

# EVMS-Sentara Healthcare Analytics and Delivery Science Institute

*Understand, Implement, Impact*

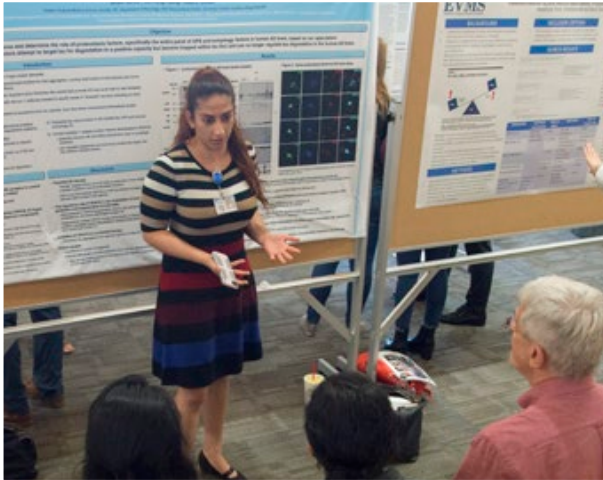
## 2018 REPORT



# Patient care



## Research



# Education



# Community Service



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# CONTACT INFO

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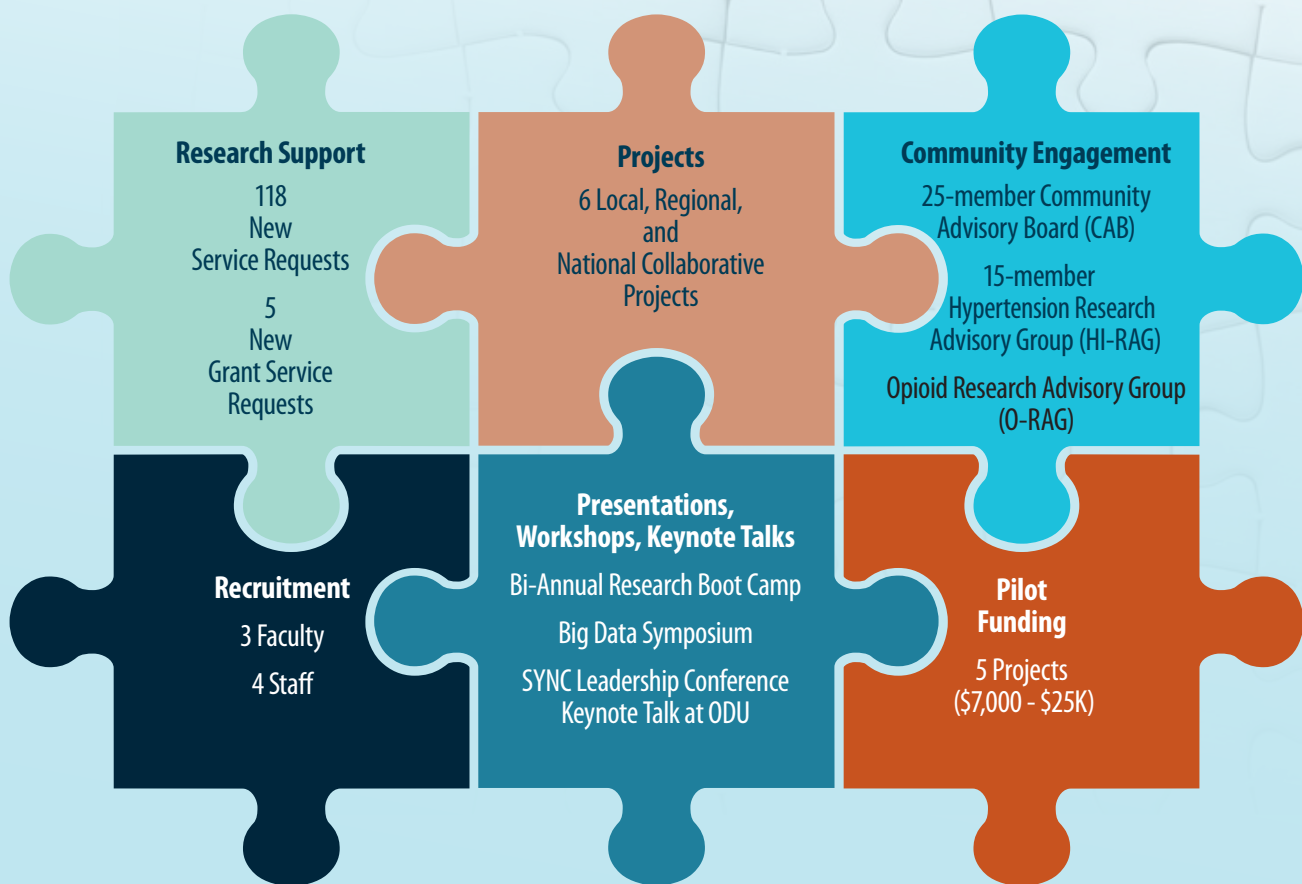
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# HADSI 2018 AT A GLANCE



FOR THE PERIOD  
JANUARY 2018 - DECEMBER 2018

# LETTER FROM THE DIRECTOR



As 2019 begins, it is a great opportunity to reflect on our accomplishments of 2018 and ongoing endeavors here in the EVMS-Sentara Healthcare Analytics and Delivery Science Institute.

