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

The Medical Student Research Thesis Program (MSRTP)

Class of 2017
Medical Student Research Colloquium

Current Research in Health Disparities

Wednesday, March 8, 2017
8:30 a. m. to 4:00 p. m.
Keck Auditorium
Charles R. Drew University
of Medicine and Science
1731 East 120th Street
Los Angeles, CA 90059

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CDU/UCLA Medical Education Program

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AGENDA

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

8:30 a. m. *Call to Order*
Shahrzad Bazargan-Hejazi, PhD
Chair, CDU/UCLA Medical Student Research Thesis Program (MSRTP)

8:40 a. m. *University Welcome*
David Carlisle, MD, PhD
President, Charles R. Drew University of Medicine and Science

8:50 a. m. *The Dean's Welcome*
Deborah Prothrow-Stith, MD
Dean, College of Medicine, Charles R. Drew University of Medicine and Science

8:50 – 10:30 a. m. *Student Presentations (Morning Session)*

10:30 – 10:45 a. m. *Morning Break*

10:45 – 11:45 a. m. *Student Presentations (Morning Session, cont.)*

11:45 a. m. – 1:30 p. m.   *Lunch in the Foyer of the Cobb Administration Building*

1:30 – 2:45 p .m. *PRIME Plenary Session*

2:45 – 3:00 p. m. *Afternoon Break*

3:00 – 3:30 p .m. *Student Presentations (cont.)*

3:30 – 3:40 p. m. *Closing Remarks*
Shahrzad Bazargan-Hejazi, PhD

Moderators of Student Presentations
Morning Session

Shanika Boyce, MD
Assistant Professor of Medicine, Charles R. Drew University of Medicine and Science

Stanley Hsia, MD
Associate Professor of Medicine, Charles R. Drew University of Medicine and Science

Panel of Judges
Morning Session

Michele A. Basso, PhD
Professor of Medicine in the Department of Psychiatry & Biobehavioral Sciences and Neurobiology, UCLA

Linda Baum, MD, PhD
Professor and Vice Chair, Dept. of Pathology and Laboratory Medicine, Associate Dean, Medical Student Research and Scholarship

Alma Guerrero, MD, MPH
Assistant Clinical Professor of Pediatrics, David Geffen School of Medicine at UCLA

Dorota Huizinga, PhD
Dean, Graduate Studies & Research, California State University, Dominguez Hills

Pamela Krochalk, PhD
Professor and Chair, Division of Health Sciences, California State University, Dominguez Hills

Steven Lee, MD
Professor of Clinical Surgery and Pediatrics, David Geffen School of Medicine at UCLA

Ayesha Z. Sherzai, MD
Department of Neurology and Neurosurgery, Cedars Sinai Medical Center

Dean Sherzai, MD, PhD
Director, Alzheimer's Disease Prevention Program, Cedars Sinai Medical Center

Sharon Younkin, PhD
Chief of Staff for the Vice Dean of Education, David Geffen School of Medicine at UCLA

STUDENT PRESENTATIONS
(*Morning Session*)

8:50 a. m.   **JOSÈ ALONSO**   Primary Mentor: Edward C. Kuan, MD
Squamous cell carcinoma of the retromolar trigone: A population-based analysis of 4,022 cases

9:00 a. m.   **JOEL AMEZQUITA**   Primary Mentor: Cynthia Davis, MPH
Factors contributing to depression among HIV-positive and HIV-negative Latino and African American men and women residing in South Los Angeles

9:10 a. m.   **ELIZABETH ASFAW**   Primary Mentor: Mohsen Bazargan, PhD
Evaluation of medication adherence among south Los Angeles residents at risk for and with heart disease

9:20 a. m.   **EDWARD CARDENAS**   Primary Mentor: Gerardo Moreno, MD, MSHS
The efficacy of meditation modalities in the pediatric Latino and African American populations with ADHD: A systematic review

9:30 a. m.   **JOHN FLORES**   Primary Mentor: Frank Aliganga, MD
Assessing mental health care of a Filipino-American community in Los Angeles

9:40 a. m.   **JASON HAMAMOTO**   Primary Mentor: Nikhil N. Verma, MD
How comprehensive and efficient are patient reported outcomes for rotator cuff tears?

9:50 a. m.   **CHRIS HANUSCIN**   Primary Mentor: Shahrzad Bazargan-Hejazi, PhD
Socio-demographic and mental health profile of self-inflicted harm in the U.S population

10:00 a. m.   **EBONY KING**   Primary Mentor: Mohsen Bazargan, PhD
Potentially inappropriate medications use among underserved African Americans in south Los Angeles

10:10 a. m.   **BRYAN LAM**   Primary Mentor: Raphael Landovitz, MD
Knowledge, beliefs, and practices regarding HIV pre-exposure prophylaxis among primary care providers in south Los Angeles

10:20 a. m.   **VINH LAM**   Primary Mentor: Amy Hideko Kaji, MD, PhD
Profile of patients with congestive heart failure exacerbations in the emergency department in Los Angeles county

MORNING BREAK (15 MINUTES)
Reconvene at 10:45 a. m.

10:45 a. m.	**DANIEL MAI**	Primary Mentor: Magda Shaheen, MD, PhD

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10:45 a. m.   **DANIEL MAI**   Primary Mentor: Magda Shaheen, MD, PhD
The role of parental acculturation and race/ethnicity in childhood influenza vaccination – data from the California health interview survey

10:55 a. m.   **IMANI MCELROY**   Primary Mentor: Peyman Benharash, MD
Readmissions reduction interventions: A systematic review of what works, what doesn't?

11:05 a. m.   **ELIZABETH PELAYO**   Primary Mentor: Alma Guerrero, MD, MPH
Parental attitudes about the importance of preschool among Latinos

11:15 a. m.   **ERNESTO RAMIREZ**   Primary Mentor: Shahrzad Bazargan-Hejazi, PhD
Investigating the gender difference in hypertension treatment and blood pressure control in US adults

11:25 a. m.   **ALVARO SANTAMARIA**   Primary Mentor: Leonard Marks, MD
Tissue phantoms for the development of an optical feedback system for use in laser interstitial thermal therapy

11:35 a. m.   **LAGINA SCOTT**   Primary Mentor: Steven Lee, MD
Determining socioeconomic and racial/ethnic disparities in bicycle helmet use and bicycle-related injury outcomes amongst adults and children in California

LUNCH BREAK
Reconvene at 1:30 p. m.

Please proceed to the Student Lounge of the adjacent Cobb Administration Building, located on East 118th Street

AFTERNOON SESSION
Moderators of Student Presentations

Gerardo Moreno, MD (PRIME Plenary Session)
Assistant Professor in Residence of Family Medicine in the Department of Medicine, David Geffen School of Medicine at UCLA

Theodore Friedman, MD, PhD
Professor of Medicine, Charles R. Drew University of Medicine and Science and UCLA

David Hindman, PhD
Assistant Professor of Medicine, Charles R. Drew University of Medicine and Science

Panel of Judges

Michele A. Basso, PhD
Professor of Psychiatry & Biobehavioral Sciences and Neurobiology, UCLA

Linda Baum, MD, PhD
Professor and Vice Chair, Dept. of Pathology and Laboratory Medicine, Associate Dean, Medical Student Research and Scholarship

Christian De Virgilio, MD
Chair, Department of Surgery at Harbor-UCLA, Co-Chair of the College of Applied Anatomy, David Geffen School of Medicine at UCLA

Dorota Huizinga, PhD
Dean, Graduate Studies & Research, Cal State University, Dominguez Hills

Pamela Krochalk, PhD
Professor and Chair, Div. of Health Sciences, Cal State University, Dominguez Hills

Steven L. Lee, MD
Professor of Clinical Surgery & Pediatrics, David Geffen School of Medicine at UCLA

Gerardo Moreno, MD
Assistant Professor in Residence of Family Medicine in the Department of Medicine, David Geffen School of Medicine at UCLA

Ayesha Z. Sherzai, MD
Department of Neurology and Neurosurgery, Cedars Sinai Medical Center

Dean Sherzai, MD, PhD
Director, Alzheimer's Disease Prevention Program, Cedars Sinai Medical Center

Sharon Younkin, PhD
Chief of Staff for Vice Dean of Education, David Geffen School of Medicine at UCLA

PLENARY SESSION
(*UCLA PRIME Students in MSRTP Program*)
1:30 – 2:45 p. m.

