

**Department of Surgery
FY 2018 Annual Report
July 1, 2017 to June 30, 2018**

EXECUTIVE SUMMARY

Fiscal year 2018 was a transition year for the Department of Surgery. Stephen T. Bartlett, M.D. stepped down from the position of Chair of the Department of Surgery after fifteen years to take on the role of Chief Medical Officer of the University of Maryland Medical System. Dean Reece appointed Rajabrata Sarkar, M.D., Ph.D. the Interim Chair of the Department of Surgery effective January 1, 2018. Dr. Sarkar still holds the positions of Vascular Surgery Division Chief and Vice Chair of Clinical Operations for the Department of Surgery during this interim period. Dr. Bartlett remains a faculty member of the Division of Transplant Surgery and it still a member of the Kidney Transplant Team.

The Department of Surgery had a successful FY 2018. We exceeded prior year's clinical charges and net collections, due primarily to unfilled faculty positions. We did not meet our budget for clinical charges, net collections and case volume due to unfilled faculty positions. We continue to add new provider service contracts with other hospital within and outside of the University of Maryland Medical System and we are working closely with the University of Maryland Medical Center, the University of Maryland Midtown Campus and the Faculty Practice Office, Waterloo location to transfer outpatient ambulatory volume to the most cost efficient, high quality location. We also increased our grants and contracts applications, increased our Federal Awards revenue and increased the number of funded grants and contracts from FY17. We are happy to report that the Department had a profitable bottom line. The Department continues to increase and strengthen its core mission of education, patient care, and research. In FY18 we added six (6) MD faculty and three (3) Ph.D. research faculty to the Department. The past year also included transition as we had eleven (11) MD faculty and four (4) Ph.D. research faculty resignations/non-renewals.

CLINICAL OVERVIEW

The table below shows our Charges and Collections vs budget and vs prior year.

	FY18 Year-End	FY17 Year-End	\$ Variance	% Variance	FY18 Budget	\$ Variance	% Variance
Charges	\$88,336,794	\$86,537,724	\$1,799,070	2.08%	\$92,044,391	(\$3,707,597)	-4.03%
Net Collections	\$25,521,031	\$25,317,000	\$204,031	0.81%	\$26,879,197	(\$1,358,166)	-5.05%

We had four (4) highly productive faculty members leave in FY18 (Drs. Kon, Alexander, Leeser & Hoehn) that accounted for the majority of our negative charge and collection variance in FY18. Dr. Kon and Dr. Hoehn were replaced during fiscal year 2018, but Dr. Leeser and Dr. Alexander were not.

The Table below shows our case volume vs budget and vs prior year.

	FY18 Year-End	FY17 Year-End	\$ Variance	% Variance	FY18 Budget	\$ Variance	% Variance
Total Cases	12,026	12,309	(283)	-2.30%	12,965	(939)	-7.24%
UMMC	8,591	8,828	(237)	-2.68%	9,585	(994)	-10.37%
Non-UMMC	3,435	3,481	(46)	-1.32%	3,380	55	1.63%

As the Department continues to expand our locations throughout the State of Maryland, we are also seeing a shift in case volume from UMMC to other locations. New locations that offered operating room/procedure room options that were added in FY18 include Waterloo, Bon Secours and our new office-based laboratory (OBL). Non-UMMS locations that we have increased case location in FY18 include Hanover Hospital in Hanover, PA and St. Agnes Hospital.

The Tables below show our case volume by location and by growth.