As the founding Director of the EVMS-Sentara Healthcare Analytics and Delivery Science Institute (HADSI), I am humbled when I reflect on the amazing accomplishments of this institute over the past year. It has been exciting to be part of the growth and evolution of HADSI and to have the opportunity to work with the multi, trans- and interdisciplinary scientists and clinician researchers of within and across the region. In the following pages, I share with you a few examples of the successes of the HADSI team in 2017-2018 and highlight some ways the HADSI team plans to grow in the years to come.

When HADSI was established in 2016-2017, it was a novel endeavor of EVMS President Richard V. Homan to leverage the expertise and resources of EVMS and Sentara to improve the health of the Hampton Roads community. This innovative nature of HADSI has attracted a broad group of biostatisticians, epidemiologists and health-outcomes researchers to the team. In these urgent and opportune times, HADSI core faculty, staff, EVMS and Sentara leadership and healthcare professionals have constructively addressed many pressing, dynamically changing and important issues before us. These efforts have further been invigorated by HADSI partners, collaborators and affiliates, who have contributed to furthering our HADSI mission. Through research, teaching and service projects to improve our understandings of how the quality of decision-making and thus quality of healthcare can be improved, HADSI has been engaged in a range of activities that are outlined in the pages that follow here.

Collectively, we in HADSI have identified three priority areas of engagement with our ongoing work:

- Improving patient care and outcomes by leading the EVMS and Sentara efforts in applying rigorous, high-quality data mining and analytic science skills to drive new advances and thus improving the value proposition of delivery of care.
- Community Services by addressing health disparities within Hampton Roads through research, by providing research methods, analytic and Informatics expertise and resources (Pilot funding).
- Developing the next generation of healthcare analytics and delivery science experts through training.

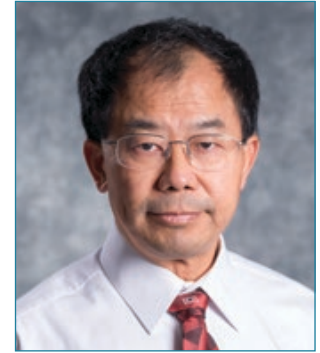
In short, you'll spot imprints of these key achievements among the highlights noted in this report. From my vantage point as the Founding Director of HADSI, I am very proud of our HADSI efforts to develop, maintain and continue active collaborations so that scientific work finds traction in healthcare and delivery-science arenas in Hampton Roads and beyond. I hope you will enjoy reading through this report and getting a sense of our accomplishments from 2018, and our activities going forward.

**Sunita Dodani, MBBS (MD), FCPS, MSc, PhD, FAHA**  
*Founding Director, EVMS-Sentara Healthcare Analytics and Delivery Science Institute*  
*Professor of Medicine, EVMS*

# MEET THE TEAM



**Sunita Dodani, MD, PhD**  
Founding Director  
RESEARCH INTERESTS:  
*Implementation and Outcome Research,  
Cardiovascular Health Disparities*



**Jiangtao Luo, PhD**  
Assistant Director  
RESEARCH INTERESTS:  
*Statistical Genetics and Genomics,  
Public Health Study Design*



**Brynn Sheehan, PhD**  
Assistant Professor  
RESEARCH INTERESTS:  
*Substance Use and Abuse, Stress  
and Self-Regulation, Health  
Behaviors and Disparities*



**Joshua Edwards, MPH**  
Manager, HADSI and  
Community Research  
RESEARCH INTERESTS:  
*Community-based participatory  
research (CBPR), Cardiovascular  
Disease Health Disparities,  
Translational Research*



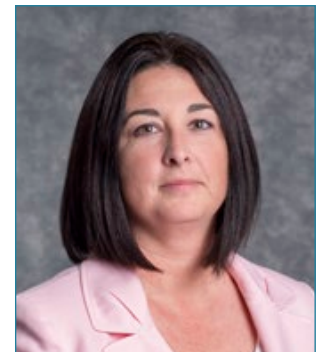
**Jaclyn Simpkins, PhD**  
Faculty Instructor  
RESEARCH INTERESTS:  
*Cardiovascular disease,  
Biomarkers, Genome-wide  
Association Studies*



**Lauren Green, MPH**  
Clinical Data Specialist  
RESEARCH INTERESTS:  
*Big Data Analytics,  
Infectious Diseases, Cancer,  
Related Health Disparities and  
Outcomes Research*



**Carter Overton**  
Office Coordinator



**Kristi Morgan, DNP**  
Manager, Sentara SQRI  
(Sentara Partner)  
RESEARCH INTERESTS:  
*Critical Care Nursing, Evidence-  
Based Practice Implementation*

