia Barboa<sup>2</sup>, Jacqueline Casillas, MD<sup>1</sup>

*Pediatric Cancer Survivorship: A Community Perspective on Attitudes and Barriers to Continuous Health Insurance Coverage*

<sup>1</sup>Jonsson Comprehensive Cancer Center at UCLA; <sup>2</sup>PADRES Contra El Cáncer, Toluca Lake

**Background/Objective:** An increased rate of survival among children with cancer has generated attention to their long-term health care needs and appropriate follow up care. Compared to siblings, adolescent and young adult (AYA) pediatric cancer survivors have reported decreased health insurance coverage rates. Particularly understudied are the experiences of Latino AYA pediatric survivors and their family in regards to systematic barriers to survivorship care, such as appropriate health insurance coverage. This study explored the perceived barriers and attitudes to continuous health insurance coverage among Latino AYA pediatric survivors and their families. **Methods:** Quantitative and qualitative study that explored perceived barriers and attitudes to continuous health coverage among Latino AYA pediatric survivors and their families. Partnering with PADRES Contra El Cáncer, a community-based organization, focus group participants explored barriers that prevent survivorship care and completed a 20-item questionnaire. AYA pediatric cancer survivors (ages 15-39) and family members were recruited to participate in CAGs held in Spanish (n=13) and English (n=8). **Results:** The majority of AYA pediatric cancer survivors have experienced some level of difficulty in attaining health insurance due to their prior cancer history. Language barriers and lack of health insurance literacy impedes access to health insurance knowledge. Thus, a lack of knowledge regarding health insurance leads to not considering it important. AYA survivors depend on parents for guidance when it comes to health insurance attainment. Many times, however, parents do not feel confident in navigating the health insurance system. **Conclusions:** Systematic barriers to follow up care, such as appropriate health insurance coverage, have been identified in the pediatric AYA cancer survivorship literature. Health insurance literacy appears to be the most important barrier to health insurance attainment among Latino AYA pediatric cancer survivors. Culturally tailored interventions need to be developed to assist survivors with the navigation of the health insurance system.



## Julien Nguyen

Mentors: Amy Kaji, MD<sup>1</sup>, Shahrzad Bazargan, PhD<sup>2,3</sup>,  
Steven L. Lee, MD<sup>2,3</sup>

*Determining Socioeconomic and Racial/Ethnic  
Disparities in Bicycle Helmet Use and Outcomes  
amongst Adults and Children in Bicycle Accidents*

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of Medicine and Science; <sup>3</sup>David Geffen School of Medicine at  
UCLA

**Background:** Bicycle riding offers public health and environmental benefits but carries with it the potential for overuse and traumatic injuries. While helmets have reduced bicycle-associated head injury by 80%, fewer than 20% of adults and children report consistent helmet use. **Objective:** We seek to identify socioeconomic and racial/ethnic disparities in bicycle helmet use and trauma outcomes amongst both adults and children. **Methods:** A cross-sectional analysis of the LA County Trauma database for bicycle-related accidents between 2006 and 2011 was performed. We evaluated the relationship between helmet use and age, gender, insurance status, race/ethnicity and the relationship between helmet use and need for emergency surgery, morbidity, mortality, length of hospital stay (LOS), Injury Severity Score (ISS), and Glasgow Coma Scale (GCS). After translating data into native SAS format, Kruskal-Wallis test, Mantel-Haenzel  $\chi^2$  test, and multivariate analyses were performed to compare numerical/continuous variables, categorical/nominal variables, and ISS and helmet use, respectively. **Results:** Helmeted patients tended to have private insurance, be older, be Caucasian, have fewer returns to pre-injury baseline, and have higher ISS (not significant after adjusting for age and race). There was no difference in mortality or need for emergent surgery, but a decreased LOS was observed after adjusting for race and ISS. Pediatric patients were less likely to wear helmets, be male, and die compared to adults. They were more likely to have private insurance, shorter LOS, and lower ISS, with ISS remaining a significant predictor of length of stay and death. **Conclusion:** Of the bicycle-related accidents examined, patients who were younger, part of a minority, or had lower socioeconomic status tended to use helmets less often. Though past efforts to curb bicycle-related morbidity and mortality have met with varied success, targeted efforts at low income and minority youths to increase bicycle helmet use may prove more effective and worthwhile.