ELIZABETH CANALES   Primary Mentor: John Villasenor, PhD
A case for robust juvenile diversion programs in Los Angeles county

UYEN CHU   Primary Mentor: Wes Yin, PhD
Affordable care act 2.0: Reimagining health care reform in California

KASEE HOUSTON   Primary Mentor: John Villasenor, PhD
Mitigating small business displacement in the city of Los Angeles

ELBERTH PINEDA   Primary Mentor: J. R. DeShazo, PhD, MS
Quenching Los Angeles' thirst: evaluating policy options to increase water cistern installation in single-family homes

MINERVA PINEDA   Primary Mentor: Magda Shaheen, MD, PhD
Maternal morbidity trends before and during pregnancy and length of hospital stay and mortality in California 2001-2010

JANELLE RODRIGUEZ   Primary Mentor: Margarita Loeza, MD
Curbside women's health alliance

ADIA SCRUBB   Primary Mentor: Kishore Nath, MD
Safety net clinic utilization pre and post affordable care act: John Muir mobile health clinic

AFTERNOON BREAK (15 MINUTES)
Reconvene at 3 p. m.

3:00 p. m.   **BRANDON STARK**   Primary Mentor: Kenneth Lewis, MD
The role of acculturation in determining pre-operative anesthesia-related concerns

3:10 p. m.   **HOOVER WU**   Primary Mentor: Stacey Teruya, EdD, MS
BMI and severity of gallstone pancreatitis: A systematic review

3:20 p. m.   **MARISA YANEZ**   Primary Mentor: Susan Partovi, MD
H.e.a.l.'s influence on blood pressure status in rural Haiti: A descriptive study

3:30 p. m.   **SHAHRZAD BAZARGAN-HEJAZI, PhD**
CLOSING REMARKS

END OF 2017 CDU MSRTP RESEARCH COLLOQUIUM

Students, judges and moderators are asked to remain after closing remarks for group photos.

Moderators

Shanika Boyce, MD

Dr. Boyce is a pediatrician, an Assistant Professor at Charles R. Drew University of Medicine and Science, and the Co-Director for the Longitudinal Primary Care Clerkship. She received her medical degree from the CDU-UCLA Medical Education Program, and completed her Pediatric Residency Training at Harbor-UCLA Medical Center in 2014. Following her residency training, she returned to CDU as a faculty member and recently received a dual appointment as Assistant Clinical Professor in the Department of Pediatrics at the David Geffen School of Medicine. She practices clinically at Kaiser Permanente, per diem.

Stanley Hsia, MD

Dr. Hsia is an Associate Professor of Medicine at Charles R. Drew University of Medicine and Science and a Health Sciences Associate Clinical Professor at the David Geffen School of Medicine at UCLA. 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 for the past 15 years, including both industry and investigator-initiated trials, funded by the National Institutes of Health and the American Diabetes Association.

Theodore Friedman, MD, PhD

Dr. Friedman is the Chair of Medicine and Chief of the Division of Endocrinology, Molecular Medicine and Metabolism at Charles R. Drew University (CDU) and a professor of Medicine at both UCLA and CDU. He is board certified in Internal Medicine and Endocrinology, Diabetes and Metabolism. He is also the Director of the CDU Metabolic and Cardiovascular Diseases Research Cluster. He holds an Endowed Professorship in Cardio-Metabolic Medicine.

David Hindman, PhD

Dr. Hindman is an 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 the 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.

Judges

Michele A. Basso, PhD

Dr. Basso is a Professor in the Department of Psychiatry and Biobehavioral Sciences and Department of Neurobiology at DGSOM and Director of the Fuster Laboratory of Cognitive Neuroscience. 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.

Linda G. Baum, MD, PhD

Dr. Baum is currently Professor and Vice Chair of the Dept. of Pathology and Laboratory Medicine, and Associate Dean for Medical Student Research and Scholarship at DGSOM. She has served on the FASEB Committee on Excellence in Science, the scientific advisory board for the NIH-sponsored Integrated Technology Resource for Biomedical Glycomics, and on the editorial board of several journals.

Christian De Virgilio, MD

Dr. De Virgilio is Chair of the Department of Surgery at Harbor-UCLA, and Co-Chair of the College of Applied Anatomy at the UCLA School of Medicine. He is originally from Argentina, and moved to the U.S. as a child. He attended Loyola Marymount University as an undergraduate, medical school at UCLA, general surgery residency at Harbor-UCLA, and vascular surgery fellowship at the Mayo Clinic. He enjoys teaching and mentoring medical students and residents.

Alma Guerrero, MD, MPH

Dr. Guerrero is an Assistant Professor in the Department of Pediatrics at UCLA. Dr. Guerrero practices general pediatrics at the Venice Family Clinic and works with vulnerable populations who have high unmet medical and psychosocial needs. She also sees patients at UCLA's Fit for Healthy Weight Program for children. Dr. Guerrero's research has focused on young Latino children's health and development, and disparities in quality indicators of healthcare services among Latino children.

Dorota Huizinga, PhD

Dr. Huizinga is the Dean of Graduate Studies and Research, and a professor of Computer Science at California State University, Dominguez Hills. She is a recipient of several outstanding faculty recognitions in the areas of scholarly and creative activities, teaching and service. She was awarded in access of $3.7 million in grants from the U.S. Department of Education, the National Science Foundation, and the National Institutes of Health.

Pamela Krochalk, DrPH

Dr. Krochalk 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.

Steven L. Lee, MD

Dr. Lee is Associate Program Director of the General Surgery Residency at Harbor-UCLA Medical Center, and a Professor of Clinical Surgery and Pediatrics at the David Geffen School of Medicine at UCLA. He received his MD from the University of California at Davis, California.

Gerardo Moreno, MD

Dr. Moreno is Director of UCLA Program in Medical Education (PRIME) and assistant professor in Family Medicine at UCLA. He received his MD from UCLA, 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.

Ayesha Sherzai, MD

Dr. Ayesha Sherzai is a staff neurologist and Co-Director of the Brain Health and Alzheimer's Prevention Program, in the Departments of Neurology and Neurosurgery at Cedars-Sinai Medical Center. Her research focuses on preventive neurology, as well as the relationship between lifestyle (nutrition and physical activity), and neurodegenerative and neurovascular diseases.

Dean Sherzai, MD, PhD

Dr. Dean Sherzai is co-director of the Brain Health and Alzheimer's Prevention Program, in the Departments of Neurology and Neurosurgery at Cedars-Sinai Medical Center. His research focuses on early diagnosis and intervention in Alzheimer's disease. As such, he is introducing novel imaging and biomarker tools into the realm of diagnosis at earlier stages of the disease. He is also introducing novel interventions both with regards to pharmaceuticals, as well as comprehensive lifestyle changes that appear to be very effective in altering the course of the disease.