# HADSI SERVICES AND ACTIVITIES

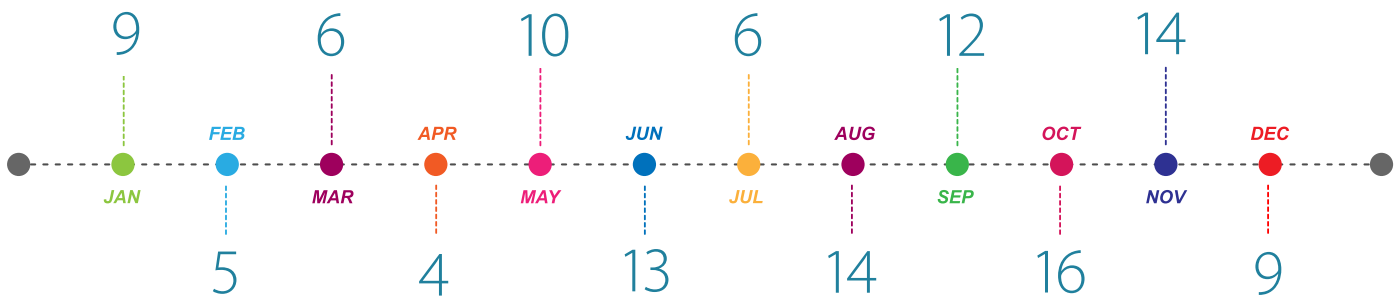
EVMS-SENTARA HADSI: UNDERSTAND, IMPLEMENT, IMPACT





# SERVICE REQUESTS AT A GLANCE

## 2018 Service Requests per Month



## Type of Service

Abstract Preparation: 15  
 Data Analysis: 91  
 Database Design: 30  
 Publication Preparation: 30  
 Data Extraction: 27  
 Database Management: 26  
 Grant Submission: 11  
 IRB Assistance: 40  
 Power Analysis: 46  
 Protocol Development: 27  
 Sample Size Calculation: 35  
 Study Design: 54  
 Study Research: 16  
 Other: 23

## Fun Facts:

- 150 % Increase in Student Projects
- 80 % Increase in Resident Projects
- 90 % Increase in Assistance with Grant Writing / Grant Submission

## Service Requests by Year

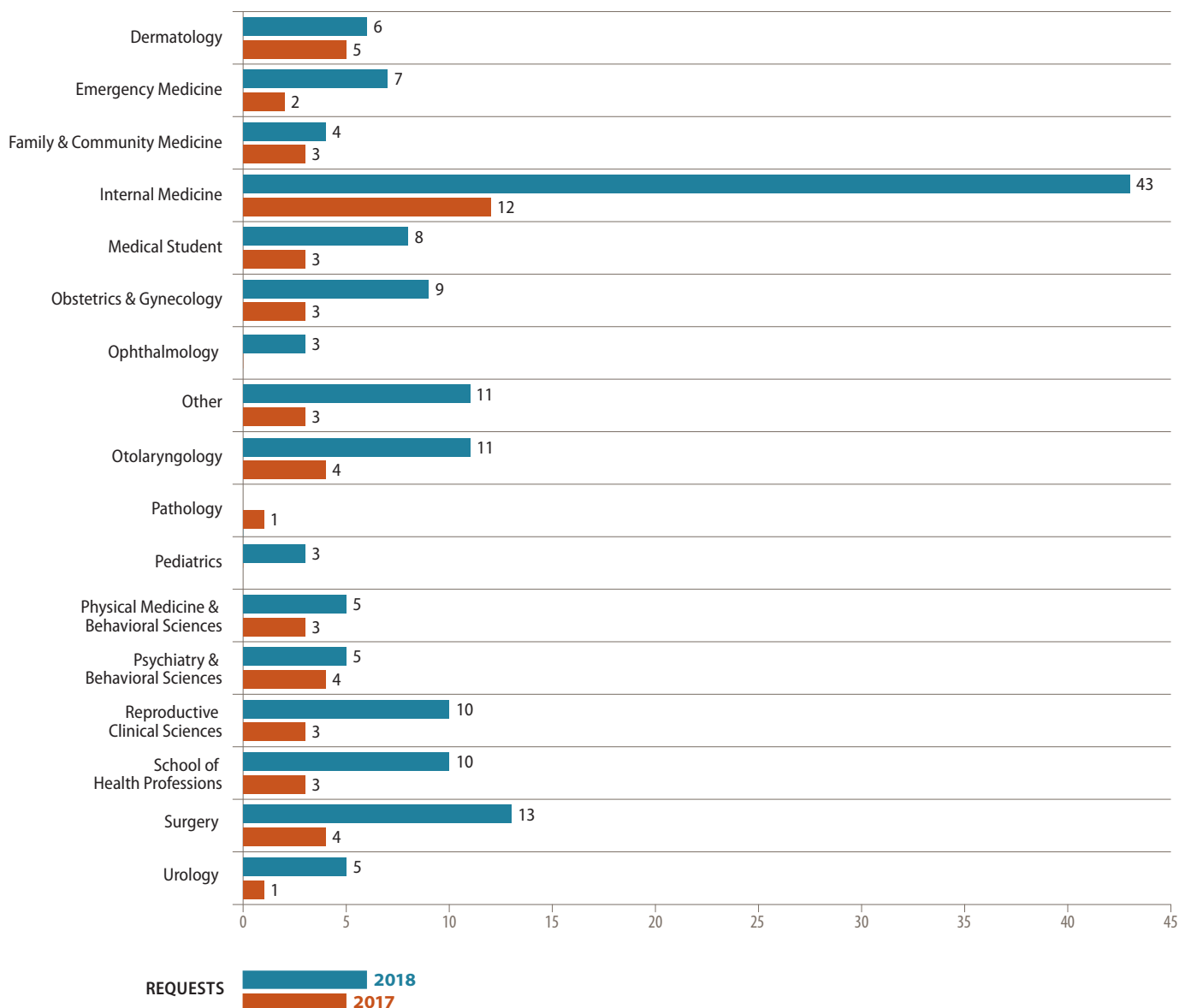






**HADSI's establishment coincides with a resurgence in student interest in research. HADSI supports a broad range of research projects across EVMS and Sentara.**