Location (sorted by UMMS_FPI vs. Non-UMMS,FPI)	FY18 Year-End	FY17 Year-End	# Variance	% Variance	FY18 Budget	# Variance	% Variance
TOTAL CASES	12,026	12,309	-283	-2.3%	12,965	-939	-7.2%
UMMS/FPI	11,039	11,420	-381	-3.3%	12,156	-1,117	-9.2%
FPI_OBL	34	0	34	0.0%	0	34	0.0%
FPI_URO ASC	631	689	-58	-8.4%	666	-35	-5.3%
FPI_WATERLOO	15	0	15	0.0%	0	15	0.0%
UM_BWMC	40	59	-19	-32.2%	0	40	0.0%
UM_MIDTOWN	496	540	-44	-8.1%	611	-115	-18.8%
UM_PGH/ CathLab	237	137	100	73.0%	205	32	15.6%
UM_ROI	13	14	-1	-7.1%	30	-17	-56.7%
UM_SJMC	234	289	-55	-19.0%	267	-33	-12.4%
UM_SRH_CHESTER RIVER	136	103	33	32.0%	161	-25	-15.5%
UM_SRH-EASTON	147	233	-86	-36.9%	211	-64	-30.3%
UM_UCMC	328	337	-9	-2.7%	300	28	9.3%
UMMC CATH_LAB	137	191	-54	-28.3%	120	17	14.2%
UMMC PRIMARY	8,591	8,828	-237	-2.7%	9,585	-994	-10.4%
NON-UMMS/FPI	987	889	98	11.0%	809	178	22.0%
BON SECOURS	79	0	79	0.0%	55	24	43.6%
GBMC	185	184	1	0.5%	170	15	8.8%
HANOVER	163	132	31	23.5%	150	13	8.7%
JHHS_HOWARD COUNTY	0	0	0	0.0%	20	-20	-100.0%
LLF	142	122	20	16.4%	20	122	610.0%
MedStar_FSH	38	42	-4	-9.5%	56	-18	-32.1%
MERCY	20	13	7	53.8%	20	0	0.0%
MERITUS		115	-115	-100.0%	0	0	0.0%
SINAI	217	220	-3	-1.4%	218	-1	-0.5%
ST. AGNES	143	61	82	134.4%	100	43	43.0%

The above table depicts our total case volume by system and non-system locations. The Department continues to expand our geographic location by moving and / or adding volume at non-system locations and increasing our provider contracts throughout the State of Maryland.

Location (sorted by growth)	FY18 Year-End	FY17 Year-End	# Variance	% Variance	FY18 Budget	# Variance	% Variance
TOTAL Cases	12,026	12,309	-283	-2.3%	12,965	-939	-7.2%
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ST. AGNES	143	61	82	134.4%	100	43	43.0%
BON SECOURS	79	0	79	0.0%	55	24	43.6%
FPI_OBL	34	0	34	0.0%	0	34	0.0%
UM_SRH_CHESTER RIVER	136	103	33	32.0%	161	-25	-15.5%
HANOVER	163	132	31	23.5%	150	13	8.7%
LLF	142	122	20	16.4%	20	122	610.0%
FPI_WATERLOO	15	0	15	0.0%	0	15	0.0%
MERCY	20	13	7	53.8%	20	0	0.0%
GBMC	185	184	1	0.5%	170	15	8.8%
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UM_ROI	13	14	-1	-7.1%	30	-17	-56.7%
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UM_SRH-EASTON	147	233	-86	-36.9%	211	-64	-30.3%
MERITUS		115	-115	-100.0%	0	0	0.0%
UMMC PRIMARY	8,591	8,828	-237	-2.7%	9,585	-994	-10.4%

The above table depicts our total case volume by growth by location. The Department continues to move and increase volume at more efficient locations including our new OBL, Waterloo. New volume was added at Prince Georges Hospital, St. Agnes Hospital and Bon Secours Hospital.

FINANCIAL OVERVIEW

The Department ending the year with a profit of \$159,408. Although we did not meet our charge or cash collections budget we exceeded prior year in both charges and cash collections. Our top three revenue sources after cash collections are PSC at 23% of total revenue, Provider contract (net of returns) at 17% of total revenue and grant and contract revenue at 10% of total revenue. All three exceeded budget and exceeded prior year. We generated \$4.8M in assessments to the Medical School and the Faculty Physicians, Inc. Due to unfilled faculty positions and unfilled staff positions, we saved a total of \$1,235,976 in expenses in FY18. The Department was successful in reducing operating expenses as well generating an additional \$463,437 savings.

COST SAVINGS INITIATIVE (CSI)

In FY 2018, the Department of Surgery continued to collaborate with the UMMC to develop a shared cost savings initiative with the goal to review all inpatient operations and incorporate efficiencies to reduce UMMC's surgical costs while maintaining patient safety, improving quality and outcomes.