## Angela Orozco

Mentor: Lorraine Yeung, MD<sup>1</sup>

*Characteristics of US Adults Aged 19 Years with a Usual Daily Folic Acid Intake above the Tolerable Upper Intake Level: National Health and Nutrition Examination Survey 2003-2010*

<sup>1</sup>Centers for Disease Control

**Background:** The Food and Drug Administration mandated that by 1998 all enriched cereal-grain products (ECGP) be fortified with folic acid to prevent the occurrence of neural tube defects. The Institute of Medicine established the tolerable upper intake level (UL) for folic acid for adults (1000 µg/day) in 1998. We characterize US adults whose usual folic acid intakes exceeded the UL. **Methods:** Using National Health and Nutrition Examination Survey 2003–2010 data, we estimated the percentage of 18,321 adults whose usual folic acid intakes exceeded the UL and among them, we calculated the weighted percentage by sex, age, race/ethnicity, sources of folic acid intake, supplement use, and median usual daily folic acid intakes. **Results:** Overall, 2.7% (Standard Error 0.6%) of participants had usual intakes exceeding the UL for folic acid; among them, 62.2% were women, 86.3% were non-Hispanic Whites, 98.5% took supplements, and when stratified by sex and age groups, 20.8% were women 19–39 years old. Compared with those whose intakes did not exceed the folic acid UL, those whose intakes did exceed the UL were more likely to be female, Non-Hispanic, or supplement users. Among those whose usual folic acid intakes exceeded the UL and also took supplements, 86.6% took on average above 400 µg of folic acid/day from supplements. Everyone exceeding the UL consumed folic acid from multiple sources. **Conclusions:** At the current folic acid fortification level, no one whose usual intakes exceeded the UL consumed ECGP alone. Among those whose usual intake exceeded the UL, almost all took supplements; women 19–39 years old made up approximately 20%, suggesting they could be taking folic acid supplements while planning a pregnancy or breastfeeding.



## Chirag Patel

Mentor: Matthew Ho, MD, PhD<sup>1</sup>

*Pelvic Floor Disorders in Women, Osteoporosis, and Vitamin D Status*

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**Introduction:** Prior studies of vitamin D status and pelvic floor disorders (PFD) such as pelvic organ prolapse and urinary incontinence have suggested an association between these two. Similarly, there is an observed association between osteoporosis and pelvic floor disorders. We set out to determine if this second association could be mediated by the effect of vitamin D on the pelvic floor. **Methods:** 2005-2006 NHANES laboratory, examination, and questionnaire data were analyzed using SAS 9.4. Multivariable analysis was performed using logistic regression with urinary leak as the outcome variable. **Results:** The study included 1935 women; Average age was 49.9 years, 23.5% were black, 44% reported symptoms of urinary incontinence, 39% had a history of smoking (>100 cigarettes/lifetime), and 9.2% reported being told they had osteoporosis or brittle bones. Multivariable logistic regression was stratified by the effect modifier black race. Urinary leak in non-black women was predicted by age ( $p < 0.001$ ) and BMD (OR 4.6 [1.8, 11.8]) but serum vitamin D was not significant ( $p = 0.32$ ). Urinary leak in black women, on the other hand, was significantly predicted by age ( $p = 0.0047$ ) and serum vitamin D (OR 0.96 [0.933, 0.978]) but not BMD ( $p = 0.13$ ). Parity is an expected confounder for pelvic floor disorders but was not significant either when continuous or dichotomized. **Conclusion:** The previously described association between osteoporosis and PFD has been theorized to be due to suboptimal collagen status. Based on our analysis, there is no evidence to suggest that vitamin D status could be explaining this association. Race as an effect modifier may be due to small sample size or may be a proxy variable correlated with another variable of interest. Future directions are discussed.