## Service Request Comparison by Year



# HADSI Funded Projects

In addition to carrying out its education and community initiatives, the EVMS-Sentara Healthcare Analytics and Delivery Science Institute awards grants that exemplify the highest level of collaboration and scientific advancements. These grants are made available through a partnership between EVMS and Sentara with the goal of conducting focused and prioritized research in healthcare analytics and delivery, translational research, population health, clinical trials, and community health disparities. The following is a list of the groundbreaking projects HADSI has funded to date:

## ROUND 1- FEB. 2017 (\$10,000)

### \* JOHN BRUSH, MD/SENTARA

Health Disparities, Diabetes & its complications  
*"Epidemiology, Outcomes, and Disparities Among Patients with Type-2 Diabetes Mellitus Undergoing Cardiovascular Revascularization Procedures"*

### \* MEGAN CLAY, RN/SENTARA

Critical Care Nursing, Evidence-Based Practice Implementation  
*"Benefits of a Mobile Health Clinic on Health Outcomes in an Underserved Community: A Program Evaluation"*

### MARISSA GALICIA-CASTILLO, MD/EVMS

Quality of Life Research, Cost Utilization  
*"Relationship of Advanced Care Plans (ACP) in the seriously ill patient and quality and cost of care during hospitalization"*

### KENT LAM, MD/EVMS

Olfactory Physiology, Nasal Drug Delivery Devices  
*"Indications, Outcomes, and Utilization Trends in the Surgical Management of Epistaxis: An Evaluation within the Sentara Healthcare System 2000-2017"*

### \* DAVID LIEB, MD/EVMS

Thyroid Cancer Management, Type 1 and 2 Diabetic Complications  
*"Epidemiology and disparities of thyroid cancer in Hampton Roads; whether quality outcomes are associated with health disparities"*

### \* BRIAN MARTIN, PHD/EVMS

Access to care, financing healthcare services, cost/benefit analysis, and healthcare workforce development  
*"Social Determinants of Treatment Disparities in Cutaneous Melanoma"*

### DEBORAH MORRIS, MD/EVMS

Hospice and Palliative Medicine  
*"Cohort Validation Study of PREDICT: Automated Mortality Risk Assessment Tool in EMR"*

### ELIAS SIRAJ, MD/EVMS

Cardiovascular disease in the diabetic population, Post-transplant diabetes  
*"Outcomes before and after implementation of an integrated Cardiovascular Diabetes Program at EVMS-Sentara Heart Hospital"*

## ROUND 2- DEC. 2017 (\$10,000)

### \* MARYBETH HUGHES, MD/EVMS

Neuroendocrine Tumors, Colorectal Cancers  
*"Individual and neighborhood predictors of late stage colorectal cancer and mortality, Virginia 2008-2016"*

### MICHAEL HOOPER, MD/EVMS

Clinical Informatics, Critical Care  
*"Determining the Association between Dysfunctional High Density Lipoprotein Levels and Clinical Outcomes in Patients with Severe Sepsis"*

\* Projects focusing on health disparities.

✧ **JEFF MCTAVISH, MD/SENTARA**

General Radiology, Radiologic Interventions  
*"Early Diagnosis of Lung Cancer through Barrier Identification and Process Improvement"*

✧ **BEVERLY ROBERTS-ATWATER, DO, PHD/EVMS**

Cerebro-Vascular Rehabilitation, Sub-Acute  
*"Rehabilitation Prescribing Opioids: Patterns of Use, Disparities and Functional Outcomes, From Trauma to Post-Acute Rehabilitation"*

✧ **ABBY VAN VOORHEES, MD/EVMS**

Psoriasis and Eczema Research  
*"Health Disparities in Misdiagnosis: An Examination of the Prevalence of Pseudocellulitis and Cellulitis in Adult Patients in the Hampton Roads region using the Sentara Healthcare System Electronic Health Record"*

**GREG WEINGART, MD/SENTARA**

Emergency Department Utilization  
*"Evaluation of the Emergency Department usage after a Hurricane: Identifying At-Risk Populations"*

**ROUND 3- DEC. 2018 (\$ UP TO 25,000)**

**PAUL ARAVICH, PHD/EVMS**

Cognitive and Emotional Impact of Brain Injury  
*"Computer Engagement in Cognitively Impaired Nursing Home Patients"*

**TRACY FU, PHD/EVMS**

Family and Community Based Interventions  
*"Effect of the 2016 CDC Guideline for Prescribing Opioids for Chronic Pain and the Subsequent Legislations on Opioids Prescription and Patient Outcomes in Hampton Roads"*

**THOMAS MCCUNE, MD/EVMS**

*"Utilization of In-Patient Critical Care Systems Rapid Identification of Acute Kidney Injury in Hospitalized Patients"*

**AARON NELSON, MD/EVMS**

Diabetes, Cardiovascular Disease/Heart Failure and Calcium Disorders  
*"Efficacy of Flash Glucose Monitoring During the Transition from Inpatient to Outpatient Care in Patients who have had Coronary Artery Bypass Graft (CABG) Surgery"*

**HAMID OKHRAVI, MD/EVMS**

Quality of Life, Impact of Mild Cognitive Impairment  
*"Effects of CMS National Partnership Antipsychotic Medication Reduction on Mortality and Incidence of Major Cardiovascular Events in Long-Term Nursing Home Residents"*



**Abby Van Voorhees, MD, was a round two awardee.**

# PRESENTATIONS, WORKSHOPS AND KEYNOTE TALKS

## BIG Data

HADSI and the EVMS Faculty Affairs and Professional Development Office proudly hosted the 1st **Annual Big Data Symposium in 2018**. The symposium was centered around the utilization of big data resources including electronic medical records (EMRs), pharmaceutical research, and lifestyle data (fitness trackers, smartphones, etc.).