Sharon Younkin, PhD

Dr. Younkin received her Ph.D. in Counseling Psychology from Ohio State University in 1992, and she currently serves as the Chief of Staff for the Vice Dean for Education at the David Geffen School of Medicine at UCLA. Dr. Younkin's research interests are in medical education, medical student well-being, humanism in medicine, community health, health disparities, community based participatory research, and community-campus partnerships.

CLASS OF 2017

Students and Abstracts

MEDICAL STUDENT RESEARCH COLLOQUIUM
Charles R. Drew University of Medicine and Science
March 8, 2017

José Alonso

Squamous cell carcinoma of the retromolar trigone: A population-based analysis of 4,022 cases

Mentors: Edward C. Kuan, MD, MBA; Jon Mallen-St. Clair, MD, PhD; Armin Arshi, MD; Maie St. John, MD, PhD

Background: Squamous cell carcinoma of the retromolar trigone (RMT SCC) is a relatively uncommon primary site for oral cavity malignancy. However, given its proximity to the mandible and buccal mucosa, RMT SCC typically exhibits early invasion and generally presents at an advanced stage. Large-sample studies are needed to assess the epidemiology and clinical outcomes of this tumor.

Objective: To describe the determinants of survival in patients with RMT SCC.

Design, setting, and participants: Retrospective, population-based cohort study of patients in the Surveillance, Epidemiology, and End Results (SEER) tumor registry who were diagnosed with RMT SCC from 1973 to 2012.

Main outcomes and measures: Overall (OS) and disease-specific survival (DSS).

Results: A total of 4022 cases of RMT SCC were identified. The mean age at diagnosis was 65 years. 39% of cases presented with stage IV disease. The median OS by stages I-IV were 73.7, 52.4, 27.5, and 23.4 months, respectively ($p<0.05$). 69.5% of patients underwent surgery, 58.9% received radiation therapy, and 34.4% had both surgical and radiation therapy. On multivariate analysis, advanced age, greater tumor size, and advanced stage were associated with worse OS and DSS ($p<0.05$), surgery predicted improved OS and DSS ($p<0.05$) and radiation therapy predicted improved OS only ($p<0.05$).

Conclusions and relevance: RMT SCC is an aggressive malignancy that portends an overall poor prognosis, though early stage tumors (stages I and II) have significantly improved sur-vival. Any surgical intervention independently predicted higher survival outcomes. There may be a role of dual modality approaches, particularly for larger tumors.

Joel Amezquita

Factors contributing to depression among HIV-positive and HIV-negative Latino(a) and African American men and women residing in South Los Angeles

Mentors: Cynthia Davis, MPH; Alicia Morehead-Gee, MD; Magda Shaheen, MD, PhD; Senait Teklehaimanot, MPH

Background: Many studies have investigated risk factors for depression and HIV, but few investigated the relationship between depression, alcohol use, childhood sexual abuse (CSA), and HIV/AIDS knowledge among Latino and African-American by gender.

Objective: To assess the relationship between alcohol abuse, CSA, and/or HIV/AIDS knowledge and depression by HIV status in Latinos and African-Americans men and women living in South Los Angeles.

Methods: Cross-sectional data was collected by questionnaires. Subjects were recruited at community outreach sites and HIV/AIDS Primary Care Clinics. Data analysis was analyzed using SPSS 22.

Results: 264 participants (47% Latino, 43% African-American, 7% others) were interviewed; 47% were male, 51% were 18-40 years old, 39% had > high school education, 64% had health insurance, 76% had an income < $10,000/year, 10% were HIV positive. Participants who answered yes to childhood sexual abuse were more likely to have symptoms of depression (OR: 2.96, 95% CI [1.5-5.85]), as were those who screened positive for alcohol abuse (OR: 3.08, 95% CI [1.52-6.22]). 71.4% (n=25) of HIV negative women who screened positive for alcohol abuse also screened positive for depression, compared to 38.4% (n=33) who screened negative for alcohol abuse (p=.001). 65% (n=39) of HIV negative women who had experienced childhood sexual abuse screened positive for symptoms of depression, compared to 28.8% (n=17) of HIV negative women who reported no childhood sexual abuse (p<.001).

Conclusion: Childhood sexual abuse and alcohol abuse appear to be closely correlated to depression in African-American and Latino communities in South Los Angeles. Increased resources for education and treatment may greatly benefit these communities.

Elizabeth Asfaw

Evaluation of medication adherence among South Los Angeles residents at risk for and with heart disease

Mentors: Mohsen Bazargan, PhD; Roberto B Vargas, MD, MPH

Background: Heart disease disproportionately affects the South Los Angeles community.

Objective: We examine the role of medication knowledge on non-adherence in African-American elders at risk for and with heart disease in South LA.

Methods: In two separate multivariate logistic regression models; one for those "at risk" for heart disease (hypertension, diabetes, and kidney disease); and one for those "with heart disease" we examined the association of knowledge of therapeutic "purpose" and dosage "regimen" on medication non-adherence controlling for demographics and selected risk factors.

Results: In 359 patients, averaged age 74, 65% female, 24% with no high school diploma, and 80% un-married; 66% of participants did not know the "purpose" of at least one of their medications and 36% did not know the correct "regimen" of one or two of their medications. 48% of participants were non-adherent to at least one of their medications. Model results showed that in "at risk" persons (N=230), lower knowledge about "purpose" of medication was significantly associated with non-adherence OR 3.4 (95% CI 1.5 to 7.7), and lower knowledge about medication "regimen" was also significantly associated with non-adherence OR 24.2 (95% CI 10.4 to 56.2). In those "with heart disease" (N=168), lower knowledge about "purpose" of medication was not significantly associated with non-adherence OR 1.4 (95% CI 0.58 to 3.48) whereas lower knowledge about "regimen" was significantly associated with non-adherence OR 23.2 (95% CI 8.6 to 62.7).

Conclusion: Improving knowledge of regimen may improve adherence for patients in all groups. Self-reported awareness of heart disease might have a beneficial effect on adherence in those with less knowledge of purpose of medications.

Elizabeth Canales

A case for robust juvenile diversion programs in Los Angeles County

Mentor: John Villaseñor, PhD

Background: The United States' juvenile justice system developed in the early 1900s and distinguished itself from the adult justice system by focusing on rehabilitation through diversion programs rather than punishment through incarceration. However, during the last three decades the juvenile system has become more punitive, and during this same period recidivism has increased.

Objective: This study reflects the growing interest in identifying ways to improve the design and implementation of diversion programs. During this study we partnered with Coalition for Engaged Education (CEE). CEE is a nonprofit organization that is interested in helping youth advocate for a fair juvenile justice system. Our analysis and recommendations are intended to support advocacy efforts related to diversion program implementation.

Methods: Data was gathered via literature review, expert and CEE student interviews on diversion programs. Interviews were done in person or over the phone. Literature was gathered via Google Scholar search. Data analysis looked at diversion program cost-effectiveness, impact on recidivism, political acceptability, and client (CEE) preference.

Results: Our data analysis showed that recidivism reduction can be achieved with lower cost via diversion programs. Diversion programs which are comprehensive, have high quality treatments, are implemented prior to charges and target high-risk offenders have a larger decrease in recidivism.

Conclusion: We recommend optimizing existing diversion programs through a series of measures including improved quality control and the establishment of an advisory board.

Edward Cardenas

The efficacy of meditation modalities in the pediatric Latino and African American populations with ADHD: A systematic review

Mentors: Gerardo Moreno, MD, MSHS; Shahrzad Bazargan-Hejazi, PhD; Darlene Parker-Kelly, MSLS

Background: 6.4 million children have been diagnosed with Attention-deficit/hyperactivity disorder (ADHD) since 2011. Minorities are less likely to use prescription medication for ADHD treatment. African American (AA) and Latino children are more likely to face long-standing social and economic stressors that adversely affect their health. Meditation has demonstrated benefits in stress reduction and may be beneficial in treatment of ADHD.