## Alejandro Perez

Mentor: David Martins, MD<sup>1,2</sup>, Magda Shaheen, MD, PhD<sup>1,2</sup>

*Fruit and Vegetable Consumption and Chronic Kidney Disease*

<sup>1</sup> Charles R. Drew University of Medicine and Science; <sup>2</sup> David Geffen School of Medicine at UCLA

**Purpose:** To evaluate the relationship between dietary consumption of fruits and vegetables promoting beneficial alkalotic renal loads with staged chronic kidney disease (CKD). **Methods:** In the NHANES 1999-2010 dataset, 28,238 nationally-representative US adults aged  $\geq 18$  years were characterized by the presence of staged CKD as determined by the Modification of Diet in Renal Disease (MDRD) criteria. Potential Renal Acid Load (PRAL) was estimated based on daily protein and electrolyte intake. CKD stage was stratified and comorbidity, PRAL, fruit and vegetable intake, protein intake was evaluated via descriptive, bivariate, and multinomial logistic regression analysis. **Results:** Of the study population, 52.1% were female with comorbidities of 10.2% diabetes, 35.4% hypertension, 22.3% current smoking, 7.4% cardiovascular disease. CKD prevalence was 25.1% with 2.3%, 5.7%, 16.6%, 0.5%, 0.1% staged at 1, 2, 3, 4, 5 respectively. Those with stage 3 CKD had the most alkalotic estimated PRAL at -14.6 mEq/day, corresponding to the greatest average fruit and vegetable intake at 402.9 grams/day ( $p < 0.01$ ) and third lowest average protein intake at 73.3 grams/day ( $p < 0.001$ ). Those with stage 1 CKD had the second lowest fruit and vegetable intake at 347.59 grams/day ( $p < 0.05$ ) and the greatest average protein intake at 85.61 grams/day, corresponding to the second most acidic estimated PRAL at -13.4 mEq/day ( $p < 0.01$ ). Those with stage 5 CKD had the lowest fruit and vegetable intake at 283.91 grams/day ( $p < 0.001$ ) and the lowest protein intake at 62.17 grams/day ( $p < 0.001$ ), corresponding to the most acidic estimated PRAL at -9.36 mEq/day ( $p < 0.01$ ). After adjusting for demographics all CKD stages had significantly higher odds of acidic PRAL than those with no CKD. **Conclusion:** Individuals with earlier stage disease have more acidic PRAL estimates, lower fruit and vegetable intake, and greater protein intake compared to those with the more prevalent mid-stage disease. This suggests greater efforts to modify diet and begin interventions should be established in early stage CKD.



## Shariska Petersen

Mentors: Marianna Sarkissyan<sup>1</sup>, Yanyuan Wu, PhD<sup>1</sup>,  
Marianne Carlota<sup>1</sup>, Jaydutt V. Vadgama, PhD<sup>1</sup>

*Time to Clinical Followup after Abnormal Mammogram  
in African-American and Hispanic Women*

<sup>1</sup>Charles R. Drew University of Medicine and Science

**Background:** Increased time to clinical follow-up after abnormal mammogram may be a significant factor that contributes to health disparities in breast cancer. **Objective:** The objective of this study was to evaluate the time-to-follow up in a cross-sectional cohort of African-American and Hispanic women who obtained screening or cancer care in MLK-MACC county hospital in South Los Angeles. **Methods:** This study reports data from a cross-sectional study of 75 women (n = 30 African-American and n = 45 Hispanic). Patient histories were constructed for women who received an incomplete or abnormal mammogram (BI-RAD score other than BI-RAD = 1 or 2) and were clinically evaluated further to be diagnosed with either breast cancer, benign breast disease, or with no breast disease. Time-to-follow up was assessed in days after abnormal mammogram to subsequent clinical breast-related care received. Clinical, personal, and socioeconomic variables were obtained by medical chart abstraction and survey. Data were analyzed using SPSS software. **Results:** The median number of days until clinical follow up after abnormal mammogram for the women in the study was N = 30 days (Range: 0 – 357 days). All women with BIRAD = 4 (Moderately Suspicious for Malignancy) and 5 (Highly Suspicious for Malignancy) received biopsies as the next clinical evaluation after abnormal mammogram in compliance with recommended guidelines. Among women with BIRAD Score = 0 (Incomplete): 21% received radiological follow up with no further need to evaluate for abnormality, 29% received surgical follow up (either biopsy or FNA), and 50% received biopsy only after a delay of requiring additional radiological evaluation. There was a statistically significant difference in the time-to-biopsy among women who were scored BIRAD 0 and women who were immediately scored BIRAD 4 or 5 (P=0.01, 108 median days BIRAD 0 vs. 40 median days for BIRAD 4/5). **Conclusions:** In sum, these data indicate that county services provide clinical follow up in compliance with recommended guidelines. However, women with BIRAD = 0 may be at a higher risk of experiencing delays in diagnosis and treatment due to increased amount of time necessary to evaluate and refer for diagnostic biopsy.