Dr. Lawrence A. Tabak, Principal Deputy Director of the National Institutes of Health and Deputy Ethics Counselor of the NIH, served as the keynote speaker.

Clinicians, Residents, and EVMS Students participated in an immersive **research bootcamp** focusing on generating research questions, choosing the correct methodology, developing a statistical analysis plan, and the basics of research on human subjects protection.

**Research Computing Day** is sponsored by Research Computing Services, part of Information Technology Services (ITS) at ODU, to showcase the computational and data-intensive research performed by our own faculty, researchers and students. This event also promotes awareness of the research resources offered by ITS to support research success at ODU, highlighting exciting new resources and services that benefit researchers on campus.

Dr. Dodani served as the 2018 Keynote Speaker and presented on “Bridging Healthcare Data Through Clinical Informatics and Machine Learning Tools.”



# COMMUNITY ENGAGEMENT HIGHLIGHTS

## Community Advisory Board

- This program collaborates with more than 30 community partners across Southeast and Northern Virginia who represent ethnic minority organizations, public/government organizations, churches, and affiliates serving low-income minority populations.
- Primary focus is to embark on a population health initiative to improve minority health disparities within the region through research, teaching, and service.

## Community Needs Assessment

- A comprehensive health literacy and needs assessment tool that will be disseminated in multiple areas within Norfolk.
- Main outcomes will focus on chronic disease management, substance use/abuse, and health education.

## Hypertension Research Advisory Group

- 20-member group of EVMS and Sentara research experts.
- Focused on improving hypertension health outcomes and creating opportunities to address the uncontrolled hypertension pandemic of Hampton Roads.

## Healthy Eating and Living Spiritually (HEALS)

- 6-month lifestyle intervention centered around hypertension control in under-resourced African American communities.
- HEALS Med-Tech: A hypertension management program implementing a combination of a) adherence to medications and medication regimen, and b) an Interactive telehealth strategy to combat barriers to access to healthcare.

# MOVING FORWARD



## NIH RESEARCH

- ☐ Become an NIH Designated Institute
- ☐ Recruit Health Outcomes NIH Researcher

## MACHINE LEARNING AND BIG DATA

- ☐ Develop Predictive Modeling Applications
- ☐ Expand TriNetX and VHI Service

## COMMUNITY ENGAGEMENT

- ☐ Lifestyle Modification Intervention  
(HEALS Med-Tech)
- ☐ Partnership with Hampton VA
- ☐ Partnership with American Heart Association

## EDUCATION

- ☐ Expand Health Professions Curriculum
- ☐ Research/ Grant Writing Workshops
- ☐ Big Data Bootcamps

## COLLABORATION

- ☐ VCU P30/CTSA
- ☐ Cancer Survivorship Program
- ☐ Opioid Consortium
- ☐ Cancer Consortium

# 2018 HADSI ACCOMPLISHMENTS

## Grants

- Dodani, S. (Co-Investigator). NIH P30 Supplement on "Massey Cancer Center Impact Area Population Health Assessment." Funding Agency: NIH-NCI
- Dodani, S. HEALS Program effectiveness in controlling blood pressure in Veterans. Funding Agency: Hampton VA Medical Center
- Simpkins, J.E. (Co-Investigator). NSPIRES on "Impact of combined radiation, hind-limb unloading and social isolation on cognitive flexibility, temporal perception, gait control, and egress ability." Funding Agency: NASA
- Morgan, M., Bowdwin, B., Maduro, R., Ver Schneider, P. Logistic Model Predicting the Odds of Requesting Regional Resource Pool Assistance (SNGH, SPAH, SLH, SVBGH [SI ED]). Lois Kercher Foundation, \$4,000. Received June 2018.

## Awards

- Dodani, S. Commitment Award. Awarded by the National Forum for Heart Disease and stroke Presentation at the Annual meeting. Washington DC. October 2018 (<https://www.nationalforum.org/2018-annual-meeting/>)



**Dr. Sunita Dodani, Director of HADSI, and the Mayor, Green Bay County, Wisconsin, received the Community Award for significant contributions in cardiovascular diseases at the National Forum for Heart Disease and Stroke Prevention Annual Meeting in Washington, DC.**

## Presentations

- Dodani, S. HADSI Visions and Roles. Presented at the EVMS Board of Visitors meeting. Eastern Virginia Medical School, Norfolk, VA. February 2018
- Dodani, S. Identifying Opioid Overdose Patients Using Natural Language Processing, a Statewide Effort. Presented at the Annual meeting of HIMSS Virginia Chapter. University of Virginia, Charlottesville, VA. June, 2018 (<http://va.himsschapter.org/event/creating-and-using-analytics-improve-care-through-research-and-operations-collaboration>)
- Dodani, S. Round Table at the National forum for heart disease and stroke prevention Annual meeting. Washington DC. Oct 2018 (<https://www.nationalforum.org/2018-annual-meeting/>)
- Dodani, S. HADSI- Bridging Healthcare data through Clinical Informatics and Machine Learning Tools. Keynote presentation at the annual research day of Old Dominion University, Norfolk, VA. October 2018.
- Dodani, S. Keynote talk on "the International day of people with disability" at the New York Indian Consulate (Video presentation). December 2018
- Sheehan, B. E. (November 2018). Data planning, analysis, and HADSI services. Talk presented to the Residents Research Boot Camp, Eastern Virginia Medical School, Norfolk, VA.
- Sheehan, B. E. (February 2018). Developing and planning your research study. Talk presented to healthcare nurses and researchers, Sentara Healthcare Quality Research Institute, Norfolk, VA.
- Weingart, G., Muir, D., Bunch, A. C., Patel, J., & Sheehan, B. E. (May 2019). Evaluation of the emergency department usage after a hurricane: Identifying at-risk populations. Poster submitted to be presented at the 30th Annual Meeting for the Society for Academic Emergency Medicine, Las Vegas, NV.
- Johnson, R., O'Connor, M., Gyurjyan-Bunch, A., Ferguson, K. P., Sheehan, B. E., & Van Voorhees, A. S. (May 2019). Health disparities in the misdiagnosis of cellulitis in Hampton Roads,