The FY18 Dashboard Initiatives included the following five (5) core metrics:

- **Pharmaceutical Utilization** – The Department of Surgery drug utilization is significant, especially within Cardiac, Transplant and Vascular. GOAL, \$100,000 – Reduce total surgery pharmaceutical costs down by 2% of FY17 total cost or \$257,358. We have not just received the FY18 year-end dashboard from the UMMC financial team, but we are estimated that we have met this goals based on data through February 2018.
- **On-Time 1st Start in the Operating Room** – Where the Department of Surgery has the first case start of the day in any operating room, frequently that start time I past the expected planned start time (OR open time). GOAL, \$100,000 – Achieve an on-time first case start on at least 40% of the eligible surgical cases. We have not just received the FY18 year-end dashboard from the UMMC financial team, but we are estimated that we have not met this goals based on data through February 2018.
- **Discharge Time (Home, Self-Care only)** – The Department of Surgery's current average discharge time to home is approximately 3:40pm. GOAL, \$100,000 – Achieve a 2:00pm or earlier discharge time on at least 50% of the home, self-care inpatient admissions. We have not just received the FY18 year-end dashboard from the UMMC financial team, but we are estimated that we have not met this goals based on data through February 2018.
- **Observed/Expected Length of Stay** – The Department of Surgery is in the “expected zone” in total, however a few division are below the expected. GOAL, \$100,000 – Bring the division in the red (Surgical Oncology) to the “expected zone” and bring the divisions in the yellow (Cardiac Surgery & Thoracic Surgery) to the “green zone”. We have not just received the FY18 year-end dashboard from the UMMC financial team, but we are estimated that we have met this goals based on data through December 2017.
- **Observed/Expected Readmissions** – The Department of Surgery is in the “green zone” in total, however a few division are below the expected. GOAL – Bring the division in the red (Surgical Oncology, General Surgery, Urology, Plastic Surgery, Cardiac Surgery) to the “expected zone” and bring the divisions in the yellow (Transplant & Vascular) to the “green zone”. We have not just received the FY18 year-end dashboard from the UMMC financial team, but we are estimated that we have partially met this goal based on data through December 2017.

The UMMC has eliminated the CSI in FY19 and has replaced it with a Physician Service Contract (PSC) At-Risk Initiative. This initiative does not have a reward option, only a penalty. The penalty is 10% of our PSC or \$1,628,870. This new initiative could create a huge negative swing in our year-end financials since historically we had the opportunity to receive up to \$500,000 in CSI and now we are at-risk of up to \$1,628,870 of our PSC, which represents a \$2,128,870 negative swing. There are six (6) core metrics in FY19. They are as follows (1) Observed/Expected Mortality, (2) Observed/Expected Length of Stay, (3) Direct Variable Cost per Encounter, (4) Hospital Acquired Infections, (5) Readmissions, (6) HCAHPS – Communication with Doctors. As of the filing of this report, we have not received any data for FY19.

RESEARCH OVERVIEW

FY 2018 was a year of changes to the Department of Surgery Research Administration staff and faculty. A new Research Administrator was hired to oversee sponsored research for the Department bringing over 26 years of research administration experience. An additional support position, a Sr. Contracts and Grants Specialist, was added to assist faculty with the submission of proposals and management of their sponsored awards.

Dr. Richard Pierson and his lab left the Department in FY18. After 16 years of a successful research program in the Department, there was a smooth transition for the departure the Pierson Lab by the end of fiscal year. A new program, Cardiac Xenotransplant Development Study, under the direction of Dr. Muhammad Mohiuddin, was funded through United Therapeutics/Lung biotechnology PBC for \$20 million. In addition, the sponsor is funding renovations to MSTF for a new operating room. Planning of the renovation occurred throughout FY18 and construction has begun allowing for the utilization of the space vacated by the Pierson Lab.

Overall, the research mission of the department had a very successful year in FY 2018. The Department submitted 112 new grant applications with 35 applications being funded for a 31% success rate. In FY2018, the Department of Surgery met 6% of the 8% eligible incentive of the faculty incentive plan.