Objective: Review the literature on meditation as a treatment modality in Latino and African American pediatric patients with ADHD.

Methods: A literature review was conducted through PubMed, Web of Science, Psych info, Embase, and Cochrane using MESH terms "meditation," "mindfulness," and "Attention deficit disorder with hyperactivity." Articles were screened with eligibility criteria: meditation as the main intervention, participants younger than eighteen, articles published before 2017 with psychosocial quantitative outcomes (i.e. Conners-parent), participants diagnosed with ADHD, and results were published in a peer-reviewed English-language journal.

Results: A total of 46 articles were screened, 12 articles were reviewed in full, and 3 were excluded. 9 articles met eligibility criteria and were included in the review. 1 study specified AA participants and none specified Latinos. 8 studies were non-randomized control trials (non-RCT) and one was a RCT. The RCT study showed improvement of selective deployment of attention and freedom from distractibility ($p<0.01$). Non-RCTs demonstrated improvement in sustained attention ($p <0.05$; 6/10 studies) and ADHD symptoms ($p<.05$; 4/10 studies).

Conclusion: Meditation may be beneficial in treatment of ADHD. All non-RCTs demonstrated significant improvements in sustained attention or reduction of ADHD symptoms. RCTs are needed with Latino and AA patients to further assess meditation efficacy.

Uyen Chu

Affordable care act 2.0: Reimagining health care reform in California

Primary Mentor: Wes Yin, PhD

Background: The Patient Protection and Affordable Care Act is legislation signed in 2010 that represents the most significant health care reform since the establishment of Medicaid and Medicare in 1965. As a part of the ACA, 31 states have created health insurance exchanges in which citizens can purchase qualified health plans with or without federal subsidies. Covered California has enrolled over two million into the state based exchange and almost three million Californians have been routed into its expanded Medi-Cal program.

Objectives: Consulting for Covered CA's Policy, Evaluation, and Research division, this project seeks to determine how best it can take advantage of the 1332 State Innovation Waiver to advance and tailor health care reform in California.

Methods: We employed a data collection strategy of literature reviews, expert interviews, and data set analysis to understand the current health landscape of California. We assessed each policy option based on our main criteria: goals (improving affordability and enrollment) and feasibility (political and fiscal).

Results: We sought the most recurring and viable themes, and discovered the following potential policy options: (1) Asset Testing: A Mechanism to Alter Subsidy Eligibility; (2) Inclusion of Undocumented Adults for Expanding Health Coverage; (3) Increase the Shared Responsibility Payment; (4) Aligning Coverage Through Agency Cooperation; and (5) Creating a New Qualified Health Plan for Young Adults.

Conclusions: Our key findings include the recommendation of the following policy options for Covered CA: (2) Including the Undocumented Adults for Expanding Health Coverage, (3) Increasing the Shared Responsibility Payment, (5) Creating a new Qualified Health Plan for Young Adults.

Jason Hamamoto

How comprehensive and efficient are patient-reported outcomes for rotator cuff tears?

Mentor: Nikhil N. Verma, MD

Background: Increasing emphasis is placed on patient-reported outcomes (PROs) after common orthopaedic procedures as a measure of quality. When considering PRO utilization in patients with rotator cuff tears, several different PROs exist with varying levels of accuracy and utilization.

Objective: Using a novel assessment criterion, this study assessed all commonly used rotator cuff PROs. We hypothesize that surveys with fewer numbers of quesitons may remain comparalbe (with regard to comprehensiveness) to longer surveys.

Methods: Commonly utilized rotator cuff PROs were analyzed with regard to number of survey components, comprehensiveness, and efficiency. Comprehensiveness (maximum score, 11) was scored as the total number of pain (at rest/baseline, night/sleep, activities of daily living [ADLs], sport, and work) and functional (strength, motion/stiffness, and ability to perform ADLs, sport, and work) metrics included, along with inclusion of quality of life/satisfaction metrics. Efficiency was calculated as comprehensiveness divided by the number of survey components.

Results: Sixteen different PROs were studied. Number of components ranged from 5 (UCLA score) to 36 (SF-36, Japanese Orthopaedic Association score [JOA]). The Quality of Life Outcome Measure for Rotator Cuff Disease (RC-QoL) included all 5 pain components, while 7 PROs contained all 5 functional components. Ten PROs included a quality of life/satisfaction component. The most comprehensive score was the RC-QoL (score,11) and the UCLA score was the most efficient.

Conclusion: Many commonly utilized PROs for rotator cuff tears are lacking in comprehensiveness and efficiency. Continued critical assessment of PRO quality may help practitioners identify the most comprehensive and efficient PRO to incorporate into daily clinical practice.

Chris Hanuscin

Socio-demographic and mental health profiles of self-inflicted harm in the U. S. population

Mentor: Shahrzad Bazargan-Hejazi, PhD

Background: 1.5 out of every 1000 ED visits are due to self-inflicted harm in the United States. However, there is limited data analyzing socio-demographic profiles among SIH cases using national data.

Objectives: 1) to examine the socio-demographic and mental health profile of self-inflicted harm (SIH) cases in the U.S. population; and 2) to test the relationship between race/ethnicity and SIH, controlling for other demographic variables, using the National Trauma Data Bank (NTDB).

Methods: This is a retrospective study analyzing the 2007-2012 NTDB (N=101,912) to assess the association between SIH and race/ethnicity, controlling for other socio-demographic variables, psychiatric and substance abuse diagnoses.

Results: Caucasians (70.8%), Hispanics (11.5%), African Americans (11.1%), Asians/other (6.6%). <u>Poisoning</u>: Blacks (OR .728, CI .60-.88), Hispanics (.64, .52- .798), 65+ years (2.4, 1.66-3.43), Psychiatric disorder (2.73, 1.68-4.44), substance abuse (2.37, 1.48-3.80). <u>Anoxic injuries</u>: Black (.77, .604 -.759), Hispanics (.759, .678- .849), 18-34 years (.626, .542- .701), 35-64 years (.588, .518- .667), substance abuse (1.83, 1.3-2.57). <u>Firearms:</u> Black (.633, .583-.688), Hispanic (.475, .436-.517), Asian (.399, .356- .448), 18-34 years (1.43, 1.28-1.6), 35-64 years (1.91, 1.71-2.13), psych diagnosis (.62, .441- .869). <u>Cutting and Piercing:</u> Black (.757, .699 - .821), 18-34 years (1.66, 1.5 -1.85), 35-64 (2.12, 1.91 – 2.36), 65+ (9.12, 7.12 – 11.68), Psych diagnosis (2.45, 1.81-3.34), substance abuse (2.63, 2.0- 3.46). <u>Jumping:</u> Black (.125, 1.15- 1.37), Hispanics (.766, .695- .845), 18-34 years (1.41, 1.25-1.59), 35-64 (1.33, 1.18-1.5), 65 + (4.82, 3.7-6.29).

Conclusions: Within all methods of SIH, minority status and younger age is a protective factor. Older age, non-minority status, psychiatric disorder, and substance abuse are risk factors for SIH.

Kasee Houston

Mitigating small business displacement in the city of Los Angeles

Mentor: John Villaseñor, PhD

Background: This Applied Policy Project aims to answer the policy question: What policy alternatives effectively mitigate vulnerability of small businesses to displacement associated with gentrification in the City of Los Angeles? Most of the research around gentrification is focused on residential tenants. This project focuses on commercial displacement and delivers our client, the Leadership for Urban Renewal Network (LURN) evidence-based policy recommendations they can utilize to develop their policy platform on gentrification.