## **Rogelio Piñon Gutierrez**

Mentor: Indrani Sinha-Hikim, PhD<sup>1,2</sup>

*Role of Oxidative Stress and Caspase-2 in Hepatocyte Apoptosis and Development of Metabolic Disorders in Aging*

<sup>1</sup>Charles R. Drew University of Medicine and Science; <sup>2</sup>David Geffen School of Medicine at UCLA

**Background:** Increased apoptosis in aging is considered a risk factor for developing hepatic diseases such as non-alcoholic fatty liver disease and non-alcoholic steatohepatitis. Studies in muscle cells have shown age-related oxidative stress increases apoptosis by activation of caspase-2. In this study, our aim was to understand whether increased oxidative stress activates caspase-2, leading to increased hepatocyte apoptosis.

**Methods:** Two groups of male C57Bl/6 mice (1) ten old (25M) and (2) ten young (5M) were maintained on normal diet. Blood samples were tested for insulin resistance, inflammatory, and lipid markers. The liver sections were processed for Western blot analysis, for measuring oxidative stress, and for microscopic studies. Liver apoptosis was determined by measuring the percentage of TUNEL-positive apoptotic nuclei.

**Results:** Old mouse livers showed significantly ( $P < 0.05$ ) increased oxidative stress and oxidative-DNA damage ( $P < 0.05$ ), compared to young mouse livers. Serum adiponectin was significantly decreased ( $P < 0.05$ ) and IL-6 levels were significantly increased ( $P < 0.001$ ) in old mice compared to young mice. There was a significant increase in levels of caspase-2 as measured by Western blot ( $P < 0.001$ ) and immunohistochemistry ( $P < 0.005$ ) in old mice, compared to young mice. Western blot analysis of liver showed decreased levels of P-AMPK, PGC-1 $\alpha$  and higher expressions of lipogenic markers (PPAR-g, FAS), apoptosis related markers (caspase-8, cleaved BID), P-JNK, and apoptotic hepatocytes.

**Conclusion:** This study emphasizes the roles of oxidative stress and caspase-2 in the aging liver. Oxidative stress activates caspase-2, which induces activation of caspase-8 and JNK-mediated extrinsic and intrinsic apoptotic pathways. Oxidative stress also leads to metabolic dysregulation of beneficial protein regulators such as AMPK (master regulator of energy), adiponectin (regulator of gluconeogenesis/fatty acid oxidation), and PGC-1 $\alpha$  (regulator of mitochondria biogenesis and glucose/fatty acid metabolism). This study confirms increased oxidative stress and caspase-2 activation are associated with increased risk of developing liver diseases in aging.



## **Sabah R'id**

Mentor: Stacey Teruya, EdD<sup>1</sup>

*Mentor and Student Characteristics and Attributes, and CDU/UCLA Medical Student Research Thesis Program (MSRTP) Outcomes*

<sup>1</sup>Charles R. Drew University of Medicine and Science

**Background:** Physicians help transform basic science knowledge into clinical study, thereby facilitating translational research. Evidence suggests a shortage of medical scholars and clinician scientists. Identifying training components and factors that produce exemplary biomedical researchers is crucial. **Objectives:** To test posited mentor/student variables that may predict quantitative CDU/UCLA Medical Student Research Thesis Program (MSRTP) outcomes. **Methods:** This was a cross-sectional analysis study of 58 MSRTP student records with no identifying data from the classes of 2010, 2011 and 2012. We used SPSS v21 to perform descriptive and bivariate analysis. Outcome variables consisted of thesis and research colloquium scores, and the number of manuscripts submitted for peer-reviewed publication. Student variables included gender, age, post-secondary GPA, number of mentors and self-assessed skills in research. Mentor variables include terminal degree, previous MSRTP mentoring experience, academic rank, and the number of peer-reviewed publications and NIH grants. Other variables of interest include Likert-scale student assessments of their mentors and mentoring experience, and gender and racial/ethnic pairing of students and mentors. **Results:** We found no significant relationship between any posited student or mentor variable, and Program outcomes, with the exception of high post-secondary GPAs and thesis scores ( $p = 0.012$ ). In addition, having a mentor with previous MSRTP experience was weakly associated with thesis scores ( $p = 0.06$ ). Limitations include small student ( $n = 58$ ) and mentor ( $n = 34$ ) populations, and that only primary mentor information was examined. **Conclusions:** Findings of no association between most student and mentor variables and performance outcomes suggest the significance of internal factors such as students' motivation, determination, and resourcefulness. Future studies with larger sample sizes are warranted.