RESEARCH

- 155 Grant Applications this Fiscal Year
- 138 New, Competing Continuation and Supplement Applications this FY
- 18 New NIH applications
- 8 NIH Continuation
- 43 NIH sub-contract applications
- 22 other-Federal applications
- 64 Corporate, Foundation, & Industry sponsored applications
- 96 new awards to date
- 24 New NIH awards/sub-contracts
- 14 New other-Federal awards/sub-contracts
- 51 New Corporate, Foundation, & Industry awards

- 8 New Maryland State Government

Notable New Awards:

NIH

- Dr. Bromberg – NIH U01 – “U Maryland Mid-Atlantic APOLLO Research Network Omic and Clinical Center”
- Dr. Griffith Bartley/Dr. Jon Wu – NHLBI – “Development and Pre-Clinical Trial Qualification of a Pediatric Pump-Lung System for Children”
- Dr. Thomas Monahan – NHLBI – “The effect of Myristolated alanine-rich C Kinase Substrate (MARCKS) on kinase interacting with stathmin (KIS) in differential proliferation of vascular...”

NIH Subs

- Dr. Bromberg – Mt. Sinai/NIH “Effects of Inhibiting Early Inflammation in Kidney Transplant Patients”
- Dr. Lal – Columbia University/NIH – Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial - Hemodynamics (CREST-H)“
- Dr. Mohiuddin – University of Alabama at Birmingham/NIH – Genetically Engineered Pig Organ Transplantation into Non-Human Primates”

DOD/ DOD Subs

- Dr. Siddiqui – US Army Medical Research – “PC150408 Using Metabolic Pathways to Improve Diagnosis and Risk-Stratification of Prostate Cancer
- Dr. Brenner – Prytime Medical Devices, Inc – Department of Defense Prime – “Emergent Truncal Hemorrhage Control Study”

Foundation/Other

- Dr. J. Scalea – American Surgical Association – Transplantation Tolerance without the Risks of Bone Marrow Transplantation: Eliminating the Need for hematopoietic Stem Cells by Using Regulatory Myel.”
- Dr. Barth – Henry M. Jackson Foundation for the Advancement of Military 0 “Adult tissue-derived stem cells and tolerance induction in non-human primates for vascularized composite allograft transplantation.”

Corporate

- Dr. Kaushal – Longeveron – TEDCO Prime – “Mesenchymal Stem Cell Therapy and Surgical Palliation for Hypoplastic Left Heart Syndrome (HLHS) “”
- Dr. Lal - Abbot Vascular – “CREST 2 Registry”
- Dr. Gammie – Maryland Technology Development Corporation “Development of a transeptal puncture device for left atrial access”

Maryland Industrial Partnership Program (MIPS)

- Dr. Siddiqui – Bladder Cancer Diagnostic Signature Validation
- Dr. Lal – Novel targeted imaging application for PAD

Submitted NIH RO1/ UO1 Proposals, Pending Review or Scored

PI	Sponsor	Title	Submission date	Score/Date expected
Olson	NIH R01	Parathyroid Tumor Clonal Status as a Biomarker in Primary Hyperparathyroidism	03/05/18	High Score expected to be funded
Kaushal	NIH R01	Characterization of the Cardiac Progenitor Cell Exosomes for Optimal Therapeutics	04/16/18	High Score expected to be funded
Kaushal	NIH/Emory lead R01	Computational modeling tools to predict cell therapy outcomes	04/13/18	High Score expected to be funded
Bromberg	NIH R01	Microbiota modify myeloid cell innate immunity and lymph node structure and function to regulate alloimmunity and transplant outcome	06/01/18	October-18
Li	NIH R01	Promotion of myocardial regeneration by epigenetic factors	05/30/18	October-18
Ucuzian	NIH R01	Mechanisms of aortopathy in LRP1 deficiency	6/11/18	October-18

RESEARCH TABLES:

Table 1: Revenue from Awards by Type - Fiscal Year 2017 vs. Fiscal Year 2018

FY17 vs FY18 Revenues from Awards by Type				
	FY2017	FY2018	Variance \$	Variance %
Total NIH	\$6,450,385	\$5,098,949	(\$1,351,436)	-21.0%
Total Other Federal	\$1,849,884	\$1,718,289	(\$131,595)	-7.1%
Total Other	\$8,168,702	\$15,118,551	\$6,949,849	85.1%
TOTAL	\$16,468,971	\$21,935,789	\$5,466,818	33.2%

The Department was successful increasing revenue from awards by \$5,466,818 or 33% of prior year. A large part of this increase is from the new Xeno-Heart Transplant program funded by United Therapeutic Corporation. United Therapeutic Corporation not only funded the Xeno-Heart Transplant program, but

also allocated \$3,900,000 to building new operating rooms in the MSTF building for our research programs.