*Continued next page*

## Presentations continued

Virginia. Poster submitted to be presented at the 30th Annual Meeting for the Society for Academic Emergency Medicine, Las Vegas, NV.

- Siraj, E.S., Brush, J.E., Nelson, A., Ullal, J., Lamichhane, R. & Sheehan, B. E. (June 2019). Outcomes before and after implementation of a comprehensive multidisciplinary cardiovascular diabetes program among patients with diabetes undergoing coronary artery bypass grafting. Poster submitted to be presented at the 79th Annual Meeting for the American Diabetes Association, San Francisco, CA.
- Johnson, R., O'Connor, M., Gyurjyan-Bunch, A., Ferguson, K. P., Sheehan, B. E., & Van Voorhees, A. (October 2018). Health disparities in misdiagnosis: An examination of the prevalence of pseudocellulitis and cellulitis in adult patients in the Hampton Roads region using the Sentara healthcare system electronic medical record. Poster presented at the 30th Annual Eastern Virginia Medical School Research Day, EVMS, Norfolk, VA.
- Rehman, Z., Tahhan, S., & Sheehan, B. E. (October 2018). The effect of the venous thromboembolism (VTE) initiative on development of DVT/PE while on contact precautions in the hospital. Poster presented at the 30th Annual Eastern Virginia Medical School Research Day, EVMS, Norfolk, VA.
- Sheehan, B. E., Derlega, V. J., & Maduro, R. S. (May 2018). Prior experiences with racial discrimination predict psychological reactions to a recent incident of race-based rejection among African American university students. Poster presented at the 30th APS Annual Conference, San Francisco, CA.
- Roger, E, Green, L. McCammon, Kurt, MD. (June 2019). Outcomes before and after implementation of a comprehensive multidisciplinary cardiovascular diabetes program among patients with diabetes undergoing coronary artery bypass grafting. Podium presentation at the 114th Annual Meeting for the American Urological Association, Chicago, IL.
- Edwards, J., Patel, V. (February 2018). A Church-Based Strategy to Live a Healthier Lifestyle. Talk presented to SYNC Leadership Conference, Joint Partnership of VHHA, VNA, MSV and VDH. Glen Allen, VA.
- Kristeneff A., O'Connell, K., Sherrerd-Smith, W., Gill, S., Edwards, J. et. al. (January 2019). Knowledge and Attitudes Regarding HIV Post-Exposure Prophylaxis. Poster presented at the 19th Annual Meeting for the Society for Academic Emergency Medicine (SAEM), Las Vegas, NV.

- Ots, H., Dixon, J., Branin, J., Edwards, J. (October 2018). Assessment of Primary Care Provider Knowledge of and Comfort with Increased Breast Density Reported on Routine Mammography. Poster presented at the 30th Annual Eastern Virginia Medical School Research Day, EVMS, Norfolk, VA.
- Kaloji, M., Parks-Savage, A., Edwards, J., Archer D. (October 2018). On-demand contraception attitudes and expectations of female graduate students. North American Forum of Family Planning, New Orleans, LA.
- Robinson, G., Edwards, J., Dodani S. (October 2018). On-demand contraception attitudes and expectations of female graduate students. Poster presented at the 30th Annual Eastern Virginia Medical School Research Day, EVMS, Norfolk, VA.
- Rho, H., Ryal, J., Bikowski, R., Gray, A., Edwards, J. (July 2018). A Study of Pre-Visit Planner Effect on Patient Centered Care in the Clinic. Poster presented at the Annual Resident Day Scientific Forum, EVMS, Norfolk, VA.
- Vinik, A., Calcutt, N., Edwards, J., Weaver, J., Parson, H., Casellini C. (2018). Muscarinic Receptor Antagonist Improves Nerve Fiber Function in Subjects with Type 2 Diabetes and Peripheral Neuropathy. Podium Presentation at the American Diabetes Association's 78th Scientific Sessions. Orlando, FL.
- Simpkins, J.E. (November 2018). How to Develop a Research Protocol. Talk presented to Medical Residents at the Graduate Medical Education Research Boot Camp, Eastern Virginia Medical School, Norfolk, VA.
- Simpkins, J.E. (June 2018). How To Manage Data. Talk presented to Medical Resident at the Naval Medical Center Portsmouth, Department of Navy, Portsmouth, VA.
- Gnilka, B.H., El-Banna, M., Morgan, M. Peer Review: Improving Feedback and Self-Efficacy. American Academy of Ambulatory Care Nursing 43rd Annual Conference, May 9-12, 2018.
- Gnilka, B., El-Banna, M., Morgan, M. Peer to Peer Review: Improving Feedback and Self-Efficacy. Virginia Nurses Association Fall Conference, September 21-22, 2018. Winner, Innovation in Nursing Leadership Award.
- Caviness, A., Rosales, M., Morgan, M. Implementing an Alarm Management Program in the Intensive Care Unit. Virginia Nurses Association Fall Conference, September 21-22, 2018.