Objective: To provide policy recommendations that mitigate the vulnerability of small business owners to displacement associated with gentrification in the city of Los Angeles, with a focus on Boyle Heights.

Methods: Used mixed-methods approach with surveys of small business owners, key informant interviews, and literature review. Standardized surveys were administered to 45 small business owners in Boyle Heights between December 2016 and January 2017. 15 semi-structured, open-ended interviews were conducted with various stakeholders, and administered in English. Policy alternatives were identified based on surveys, interviews, and literature, and ability to address identified key issues. Alternatives were further evaluated through SWOT analysis and compared via criteria-alternative matrix.

Results: We identify 6 policy alternatives that meet our objective. Ultimately, approximately 3 policy alternatives will be recommended based on alignment with LURN's mission, political buy-in, economic feasibility, and efficiency.

Conclusion: Small businesses are a valuable asset of communities, and reducing vulnerability to displacement is a priority. We provide recommendations based on input from small businesses, various stakeholders, and literature that can be applied to Boyle Heights and the City of Los Angeles at large.

Ebony King

Potentially inappropriate medications use among underserved African Americans in South Los Angeles

Mentor: Mohsen Bazargan, PhD

Background: Older persons with multiple chronic conditions often receive prescriptions that are contraindicated. The American Geriatrics Society (AGS) reports that potentially inappropriate medications (PIMs) continue to be prescribed to older adults, despite evidence of specific risks of harm. Elderly African American are disproportionally burdened with chronic medical conditions and are at increased risk for use of PIMs.

Objective: The goal of this study is to describe the use of PIMs among a primarily underserved urban elderly African American community.

Method: This cross-sectional study recruited 150 elderly non-institutionalized underserved African Americans aged 65 years and older living in South Los Angeles. Medication used within two weeks was assessed by the drug inventory method. Elicited data pertaining to self-reported medical conditions and medication use were analyzed with the updated 2015 AGS Beers Criteria, to identify participants using PIMs.

Results: Participants reported taking an average of 6.8 prescription drugs (range: 1 – 24). Our data shows that inappropriate drug use occurred in 51% of participants. While the average number of PIM taken was 1.8 drugs, the range was from one to eight medications. Almost 23% of PIMs were drug-drug interactions. The most common PIM was the use of Proton Pump Inhibitors (PPI) and greater than two or more Central Nervous System (CNS) active agents occurring at 46% and 18%, respectively.

Discussion: Our data demonstrate widespread PIM use among older African Americans adults, even after adjustments for the conditional PIM use. There is considerable disparity in PIM use in elderly African Americans compared to the national average.

Bryan Lam

Knowledge, beliefs, and practices regarding HIV pre-exposure prophylaxis among primary care providers in South Los Angeles

Mentor: Raphael Landovitz, MD

Background: Pre-exposure chemoprophylaxis (PrEP) with daily emtricitabine-tenofovir can prevent HIV transmission. However, routine adoption of these practices by primary care clinicians has been limited. Despite the disproportionate burden of HIV infection among Black and Latino men who have sex with men (MSM), there are large racial disparities in the uptake of PrEP in these communities for HIV prevention.

Objective: Determine the knowledge, beliefs, and practices regarding HIV pre-exposure prophylaxis among primary care providers practicing in a predominantly Black and Latino community.

Methods: Between December 2016 and February 2017, primary care providers practicing within the South Los Angeles region were invited to complete an anonymous survey assessing knowledge, beliefs, and practices regarding PrEP. Descriptive statistics were used to characterize physician prescribing intentions and practices.

Results: Surveys were completed by 31 physicians. Participant median age was 53 years, 63% were male, and 55% identified as White, 23% Latino, and 23% Black. 70% of all participants indicated little to no experience in LGBT health care. 55% of all respondents had heard of PrEP, however a minority of participants had ever prescribed PrEP. 45% of all respondents were aware of guidance from the U.S. CDC recommending provision of PrEP to high risk individuals. Participants overwhelmingly identified lack of training and patient request as major barriers to prescription of PrEP in clinical settings.

Conclusions: These findings suggest limited knowledge and uptake of PrEP among primary care providers in South Los Angeles. Interventions to facilitate the provision of PrEP by primary care physicians are needed to increase uptake of PrEP in high risk Black and Latino MSM.

Vinh Lam

Profile of patients with congestive heart failure exacerbations in the emergency department in Los Angeles county

Mentors: Amy Kaji, MD, PhD; Shahrzad Bazargan-Hejazi, PhD; Magda Shaheen, MD, PhD; Deyu Pan, MA

Background: Current literature suggests a higher incidence of CHF in the Black/African American and other minority communities.

Objectives: 1) To examine demographic disparities in CHF exacerbation rates when presenting to the ED in the Los Angeles (LA) County; 2) to compare any disparity between Service Planning Area (SPA) 6 and LA County; and 3) to compare disposition of these patients between SPA 6 and LA County.

Methods: This is a retrospective analysis using the Office of Statewide Health Planning and Development (OSHPD) Emergency Department and Ambulatory Surgery Center database from 2005-2009. The following data were extracted: congestive heart failure, ICD-9 code 428.0, socio-demographics, insurance status, and disposition.

Results: Of 13766 in the study population, non-Hispanic Black/African American population made up 9.1% of the LA County population, but represent 32% of the patients who are diagnosed with CHF in the ED. SPA 6 represents 10.24% of LA county's population, but has the most CHF patients at 22.23% in comparison to the remaining SPA's. Rates of CHF exacerbation across all races and ethnicities have been decreasing from 2005 – 2009, but the ratio of Non-Hispanic Black/African American's with CHF exacerbation in the ED remained the highest. SPA 6 had higher hospitalization rates across all ethnicities in comparison to all of LA County.

Conclusions: CHF continues to predominantly affect Non-Hispanic Black/African American individuals in the LA County. SPA 6 is disproportionately affected in comparison to the remaining seven service planning areas of Los Angeles. These results imply that a patients' zip code, in addition to race and ethnicity, can be a risk factor for increased rates of CHF exacerbation in the ED and hospitalization.

Daniel Mai

The role of parental acculturation and race/ethnicity in childhood influenza vaccination in California – Data from the California Health Interview Survey

Mentors: Magda Shaheen, MD, PhD; Senait Teklehaimanot, MPH

Background/Objective: Prior research showed that influenza vaccination remains lower than recommended among US population with few studies examining the role of race/acculturation. We examined racial variation and the role of acculturation for influenza vaccination in the Californian children populations.

Methods: Analysis of data from 2005-2012 California Health Interview Survey for children <11 years old. The outcome is flu vaccination in the past 12 months. The predictor is race/ethnicity and acculturation measured using 7 items. Bivariate analysis was used to determine the flu vaccination by race/ethnicity, acculturation and population characteristics. Multivariate analysis was used to examine the relationship between flu vaccination and race/ethnicity and acculturation.

Results: Flu vaccination prevalence was 39.7% and was lowest among White (36%) and highest among Asian (52%). Multivariate analysis revealed that Asians are more likely to immunize their kids relative to Whites (AOR=1.9, 95% Confidence Interval [CI]=1.50-2.50, p= 0.001). Non English speaking parents were more likely to immunize their children relative to English speaking parents (AOR=1.3, 95% CI=1.04-1.60, p= 0.02). Children born outside US were less likely to be vaccinated relative to US born children (AOR=0.64, 95% CI=0.50-0.80, p=0.001). Significantly associated factors include parent's age 30-39 years (AOR=0.73, 95% CI=0.58-0.91, p=0.005), uninsured (AOR=0.50, 95% CI=0.40-0.70), and doctor's visit in last 12 months (AOR=2.2, 95% CI=1.60-3.10, p=0.01).