Table 2: Revenue from Awards Fiscal Year 2017 vs. Fiscal Year 2018

FY17 vs FY18 Revenues from Awards				
	FY2017	FY2018	Variance \$	Variance %
Common Trust	\$0	\$21,339	\$21,339	100.0%
Federal Standard:				
DOD	\$1,127,738	\$1,365,010	\$237,272	21.0%
IPA/Contract	\$453,199	\$353,279	(\$99,920)	-22.0%
NIH	\$4,938,396	\$5,098,949	\$160,553	3.3%
Non-Gov. Deliverable:				
Corporate	\$7,011,784	\$11,684,778	\$4,672,994	66.6%
DOD Subcontract	\$0	\$0	\$0	
Foundation	\$0	\$0	\$0	
NIH Subcontract	\$102,530	\$0	(\$102,530)	-100.0%
Non-Gov. Standard:				
Corporate	\$1,012,314	\$819,098	(\$193,216)	-19.1%
DOD Subcontract	\$195,028	\$177,149	(\$17,879)	-9.2%
Foundation	\$106,829	\$74,061	(\$32,768)	-30.7%
Other non-profit	\$24,322		(\$24,322)	-100.0%
NIH Subcontract	\$729,644	\$981,915	\$252,271	34.6%
State Deliverable:	\$0	\$0	\$0	0.0%
State Standard:				
MD TEDCO	\$1,183	\$163,429	\$162,246	13714.8%
NIH Subcontract	\$679,815	\$1,196,781	\$516,966	76.0%
DOD Subcontract	\$73,919	\$0	(\$73,919)	-100.0%
Other	\$12,270	\$0	(\$12,270)	-100.0%
Totals	\$16,468,971	\$21,935,788	\$5,466,817	33.2%

**Table 3: Revenue from Federal Awards by Department/Program
Fiscal Year 2018**

FY2018 Revenues from Federal Awards by Department/Program				
	Surgery	CVID	Trauma	Total
NIH- direct	\$2,199,813	\$2,652,513	\$246,622	\$5,098,948
NIH -subcontract	\$2,144,815	33881	\$0	\$2,178,696
Total NIH	\$4,344,628	\$2,686,394	\$246,622	\$7,277,644

Other Federal- direct	\$909,458	76121	\$732,710	\$1,718,289
Other Federal- subcontract	\$177,150	0	\$0	\$177,150
Total Other Federal	\$1,086,608	\$0	\$519,602	\$1,606,210
TOTAL FEDERAL	\$5,431,236	\$2,686,394	\$766,224	\$8,883,854

Table 4: Grant Proposal Submissions and funded to date FY2018

Grant Proposal Submissions (EXCLUDING non-competitive renewals and transfers)/

Type	FY2018	
	# submitted	# funded TO DATE
NIH direct –Research	24	2
NIH direct – Training	1	0
NIH direct – Fellowship	1	0
NIH subcontract –Research	30	6
NIH subcontract -Clin.Trial	5	3
Other Federal direct –Research	4	5
Other Federal direct -IPA	5	5
Other Federal direct -Clin. Trial	0	2
Other Federal subcontract -Research	5	2
Other Federal subcontract - Clin. Trial	2	2
Other Federal subcontract -Training	1	1
ALL FEDERAL	78	28
MD TEDCO direct -Research	5	2
MD TEDCO direct -Fellowship	2	0
MD TEDCO subcontract -Research	1	0
Corporate - Research	7	9
Corporate - Clin. Trial	28	16
Corporate - Fellowship	0	0
Assoc./Foundation direct -Research	11	4
Assoc./Foundation direct -Fellowship	3	1
Assoc./Foundation direct -Clin. Trial	1	0
Assoc./Foundation subcontract -Research	0	0
State Agencies - Services/Other	2	2
Public Universities	0	0
UMD internal seed funding	0	0
ALL NON-FEDERAL	60	34
TOTAL	138	62