□ Zimbardo, K., Maduro, R., Morgan, M., Ver Schneider, P., Launder, B., Toussant, H., Thordson, B., Hooper, M. Usability of a Best Practice Alert for Predicting Sepsis Risk. Virginia Hospital and Healthcare Association Patient Safety Summit, February 1-2, 2018. Second Place Winner, Attendee Vote.

## Publications

- Guirgis, F.W, Dodani, S, Leeuwenburgh, C, Moldawer, L, Bowman, J, Kalynych, C, Grijalva, V, Reddy, ST, Jones AE, Moore FA. HDL inflammatory index correlates with and predicts severity of organ failure in patients with sepsis and septic shock. PLoS One. 2018 Sep 14;13(9):e0203813. doi: 10.1371/journal.pone.0203813
- Bharadwaj P, Sheehan, B.E, Dodani, S, von Gunten CF. Pain Management: Time to Minimize Variations in Practice. Palliat Care. 2018 Feb 20;11:1178224218761350. doi: 10.1177/1178224218761350.
- Dodani, S, Sharma, GK. Presence of coronary artery disease in diabetic and non diabetic South Asian immigrants. Indian Heart J. 2018 Jan - Feb;70(1):50-55. doi: 10.1016/j.ihj.2017.07.009
- Bharadwaj, P., Worthley, K., Sheehan, B. E., Li, Y., Morris, D., Helfen, K., Thompson, D., Zimbardo, K., & Bleznak, A. (Under Review). Challenges of promoting uniformity in programs within a Healthcare System.
- Brush, J. E., Siraj, E., Kemp, C., Liverman, D., McMichael, B., McMichael, B., Lamichhane, R., & Sheehan, B. E. (Under Review). A contemporary analysis of the effect of diabetes mellitus on complication rates of coronary artery bypass surgery.
- Maduro, R. S., Sheehan, B. E., Shappie, A., Hitson, P., & Derlega, V. (Revise & Resubmit, 2018). Identity centrality and public regard are associated with emotional reactions to the Pulse night club shooting among LGBTQ individuals: Testing a sequential mediation model.
- Sheehan, B. E. & Lau-Barraco, C. (Revise & Resubmit, 2018). A daily diary investigation of self-reported alcohol-related direct and indirect aggression.
- Sheehan, B. E., Derlega, V. J, Maduro, R. S., & Winstead, B. (Accepted, 2018). Prior experiences with racial discrimination predict psychological reactions to a recent incident of race-based rejection among African-American university students. Journal of Loss and Trauma.
- Lane, A., Mlynarczyk, M., De Vecina, M., Green, L.



**HADSI's mission is to improve the health of the people of Hampton Roads.**

Abuhamad, A (Under Review). Real-time continuous glucose monitoring in gestational diabetes: a randomized controlled trial. American Journal of Obstetrics & Gynecology.

- Reeves, T., Eliason M., Hadford, S., Green, L (under revisions). Early vs. Late Cleft Palate Repair: A Retrospective Review of Fistula Rates and Speech Outcomes.
- Roger, E., Green, L., McCammon, K.. Natural history of moderate to severe incontinence after prostatectomy. American
- Vinik A., Calcutt N., Edwards J., Weaver J., Parson, H., Casellini, C. Muscarinic Receptor Antagonist Improves Nerve Fiber Function in Subjects with Type 2 Diabetes and Peripheral Neuropathy. Diabetes. (July 2018): 67.
- Raffield, L.M., Ellis, J., Olson, N.C., Duan, Q., Li, J., Durda, P, Pankratz, N, Keating, BJ, Wassel, CL, Cushman, M, Wilson, JG, Gross, M.D., Tracy, R.P., Rich, S.S., Reiner, A.P., Li, Y, Willis, M.S., Lange, E.M., Lange, LA. "Genome-wide association study of homocysteine in African Americans from the Jackson Heart Study, Multi-Ethnic Study of Atherosclerosis, and the Coronary Artery Risk in Young Adults study" J Hum Genet 2018 Mar, 63(3): 327-337.
- Wang, N., Tian, H., Li, Y., Wu, R.L, Luo, J. and Wang, Z. (2018). p Value Calculation Method of QTL Mapping for Dynamic Quantitative Traits (completed).
- Wang, N., Wang, Z., Li, Y., Wu, R.L, Luo, J. and Wang, Z. (2018). Applying Two-step Linear Mixed Model on Genetic Mapping for Dynamic Quantitative Traits to Improve the Computing Efficiency (completed).
- Luo, J., Chen, B., Yu, F. and Lin, G. (2018). Offset Poisson Regression Model with Random Covariates, Stat Med (submitted).
- Luo, J., Wang, Y. and Luo, B. (2018). Minimizing the Cost in Sample Size Calculation, Clinical Trials (submitted).