## Sire Sow

Mentor: Susan Meffert, MD<sup>1</sup>, Shahrzad Bazargan, PhD<sup>2,3</sup>

*How Do Refugees and Asylum Seekers in Senegal Perceive the Mental Health of Their Communities?*

<sup>1</sup>University of California at San Francisco; <sup>2</sup>Charles R. Drew University of Medicine and Science; <sup>3</sup>David Geffen School of Medicine at UCLA

**Background:** Emotional distress among refugees and asylum-seekers has an enormous impact on their health, interpersonal relationships, and overall well-being of their communities. Research on the mental health of refugees and asylum seekers in African countries reveals high rates of depression, post-traumatic stress disorder and anxiety. The objective of this study is to characterize the mental health and interpersonal functioning of refugees and asylum seekers in Dakar, Senegal. **Methods:** We contacted and recruited asylum seekers and refugees who had sought services at OFADEC, a Senegalese NGO affiliated with the UNHCR. We selected 45 participants for group and individual qualitative interviews. Interviews were transcribed, translated and coded using framework analysis. **Results:** Dominant themes regarding traumatic stressors included not only pre-migration traumas, but also substantial stressors experienced in the host country including stigma associated with asylum status, limited access to safe housing, employment, health care, and education. Interviewees identified these post-migration stressors as negatively affecting their mental health at the individual level and interpersonal functioning at family and community levels. Compared with those recognized as refugees, asylum seekers reported more frequent and severe post-migration challenges. Dissatisfaction with the level of social and mental health support provided by NGOs and Senegalese authorities was also a common theme. **Discussion:** Our research underlines the importance of post-migration support in Dakar. This study is consistent with prior research identifying post-migration stressors as critical to the mental health of asylum seekers and refugees. Through providing in-depth qualitative data, this research identifies modifiable post-migration stressors in Dakar, Senegal, and illuminates potential causal pathways from post-migration stressors to mental health deterioration and interpersonal conflict. An added consequence of post-migration stressors is a lack of trust between refugees/asylum seekers and current assistance programs in Dakar, which has broad implications. Lastly, we provide recommendations for revision and future research.



## Victor Velasco

Mentors: Cynthia Wong<sup>1</sup>, Deanna M. Janzen, PhD<sup>1</sup>, Peggy Sullivan, MD<sup>1</sup>, Sanaz Memarzadeh, MD, PhD<sup>1,2,3</sup>

### *Tubal Ligation Decreases Progenitor Cells and Proliferation in Human Fallopian Epithelium*

<sup>1</sup>David Geffen School of Medicine at UCLA; <sup>2</sup>Eli and Edythe Broad Center of Regenerative Medicine and Stem Cell Research; <sup>3</sup>The VA Greater Los Angeles Health Care System

**Introduction:** For over 30 years, it has been known that tubal ligation reduces the risk of serous epithelial “ovarian” cancer by 20-30 percent. However, very little is known about the underlying mechanisms that affect this change at the tissue level. Mounting evidence suggests that serous tumors actually originate in the distal fallopian epithelium. This epithelium is populated by three cellular subtypes: secretory, ciliated and the undifferentiated “peg cell.” CD44 is an intramembranous glycoprotein that marks undifferentiated progenitor cells in the fallopian tube. Ki67 is a marker of cellular proliferation. **Objective:** To compare the fallopian epithelium of patients with tubal ligation to intact fallopian tubes. **Methods:** Fallopian tubes from 10 patients with prior tubal ligation and 10 age-matched controls were studied. Expression of CD44 and Ki67 in the distal fallopian tube of these samples was determined using immunohistochemistry. To obtain accurate cell counts, Definiens<sup>®</sup> image analysis software was used to quantify the expression of CD44, Ki67 and total epithelial cells. **Results:** The population of CD44-positive cells was found to be diminished in the cohort with tubal ligation, with an average of 0.16 percent of total epithelial cells compared to 0.54 percent in the control cohort. (P-value 0.019). The ligation cohort was also found to have 0.21% epithelial cells positive for Ki67, compared to 0.72% (P-value = 0.047). **Conclusions:** Tubal ligation is associated with a significantly diminished population of basally located, CD44-positive progenitor epithelial cells and decreased proliferation in the distal fallopian tube. These changes in the fallopian epithelium may help account for the observed reduction in the risk of epithelial “ovarian” cancer.