Table 5: Department of Surgery Funded, Rejected and Pending Proposals FY2017 vs FY2018

	FY17	FY18	% Change
Funded	36	62	72.22%
Rejected	34	15	-55.88%
Pending	35	78	122.86%
TOTAL	105	155	47.62%

Table 6: FY 2018 New Awards Announced (to date)**FY18: New Awards Announced (NGAs received)**

Sponsor	Number of awards	Award amounts
NIH direct or subcontract	24	\$3,520,595
Other Gov. direct and subcontract	14	\$4,867,541
Foundation, State, Other Non-profit	13	\$11,839,046
Corporate	45	\$739,382
Total	96	\$20,966,563

EDUCATION

The Educational programs in the Department of Surgery continue to attract highly qualified individuals. We had a strong match with class of interns for FY 2019 from the following programs: Tufts University, University of Pittsburgh, George Washington University, Geisel SOM at Dartmouth, University of Maryland SOM, and the Lewis Katz SOM at Temple University.

Incoming Preliminary General Surgery Residents matched from the following programs: Army Medical Center, Alexandria University Faculty of Medicine, Brody SOM at East Carolina University, Zanjan University Faculty of Medicine, SUNY Downstate, University of Maryland SOM and the University Of Dammam College Of Medicine.

Our graduating FY18 class matched into the following fellowships:

- University of Pittsburgh – Surgical Oncology
- University of Maryland – Cardiac Surgery
- Baylor-Houston-Vascular Surgery

- Indiana University- Minimally Invasive Surgery
- Long Island Jewish Medical Center-Pediatric Surgery Research
- University of Minnesota-Minimally Invasive Surgery
- University of Colorado-Plastic Surgery

Medical Student shelf exam scores of 57th percentile nationally.

SPONSORED LECTURES AND SYMPOSIUMS

- The Harry C. Hull Distinguished Lectureship – Speaker Harvey I. Pass, MD, held October 5, 2017 in the Shock Trauma Auditorium
- Charles Getz Memorial Fund (Getz Research Retreat) – Speaker - Dr. Frederick Moore, held January 5-6, 2018 at HSF II Auditorium and Lobby
- Robert Buxton Distinguished Lectureship: Speaker – Dr. David Linehan, held June 21, 2018 in the Shock Trauma Auditorium
- Dr. Joseph B. Ganey Visiting Professorship in Surgery – Speaker – Dr. Julian Kim, held September 21, 2017 in the Shock Trauma Auditorium

FY2018 FACULTY RECRUITMENTS:

- The Cardiac Surgery Division added David Kaczorowski, M.D. to take the position vacated by Dr. Zackary Kon. Dr. Kaczorowski is board certified in General Surgery and Cardiothoracic Surgery. He received his medical degree from the Johns Hopkins University, School of Medicine and completed his intern and residency in General Surgery at the University of Pittsburgh. He completed his Cardiothoracic Surgery residency and his Heart Failure, Cardiothoracic Transplantation and Advanced Adult Cardiac Surgery Fellowship at the University of Pennsylvania. Prior to joining the University of Maryland, Dr. Kaczorowski was an attending Cardiac Surgeon at Wellspan, York PA.
- The Cardiac Surgery Division added Deqiang Li, Ph.D. with work with Dr. Sanjay Kaushal.
- The Cardiac Surgery Division hired Muhammad Mohiuddin, MBBS to be the program director of the new XENO-Heart Transplantation Research Program. Dr. Mohiuddin brought Avneesh Singh, Ph.D. with him to support the program. Both come to the University of Maryland from the National Institute of Health.
- The General Surgery Division added Eleanor Faherty, M.D. from the UM-Charles Regional Medical Center.