Conclusions: Flu vaccination prevalence among the racial/ethnic groups was low compared to national level. Acculturation level was significantly correlated with flu vaccination. Parent's age, insurance, and doctor's visits were independently associated with flu vaccination. Culturally and linguistically interventions to increase awareness and promote flu vaccine for children are needed.

Imani McElroy

*Readmissions reduction interventions:
A systematic review of what works, what doesn't?*

Mentors: Peyman Benharash, MD; Christian De Virgilio, MD; Alex Schwed MD

Background: As a part of the Affordable Care Act, the Hospital Readmission Reduction Program mandates the penalization of hospitals with excessive readmission rates. Though highly debated, readmissions rates are being used as a surrogate marker of quality of care. Starting in 2017 surgical procedures were added to the list of diagnostic categories subject to penalization. Institutions across the country have begun implementing perioperative readmission reduction protocols in order to prevent incurring fines.

Objectives: In our study we sought to determine what aspects of readmission reduction protocols make them successful and what aspects have not been shown to be beneficial.

Methods: We conducted a literature search using PubMed looking for studies that implemented readmission reduction programs in surgical populations from 2012-2017. Studies were then assessed for eligibility to meet inclusion criteria. Studies that were deemed successful were then evaluated to determine if they shared any similar characteristics.

Results: Of the initial 2752 studies, 25 studies were further assessed and 16 studies met inclusion criteria. Successful interventions included the use of tele-health modalities (7.4% vs. 9.9%, p=0.64), patient checklist (28% initially, 20% post intervention), and home visits with midlevel providers (16% to 10%, p=0.0049). Interventions that did not show reductions in readmissions included preoperative coaching and counseling, and follow-up phone calls.

Conclusions: Readmissions reduction programs provide a unique opportunity for institutions to assess patient care while pushing innovation within health care. Our study also showed that there are multiple interventions that can be used to reduce readmissions.

Elizabeth Pelayo

Parental attitudes about the importance of preschool among Latinos

Mentor: Alma Guerrero, MD, MPH

Background: Preschool enrollment is often lower among Latino families who may stand to benefit given cultural differences in early literacy practices and cognitive stimulation.

Objective: To explore the family, home, and socio-demographic characteristics associated with parental attitudes towards preschool among Latino households.

Methods: Our study was a secondary analysis of the 2005 California Health Interview Survey (CHIS) data. Descriptive and bivariate statistics and multivariate regression models were used to examine the child, home, and socio-demographic factors associated with Latino parental attitudes about the importance of preschool.

Results: The study sample included 5,856 children ages 0 to 5 years of age with an average age 2.4 years. Less than 10% of all parents reported poor attitudes towards preschool. Approximately 1/3 of the study sample was Latino and over half was White. In bivariate associations, a significant and positive trend was observed between positive preschool attitudes and lower levels of acculturation, parental education and poverty. In fully adjusted multivariate regression models, Latino parents were more likely than White parents to report favorable attitudes towards preschool (OR, 4.06; 95% CI 1.49-8.18). Acculturation and family income continued to have independent positive associations with parental preschool attitudes in the fully adjusted model among Latino parents. A gradient relationship only persisted for acculturation in the fully adjusted model, where a significantly lower odds ratio of favorable parental attitudes towards preschool was seen at each level of increasing acculturation.

Conclusion: Our study finds that targeting families with varying levels of income and acculturation, along with other factors, may help to improve preschool outreach and enrollment among Latinos.

Elberth Pineda

Quenching Los Angeles' Thirst: Evaluating Policy Options to Increase Water Cistern Installation in Single-Family Homes

Mentor: J.R. DeShazo, PhD, MS

Background: The recent drought affecting California has brought up several issues regarding the dependence of imported water in metropolitan areas particularly in the southern part of the state. The City of Los Angeles imports nearly 85% of its water supply from three main sources costing approximately one billion dollars annually. In addition to the drought, the expanding population and city development further complicates the issue in meeting the needs of the city's water supply.

Objectives: It is important to find cost-effective ways in which Los Angeles can become less dependent on outside water resources. Water capture from rainfall through cisterns is one way to help alleviate the costly need to imported water and become more self-sufficient. Therefore, policy options need to be identified in order to increase the number of cisterns installed in households through incentives.

Methods: A sensitivity analysis of single-family households on different financial incentive levels was performed to determine a reasonable policy option. Policy alternatives were considered and analyzed using evaluative criteria including equity, financial and political feasibility.

Results & Conclusions: Given that the main objective of this study is to find the most appropriate policy option to increase the number of storm water capture cisterns installed in Los Angeles City, enhancing the current rebate program with a financial incentive level of $1,356 is what is recommended. A rebate program was found to be the most equitable and financially and politically feasible compared to other policy alternatives.

Minerva Pineda

Maternal morbidity trends before and during pregnancy and length of hospital stay and mortality in California 2001-2010

Mentors: Magda Shaheen, MD, PhD; Deyu Pan, MA

Background: Although maternal mortality have continued to decrease (37.1/100,000 in 1960 and 12.1/100,000 in 2003), but due to the large number of births, maternal health is a major public health concern.

Objective: To examine the trend of maternal comorbidities/risk behaviors and its relationship with length of hospital stay and in-hospital mortality in California.

Methods: We analyzed data for 5,247,167 discharges from the Office of Statewide Health Planning and Development for California from 2001 to 2010. We used the International Classification of Diseases, Ninth Revision, Clinical Modification codes to identify the following conditions: chronic hypertension, pregnancy-related hypertension, pre-gestational and gestational diabetes, asthma, thyroid disorders, obesity, mental health conditions, substance abuse, tobacco use, anemia, and obstetric hemorrhage. We used multiple logistic regression and presented the data as adjusted odds ratios (AOR) and 95% confidence intervals (CI) for the relationship between maternal comorbidities/risk behavior, length of stay, and in-hospital mortality.

Results: We found that comorbidities/risk behaviors, hospital length of stay of =>4 days have increased overtime from 2001-2010 but the overall mortality has decreased. In the multivariate analysis, maternal comorbidities/risk behaviors were independently associated with longer hospital stay (=>4 days) [highest: hypertension (AOR=4.15, 95% CI=4.12-4.18); lowest: tobacco use (AOR=0.79, 95% CI=0.77-0.80). In-hospital mortality was independently associated with hypertension (AOR=5.33, 95% CI=4.27-6.66), substance abuse (AOR=4.07, 95% CI=2.04-8.13), anemia (AOR=1.91, 95% CI=1.04-3.51), and obstetric hemorrhage (AOR=13.66, 95% CI=10.94-17.05).

Conclusions: The prevalence of comorbidities before and during pregnancies continues to increase overtime in California. Maternal comorbidities, especially hypertension increase the length of hospital stay. Obstetric hemorrhage and hypertension are the major risk factors associated with high in-hospital mortality.

Ernesto Ramirez

Investigating the gender difference in hypertension treatment and blood pressure control in US adults

Mentors: Shahrzad Bazargan-Hejazi, PhD, Senait Teklehaimanot, MMH; Magda Shaheen, MD, PhD

Background: Although effective anti-hypertensive medications have existed for decades only about half of hypertensives are considered controlled. Limited research has investigated the gender difference in the utilization and efficacy of hypertension treatment.

Objectives: To examine: 1) gender difference in the treatment of hypertension among the U.S. adult with hypertension, and 2) the gender difference in the effect of treatment on control of blood pressure among the treated U.S. adult hypertensive population.