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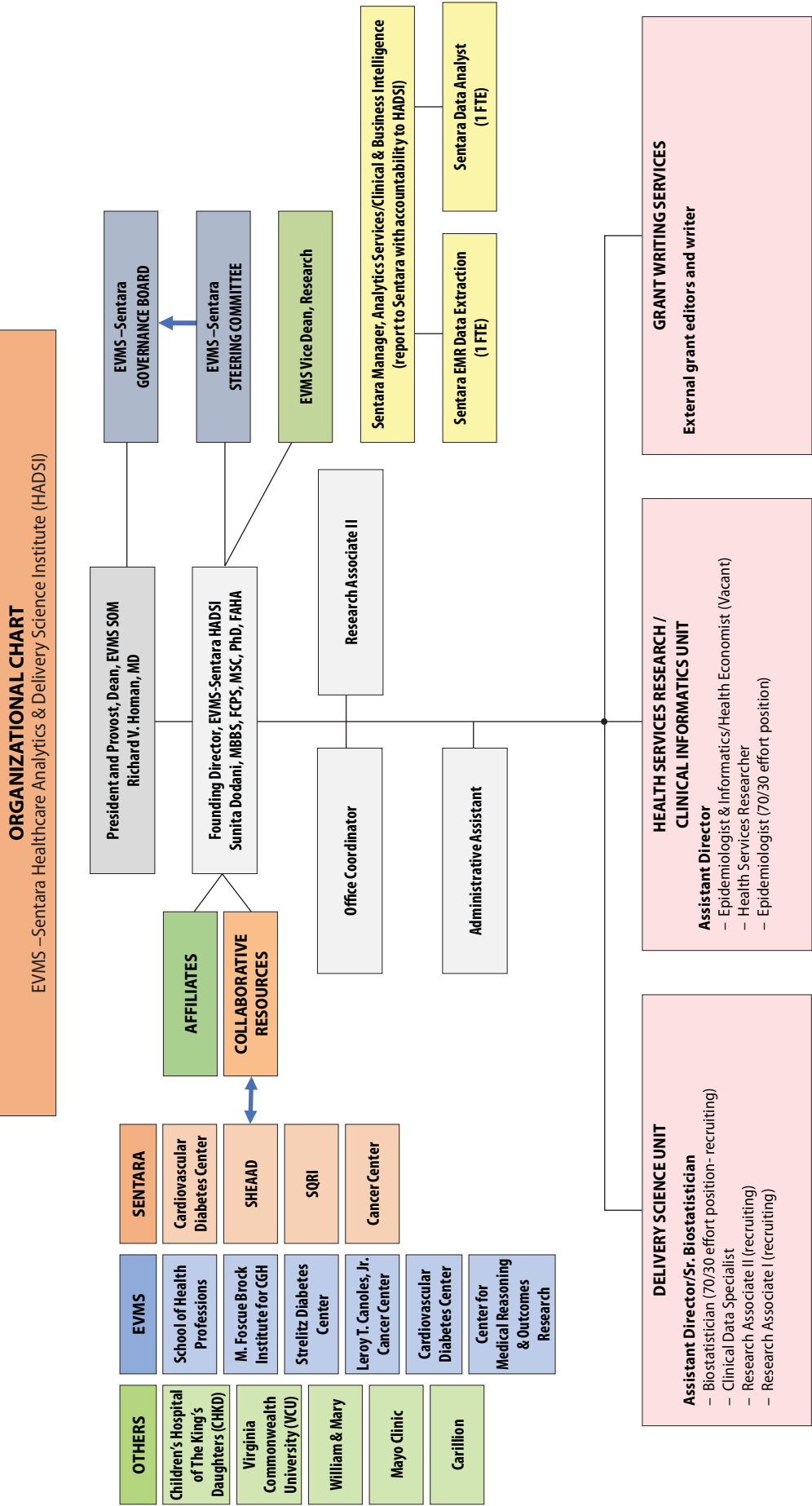
## Presentations continued

- Xu, K., Watanabe-Galloway, S., Fedja, A., Rochling, F.A., Zhang, J., Farazi, P.A., Peng, H., Wang, H. and Luo, J. (2018). Impact of Surgical Delay on Survival of Patients with Hepatocellular Carcinoma: Analysis of the National Cancer Database, HPB (submitted).
- Luo, J., Hager, W.W., and Wu, R.L. (2018), Asymptotic Properties and Convergence Rate in Solving Models of Linkage Disequilibrium, *Journal of Statistical Planning and Inference* (submitted).
- Carvajal-Suarez, M., Bahena, M., Soliman, A.S., Luo, J. and De Alba, A. (2018), The influence of medical providers on HPV vaccination among children of Mexican mothers: Comparison between Mexico and the Midwest region of the United States (submitted).
- Kim, Y., Cui, J., Snyder, C., Lynch, H., Luo, J. and Wang, S.M. (2018). Germline genome instability in BRCA1 mutation carriers is predominantly inherited – evidence from two mutation carrier families, *J of Medical Genetics* (submitted).
- Luo, J., Li, Q., Wang, Z. and Wu, R.L. (2018), Estimation and Algorithm of Joint Linkage and Linkage Disequilibrium for Family Data, *Journal of Biostatistics* (submitted).
- Batra, R., Suh, M.K., Carson, J.S., Dale, M.A., Meisinger, T.M., Fitzgerald, M., Opperman, P.J., Luo, J., Pipinos, I.I., Xiong, W. and Baxter, B.T. (2018) IL-1 $\beta$  (Interleukin-1 $\beta$ ) and TNF- $\alpha$  (Tumor Necrosis Factor- $\alpha$ ) Impact Abdominal Aortic Aneurysm Formation by Differential Effects on Macrophage Polarization. *Arteriosclerosis, Thrombosis, and Vascular Biology*, 38(2): 457-463. doi: 10.1161/ATVBAHA.117.310333
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**One priority for HADSI is helping to develop the next generation of experts in healthcare analysis and delivery science.**

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