## **Jonathan Velasquez**

Mentors: Senait Teklehaimanot, MPH<sup>1</sup>, Shahrzad Bazargan-Hejazi, PhD<sup>1,2</sup>

*The Prevalence of Depression Symptoms in Californian Adolescents Aged 12-17 and Weight Status as a Risk Factor*

<sup>1</sup>Charles R. Drew University of Medicine and Sciences; <sup>2</sup>David Geffen School of Medicine at UCLA

**Background:** Obesity and depression among US adolescents are a continuing problem. Studies have shown an association between the two, however, debate continues as to the nature and directionality of this association. Further study regarding these conditions in this vulnerable population is paramount. **Objective:** We aimed to assess prevalence of depression symptoms in obese Californian adolescents and delineate the role of obesity as a risk factor for depression. **Methods:** We performed a cross-sectional, secondary data analysis using the adolescent version of the California Health Interview Survey (CHIS) for 2007-2012. Weight status was categorized based on BMI. Depression was assessed using a six-item scale and scored based on a four-point likert scale. Covariates were also analyzed. Descriptive, bivariate, and multivariate analyses were performed using STATA with p-value < 0.05 set for the level of significance. **Results:** Of the total sample (N = 9,463), 50.5% of the study was male, and 48.7% self-reported as White followed by 24.5% reporting as Latino. BMI distributed with 11.9% obese and 14.8% overweight. There was 4.2% prevalence of depression in the total sample. Obese adolescents were nearly 1.5 times [OR 1.46 (1.21-1.78) p<0.001] more likely to have depression than adolescents of normal BMIs. Covariates including female gender, fair-to-poor perception of health status, cigarette use, alcohol use, feeling the need for emotional help, and receiving psychological counseling were found to be significantly associated with higher reports of depressive symptoms. **Conclusions:** Obesity and depression prevalence in our sample were 11.9% and 4.2% respectively. Obesity and depression are associated in adolescence, yet directionality and nature remain unsettled. Screening for and intervention of obesity and depression, as well as the significant covariates, could help prevent development or worsening of either obesity or depression. Future studies are needed.



## **Dominique Woods**

Mentors: Nina T. Harawa, PhD<sup>1,2</sup>, John K. Williams, MD<sup>2</sup>, Dorie Glover, PhD<sup>2</sup>

*Correlates and Predictors of Allostatic Load in HIV-Positive African American Men Who Have Sex with Men and Women*

<sup>1</sup>Charles R. Drew University of Medicine and Science; <sup>2</sup>David Geffen School of Medicine at UCLA

**Background:** HIV+ Black men who have sex with men (MSM) have the highest rates of AIDS mortality in the US. Among Black MSM, those who have sex with men and women (MSMW) are a marginalized group plagued with multiple psychosocial stressors and poor mental health, which may worsen disease progression. Allostatic load (AL) is a composite index of neurohormonal and metabolic function which reflects chronic “wear and tear” on the body due to repeated stress. AL has demonstrated greater prediction of morbidity and mortality over traditional clinical risk factors. **Objectives:** Identify psychosocial predictors of AL among HIV+ Black MSMW. **Methods:** *Predictors* - Community recruited participants completed automated computer-assisted self-interviewing (ACASI) questionnaires which measured chronic burden, Perceived Stress Scale, Brief Symptom Inventory (BSI), Center for Epidemiological Studies-Depression (CES-D), and Posttraumatic Diagnostic Scale symptom severity (PDS) scores. *Outcome* - Cortisol, epinephrine, norepinephrine, and dopamine concentrations were measured using 12-hour overnight urine samples along with systolic and diastolic blood pressure, BMI, and waist-to-hip-ratio. One AL risk-point was assigned for each biomarker greater than the sample’s 75<sup>th</sup> percentile. Bivariate correlations, independent t-tests, and multiple linear regressions were conducted. **Results:** *Sample* - (n = 47) Mean age was 47 years, Most were unemployed/disabled, high school graduates, and earned less than \$1000/month. Over 25% had CD4 counts less than 200, while 43% had undetectable viral loads. AL was significantly correlated with age and viral load ( $p < .05$ ) and BSI and PDS ( $p < .01$ ). CD4 count below 200 was associated with higher AL scores ( $p = .03$ ). PDS emerged as the strongest predictor of AL ( $\beta = .516$ ,  $p = .000$ , adjusted  $R^2 = .386$ ). **Conclusions:** HIV/AIDS providers who treat Black MSMW should assess PTSD and depressive symptomatology to identify patients at risk for worsened health outcomes. Further longitudinal studies are needed to determine AL’s predictive value in HIV-related morbidity and mortality.