Methods: Analysis of data from NHANES (1999-2012) of adults $\geq$ 18 years old hypertensive (BP $\geq$ 140/90, currently taking antihypertensive medication, diagnosed by a physician). We included gender, age, race/ethnicity, obesity, smoking, comorbidities, medication, and routine place for care as independent variable. We used multivariate logistic regression in STATA V14 (consider sampling design and weight) and $p<0.05$ indicated statistical significance.

Results: Of the 15,719 participants, 52% were women, 44% were =>60 years old, 14% were Blacks, 19% were smokers, 46% were obese, and 49% used antihypertensive medication (of whom 49% had controlled blood pressure). Age, race/ethnicity, smoking status, obesity, regular source of care, and the use of antihypertensive medication varied significantly by gender ($P<0.01$). In the multivariate analysis, female was more likely to use antihypertensive medication relative to men (Adjusted OR [AOR]=1.12, 95% Confidence Interval [CI]=1.02-1.22, $p<0.05$). Among the treated participants, there was no association between control of hypertension and gender (AOR=0.96, 95% CI=0.84-1.10, $p>0.05$).

Conclusions: Our study showed that women are more likely than men to use antihypertensive medication. However, among the treated individuals, the efficacy of the treatment to control blood pressure is equal among men and women.

Janelle Rodriguez

Curbside women's health alliance

Mentors: Margarita Loeza, MD; Shahrzad Bazargan, PhD; Dulcie Kermah, EdD, MPH

Background: Service Planning Area 6 in Los Angeles County has the highest incidence of chlamydia and gonorrhea infections; HIV mortality rates; cervical and breast cancer death rates. We evaluated the ability of a population-specific tailored curriculum to enhance health literacy and preventative health practices among Shields for Families' (SF) female clients.

Methods: SF's female adult clients were invited to attend group sessions, which emphasized age specific preventative health services. Participants were subsequently invited to attend the Curbside Women's Health Alliance's community health fair. Appointments and transportation were provided. Fisher exact statistics evaluated curriculum effectiveness on pre and post-session evaluations utilizing the STATA 14 statistical software.

Results: There were a total of 61 participants with an average age of 33 years. Nearly 30% were either uninsured or unclear of their insurance plans. Preliminary assessments suggested greater awareness of breast cancer screening (31%) compared to cervical cancer screening (11%). A greater awareness of HIV transmission (86%) than the complications of untreated cases of chlamydia and gonorrhea (37%) was also suggested. Post-assessment evaluations indicated an enhanced understanding of cervical (65%) and breast (75%) cancer-screening criteria (*p>0.05*) and the associated complications of untreated chlamydia and gonorrhea (68%) (*p>0.05*).

Conclusion: At baseline there was a significant difference in participant's knowledge of breast cancer compared to cervical cancer. There was a significant difference in the awareness of HIV transmission compared to the associated complications of untreated cases of chlamydia and gonorrhea. Group sessions improved knowledge among participants.

Alvaro Santamaria

Tissue phantoms for the development of an optical feedback system for use in laser interstitial thermal therapy

Mentors: Leonard Marks, MD; Rorry Geoghegan, BS, MS

Background: Prostate cancer is the 2nd most common cancer in men, with an average age of diagnosis of 66, and highest disease-specific mortality in black men. Prostate cancer is traditionally treated with radical prostatectomy or active surveillance. Up to one-third of those managed with active surveillance receive invasive therapy after a median time of 2.5 years of surveillance. Laser Interstitial Thermal Therapy (LITT) offers a minimally invasive, low cost, solution to a subset prostate cancer patients that would otherwise be treated with invasive surgery.

Objective: To develop tissue phantoms with optical properties similar to that of prostate tissue to then test a novel optical feedback system for detecting coagulation of tissue during Laser Interstitial Thermal Therapy.

Methods: Tissue phantoms were created using acrylamide/bis-acrylamide with either napthol green or a thermochromic dye to mimic the optical properties of prostate tissue. Absorbance of phantoms was then determined using a spectrophotometer and optical feedback system.

Results: Results show that the absorbance coefficient for Napthol Green Acrylamide gels can provide an absorbance coefficient within range to what has been provided in literature for prostate tissue, 0.46 1/cm. Fit curves comparing absorbance coefficients measured in a spectrophotometer versus optical feedback system have similar slopes.

Conclusion: Acrylamide tissue phantoms are of great value in developing an optical feedback system to monitor tissue coagulation during to LITT, as they can provide reproducible optical properties for testing.

Lagina Scott

Determining socioeconomic and racial/ethnic disparities in bicycle helmet use and bicycle-related injury outcomes amongst adults and children in the United States

Mentor: Shahrzad Bazargan-Hejazi, PhD; Steven L. Lee, MD, FACS, FAAP; Magda Shaheen, MD, PhD

Background: In recent years, there have been an estimated 800 bicycle-related deaths and 500,000 Emergency Department (ED) visits due to bicycle-related injuries annually. However, a majority of children and adults in the US do not wear helmets while riding a bicycle.

Objective: To determine variations in helmet use according to race/ethnicity, socioeconomic status, and age in the US, as well as the variations in bicycle-related injury outcomes amongst the helmeted verse non-helmeted bicyclists based on race/ethnicity, socioeconomic status, and age in the US.

Method: This is a cross-sectional analysis of the National Trauma Data Bank (NTDB) from 2002-2012. This databank includes more than 2.7 million trauma cases from more than 900 participating trauma centers. Our study population included all patients in bicycle-related injuries in the United States who were subsequently treated at trauma centers, as recorded by the NTDB. The independent variables collected were age, gender, race/ethnicity, and insurance status (a proxy measure for socioeconomic status). The dependent variables evaluated were helmet use, injury severity (based on Injury Severity Score, Abbreviated Injury Score for Head injuries, and GCS), ED length of stay, ICU length of stay, hospital length of stay, discharge disposition (a proxy measure for morbidity), and mortality.

Results: Preliminary data analysis shows that Hispanic and Black bicyclists are three times less likely to use helmets compared to their White and Asian/Pacific Islander counterparts. Additionally, bicyclists who are publically insured or uninsured are three times less likely to use helmets compared to their privately insured counterparts.

Conclusion: Preliminary data demonstrates that disparities exist in helmet use among bicyclists across socioeconomic status and racial/ethnic minority groups. Our findings help identify Hispanic, Black, publically insured, and uninsured bicyclists as at-risk groups who would benefit most from targeted efforts to increase bicycle helmet use. Further research should be conducted to investigate the reasons for disparities in helmet use among bicyclists in order to construct targeted interventions for these groups.

Adia Scrubb

Safety net clinic utilization pre and post affordable care act: John Muir Mobile Health Clinic

Mentor: Kishore Nath, MD

Background: The passage of the Affordable Care Act in 2010 allowed the state of California to create an insurance market place and expand its Medi-Cal program eligibility. The 2014-2015 California state budget anticipated a reduction in indigent care due to the Medi-Cal expansion, and thus planned for a reduction in funding for safety net clinics. The funding of some safety net clinics that continue to service low income populations, such as the John Muir Health Mobile Clinic in Contra Costa County, is uncertain given the change in clinic population.

Objective: This project seeks to analyze the changes in utilization of services of the Mobile Health Clinic patient population, and determine the services that offer optimal value.

Methods: A sample of patient visit data was collected between June 2012 to July2013 representing the "pre ACA" period, and June 2014 to July 2015 representing the "post ACA" period. This was compared to the master clinic census between 2010 and 2015. Test of proportions and logistic regression analysis were performed.

Results: Variables that show statistically significant differences between pre and post ACA groups include chronic illness visits $p<.001$, diabetes care visits $p<.001$, ER visits $p<.001$, and insurance status $p<.001$.