- The General Surgery Division added Hope Jackson, M.D. to support general surgery services at both the UMMC and the UMMT. Dr. Jackson received her medical degree, completed her internship, and residency from George Washington University, School of Medicine & Health Sciences. She completed her Minimally Invasive Surgery Foregut/Bariatric Fellowship at the University of Washington Medical Center prior to joining the University of Maryland faculty.
- The Plastic Surgery Division added Erin Rada, M.D. to cover both adult and pediatric plastic surgery. Dr. Rada received her medical degree from the University of Maryland, School of Medicine. She completed her Plastic Surgery residency at the University of Maryland / Johns Hopkins University joint residency program. She completed her Craniofacial and Pediatric Plastic Surgery Fellowship at the Children’s National Medical Center prior to join the University of Maryland faculty. Prior to joining the University of Maryland, Dr. Karwowski was an Associate Professor at the University of Miami, School of Medicine.
- The Vascular Surgery Division added John Karwowski, M.D. to take the position vacated by Dr. Robert Crawford. Dr. Karwowski received his medical degree from Tufts University, School of Medicine. He completed his internship, General Surgery residency and Vascular Surgery Fellowship at Stanford University Hospital.
- The Vascular Surgery Division added Khanjan Nagarsheth, M.D. to take the position vacated by Dr. Melanie Hoehn. Dr. Nagarsheth received his medical degree from St. George’s University, School of Medicine, Grenada, West Indies. He completed his internship and General Surgery residency at the University of Tennessee Medical Center. He completed his Surgical Critical Care / Trauma Surgery Fellowship at the R. Adams Cowley Shock Trauma Center. Prior to joining the University of Maryland, Dr. Nagarsheth was an Assistant Professor at the Robert Wood Johnson Medical School.

FY2018 DEPARTURES:

Clinical Faculty
H. Richard Alexander, MD – General & Oncologic Surgery
Robert Crawford, MD – Vascular Surgery
James Donahue, MD – Thoracic Surgery
Melanie Hoehn, MD – Vascular Surgery
Zachary Kon, MD – Cardiac Surgery
David Leeser – Transplant Surgery
Robin Pierson, MD – Cardiac Surgery

Si Pham, MD – Cardiac Surgery
Sam Sultan – Transplant Surgery
Soo Yi, MD – Transplant Surgery
Research Faculty
Agnes Azimzadeh, PhD – Cardiac Surgery
Lars Burdorf, PhD – Cardiac Surgery
Xiangfei Cheng, BM, PhD – Cardiac Surgery
Kevin Kunkler, MD – General & Oncologic Surgery
Sheelu Vargheses, PhD – General & Oncologic Surgery
Yizhong Wang, PhD – Cardiac Surgery

ENETREPRENEURS OF THE YEAR - 2018

MARS Team

Steven I. Hanish, MD

Thomas M. Scalea, MD, FACS, FCCM

Deborah M. Stein, MD, MPH, FACS, FCCM

School of Medicine

R Adams Cowley Shock Trauma Center

University of Maryland Medical Center

Liver failure is a devastating disease that affects around 1,600 patients in the U.S. each year. Modern medicine has developed a variety of devices to support failing organs - ventilators for the lungs, ventricular assist devices for the heart, dialysis for the kidneys. Until recently, there was nothing for the failing liver.

Thanks to these three outstanding physician-scientists and their innovative application of the Molecular Adsorbent Recirculating System (MARS) now there is hope. This "dialysis machine for the liver" can remove toxins, improve clotting, and reduce brain swelling. MARS can be used to buy time for the liver to recover. In some cases where recovery is not possible, MARS is a bridge to liver transplant.

The first use of MARS was at the R Adams Cowley Shock Trauma Center, where Dr. Scalea is physician-in-chief, Dr. Stein is chief of trauma, and Dr. Hanish is a liver transplant surgeon. A patient suffered gunshot wounds with irreparable liver damage. This provided the impetus to expand indications to other causes of acute severe liver failure, a new indication for the device.

Drs. Hanish, Scalea, and Stein have published the results of their life-saving work with the MARS in one of the largest studies to date, paving the way for other clinicians to use this device and affect countless lives. Their results using MARS as a bridge to recovery and/or transplant also could serve as an important first step in gaining FDA approval for liver transplant recipients.