## **Sarah Young**

Mentor: Monica Sifuentes, MD<sup>1</sup>

*Working with LGBTQ Adolescents*

<sup>1</sup>Harbor-UCLA Medical Center

**Background:** Lesbian, gay, bisexual, transgender, and questioning (LGBTQ) adolescents are one of the most under-resourced patient populations in pediatrics. In a diverse setting for uninsured patients, Harbor-UCLA serves as a safety net for many pediatric patients, yet it is unclear the knowledge, skills, and attitudes of these health professionals serving LGBTQ patients. **Methods:** An online survey is administered to Harbor-UCLA residents and faculty in the departments of pediatrics and family medicine, for a total of 70 participants. We assessed participants' demographics, knowledge, skills, and attitudes working with LGBTQ patients. **Results:** Our results continue to be under review. **Conclusion:** We anticipate the survey results to identify areas of clinical education and training improvement for Harbor-UCLA pediatric and family medicine residents and faculty in working with LGBTQ patients.



## **Sheila Young**

Mentor: Basil O. Ibe, PhD<sup>1</sup>

*Molecular Mechanism of Pulmonary Endothelial Hyperplasia in Sickle Cell Disease*

<sup>1</sup>Los Angeles Biomedical Research Institute

**Background and Hypothesis:** Sickle cell disease (SCD) is an autosomal-recessive hemoglobinopathy characterized by painful vaso-occlusive crises affecting millions of individuals worldwide. It results from the substitution of valine for glutamic acid in the beta-hemoglobin chain that produces sickle cell hemoglobin (HbS). There is a dearth of knowledge concerning acute chest syndrome, a leading cause of death in individuals with sickle cell disease. It is thought that sickled erythrocytes cause repeated injury to the pulmonary endothelium causing a release of inflammatory mediators and clotting factors, which promote red blood cell adhesion to the vessel wall resulting in sub-clinical microinfarctions. The cycle of endothelial injury and repair leads to pulmonary vascular intimal proliferation. We hypothesize that platelet-activating factor, a potent inflammatory mediator and vasoconstrictor, activates cell cycle regulators to promote pulmonary endothelial hyperplasia contributing to a persistent state of inflammation and thus an increased risk for acute chest syndrome in patients with sickle cell disease.

**Methods/Procedures:** Blood from sickle cell patients in three states collected; steady state, crisis state, post-crisis state. Culture of Human Lung Microvascular Endothelial Cells: Experiment 1. Pulmonary endothelial cells washed and inoculated with specific reagents and with blood from sickle cell patients. We continue to measure inflammatory mediators and vasoconstrictors. Experiment 2. Transient transfection of cells with siRNA to 5-lox and PKA to define the role of 5-lox and PKA in the generation of constrictors and dilators that we measured.

**Results and Conclusions:** In individuals with sickle cell disease, inflammatory mediators such as 5-lox, thromboxane, leukotrienes and platelet activating factor contribute significantly to a state of persistent of inflammation, creating a harsh environment for red blood cells and thus a propensity to sickling. Targeting these inflammatory mediators therapeutically can alleviate this harsh environment and decrease the frequency of painful vaso-occlusive crises and acute chest syndrome.

# **The CDU/UCLA Medical Student Research Thesis Program (MSRTP)**

Shahrzad Bazargan-Hejazi, PhD, *Chair*

Stacey Teruya, EdD, MS, *Education and Training Manager*

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