Conclusions: The patient population experienced expected changes between the pre and post ACA groups which included a decline in patients under the age of 30. However, the increase in insured patients and ER use indicates that insurance does not improve access to care. The increase in chronic illness visits warrants modification to clinic protocols to increases services for non-diabetic chronic illness.

Brandon Stark

The role of acculturation in determining pre-operative anesthesia-related concerns

Mentors: Kenneth Lewis, MD; Senait Teklehaimanot, MPH; Shahrzad Bazargan-Hejazi, PhD; Magda Shaheen, MD, PhD

Background: Little is known about the effect of acculturation in the pre-operative setting and its relation to concerns of preoperative complication.

Objectives: To examine the general anesthetic-related complications that patients are mostly concerned about during their pre-operative interview and to determine their relationship and level of acculturation.

Methods: Cross-sectional study of patients of Mexican heritage from Martin Luther King, Jr. Community Hospital's pre-operative clinic who were scheduled for a procedure requiring general anesthesia. Self-administered questionnaire were used to assess the concerns for various complications using scales of the most common anesthetic-related complications. Level of acculturation was measured using the Acculturation Scale for Mexican-Americans-II. $p<0.05$ was set as statistically significant.

Results: Of the 64 participants, 59% were categorized as 'Very Mexican Oriented'. The most common concerns reported were altered mental status (36%) and nausea/vomiting (33%). In the multivariate analysis, acculturation was not associated with any concern for participants. Relative to younger participants, older participants were more likely to be concerned about sore throat (adjusted odds ratio [AOR]=1.1,95% confidence interval [CI]=1.01-1.17) and less likely to be concerned about altered mental status (AOR=0.94, 95% CI=0.88-0.99). Females were more likely to be concerned about nausea/vomiting relative to men (AOR=4.7, 95% CI=1.05-20.88). Participants with <=high school were less likely to be concerned about headache compared to those with >high school (AOR=0.225, 95% CI=0.05-0.99).

Conclusions: The study showed that altered mental status and nausea/vomiting were the most common concern for participants. Level of acculturation was not associated with any of the concerns for the participants. Factors associated with reported concerns were age, gender, and education.

Hoover Wu

BMI and severity of gallstone pancreatitis: A systematic review

Mentors: Stacey Teruya, EdD, MS; Shahrzad Bazargan-Hejazi, PhD; Katherine Russell, PhD, MLS; Chizobam Ani, MD

Background: Numerous studies have shown obesity as an indicator for a more severe course of acute pancreatitis. Many of these studies looked at all-cause acute pancreatitis, even though the most common etiology is of biliary origin.

Objective: To conduct a systematic review to examine the association between obesity and more specifically, gallstone pancreatitis. Methods: We performed a PubMed search for references related to obesity and gallstone pancreatitis. MESH terms included obesity, body mass index, or overweight and gallstone pancreatitis or biliary pancreatitis. English was the primary language. In addition, we conducted back referencing to find relevant sources. Cohort studies from 1990 to 2016 were reviewed. Relative risk and odds ratios were extracted from original articles.

Results: Of 63 abstracts; 38 were excluded. Twenty-five articles were reviewed, of which 20 were related to obesity and all-cause pancreatitis. Eight studies focused on acute pancreatitis associated with anthropometric measures. Findings included: 1) obese patients diagnosed with acute pancreatitis have higher mortality; 2) obese patients with acute pancreatitis have a higher risk of developing local complications; 3) obesity predisposes to a complicated course of acute pancreatitis; 4) higher BMI was associated with severe acute pancreatitis secondary to gallstones; however, with no increase in mortality. The majority of studies defined severity of acute pancreatitis according to the Atlanta criteria.

Conclusions: Obese patients with acute pancreatitis secondary to gallstones had increased severity of clinical course. Further research is warranted with strict patient selection, measurement techniques for body weight, and criteria for defining severe acute pancreatitis.

Marisa Yanez

H.e.a.l.'s influence on blood pressure status in rural Haiti: A descriptive study

Mentor: Susan Partovi, MD

Background: H.E.A.L. (Healthcare, Empowerment, Advocacy, Leadership) is a non-profit organization that provides primary care services annually to the townspeople of Musotte, Haiti. While volunteer medical students and physicians have been annually treating the people of Musotte for the past nine years, there has not been any investigation into whether the organization's intervention in Musotte has been effective. In 2014, a study performed during the H.E.A.L. mission trip investigated the disease burden in Musotte and found that hypertension was the most prevalent disease.

Objective: Investigate whether H.E.A.L.'s intervention reduced the prevalence of patients with blood pressure (BP) in the hypertensive range from 2015 to 2016.

Methods: Our analyses were based on a total of 748 participants with complete data on BP measurements. Data was analyzed using SAS v 9.4. Chi-Square tests were used to test the association between patients' BP status and the year patients were seen.

Results: 2015 patients: 38 (15%) patients had BP <120/80 mmHg, 104 (40%) had BP of 120-139/80-89 mmHg, and 116 (45%) had BP ≥150/90 mmHg. 2016 patients: 37 (12%) had BP <120/80 mmHg, 126 (42%) had BP of 120-139/80-89 mmHg, and 138 (46%) had BP ≥150/90 mmHg. Both 2015/2016 patients: 30 (16%) had BP <120/80 mmHg, 72 (38%) had BP of 120-139/80-89 mmHg, and 87 (46%) had BP ≥150/90 mmHg.

Conclusion: There was no statistical difference in BP status in 2016 compared to 2015. Further research needs to be conducted with follow-up of the same patients.

The CDU Medical Student Research Thesis Program (MSRTP)

Shahrzad Bazargan-Hejazi, PhD, *Chair*
Stacey Teruya, EdD, MS, *Education and Training Manager*

Wishes to thank the following individuals for their invaluable help and support in our 2017 event:

David Carlisle, MD, PhD
President, Charles R. Drew University

Steve Michael, PhD
Provost, Charles R. Drew University

Deborah Prothrow-Stith, MD
Dean, College of Medicine, Charles R. Drew University

Daphne Calmes, MD
Associate Dean of Medical Student Affairs, Charles R. Drew University

We would like to acknowledge the endless support of:

- The AXIS program under the leadership of Jay Vadgama, PhD, Vice President for Research and Health Affairs
- The Urban Health Institute under the direction of Keosha R. Partlow, PhD, MPH
- The Research Design and Biostatistics Core under the direction of Magda Shaheen, MD, PhD, and Core members Senait Teklehaimanot, MPH, Dulcie Kermah, EdD, MPH, and Deyu Pan, MS

for providing statistical, methodological, and technical support to our medical students.

We also acknowledge the kind assistance and efforts of the following CDU individuals and their departments:

- Joseph Corrao, Executive Director of Admissions and Student Affairs
- Kenny Torrence, Assistant to the Dean, College of Medicine
- Office of Medical Student Affairs Staff: *Brandon Williams, Brittney Miller, Patricia Avila, and Kay Lynn Ceja*
- Saleemah Glover, MPH Student, Charles R. Drew University
- Junko Nishitani, PhD, Margie Dike, PhD, and George Marks, Jr., MD, *Charles R. Drew University Institutional Review Board (IRB)*
- Darlene Parker-Kelly, MSLS, Katherine Russell, PhD, Dennis "Mike" Curtis, Jabbar Hart and Linda Towles, *CDU Health Sciences Library/Learning Resource Center (LRC)*
- Wanda Boyd, *Office of General Studies, CDU College of Science and Health*
- La Vonne Gordon and the Staff of CDU Facilities
- Dave Martin II, *CDU Public Safety*