Baltimore 2018 Best Doctors:

Mark Kligman, M.D.	Bariatric Surgery
R.C. Stewart Finney, M.D.	Cardiac Surgery
James Gammie, M.D.	Cardiac Surgery
Zachary Kon, M.D.	Cardiac Surgery
Bradley Taylor, M.D.	Cardiac Surgery
Andrea Bafford, M.D.	Colo-Rectal
J. Lawrence Fitzpatrick, M.D.	General Surgery
Stephen Kavic, M.D.	General Surgery
Sunjay Kaushal, M.D.	Pediatric Cardiac Surgery
James Moore, M.D.	Pediatric Surgery
Eric Strauch, M.D.	Pediatric Surgery
Roger Voigt, M.D.	Pediatric Surgery, Pediatric Urology
Kimberly Lumpkins, M.D.	Pediatric Urology
H. Richard Alexander, M.D.	Surgical Oncology
Nader Hanna, M.D.	Surgical Oncology
Whitney Burrows, M.D.	Thoracic Surgery
Joseph Friedberg, M.D.	Thoracic Surgery
Gavin Henry, M.D.	Thoracic Surgery
Shelby Stewart, M.D.	Thoracic Surgery
Rolf Barth, M.D.	Transplant Surgery
Stephen Bartlett, M.D.	Transplant Surgery
Steven Hanish, M.D.	Transplant Surgery
John LaMattina, M.D.	Transplant Surgery
Andrew Kramer, M.D.	Urology
Rajabrata Sarkar, M.D.	Vascular Surgery
Shahab Toursavadkahi, M.D.	Vascular Surgery

DIVISION ACCOMPLISHMENTS:

Cardiac Surgery

Clinical

- The Division of Cardiac Surgery continues to grow clinical volume; we are the leader in heart valve surgery in the state of Maryland with a 36% market share.
- Clinical volume grew by 10 % in FY 2018, generating net revenue of \$6,027,733, total cases 1,874 and wRVUs 91,573.

Academic/Research

- We enrolled more patients in the COMMENCE trial (a trial of a new, more durable replacement heart valve) than any other program in the country.
- Dr. Bart Griffith was one of the first surgeons in the country to implant this valve in a patient.
- We have a total of 39 federally and industry-funded clinical trials actively enrolling. Total budget is in excess of \$20 million. The Division has 5 RO1s and 11 NIH subs.
- The Division serves as a research site for the NHLBI-sponsored Cardiothoracic Surgery Trials Network (CTSN).
- We are the leading worldwide enroller in a prospective randomized trial assessing the worth of tricuspid valve repair during mitral valve surgery. Dr. James Gammie led the protocol development team that conceived and designed the trial.
- Dr. Sunjay Kaushal has enrolled 6 neonates in the ELPIS stem cell trial
- Dr. Bart Griffith received a Mii award (for the development of new ECMO cannula), as did Dr. Gammie (for the development of a new transseptal catheter).
- Dr. Griffith Bartley/Dr. Jon Wu – NHLBI – “Development and Pre-Clinical Trial Qualification of a Pediatric Pump-Lung System for Children”
- Dr. Taylor and Watkins published a key paper in the Journal of Thoracic and Cardiovascular surgery demonstrating the benefit of sub-specialization in CABG procedures
- Dr. Kaushal received a 3%ile on his NIH submission
- Dr. Gammie and Vesley performed the first catheter-based mitral valve replacement in Maryland
- Dr. Claire Watkins (senior integrated cardiac surgery resident) has started as an assistant professor at Stanford University
- Harpoon Medical was acquired by Edwards Lifesciences

General & Oncologic Surgery

Clinical

- The Division of General & Oncology Surgery generating net revenue of \$4,074,379, total cases 2,408 and wRVUs 53,194.

- Established outpatient evaluative services for breast, general, endocrine, and complex surgical oncology at Waterloo facility
- Established outpatient surgical services for breast and general surgery at Waterloo facility
- Developed SWOT analysis and needs assessment for breast surgical oncology at UMMC

Academic/Research

Bafford Senior resident teaching award
Kligman Reaccreditation or Advanced GI/MIS Fellowship Program (3 years)
Kavic 100% of 2017 graduating chief residents passed written boards

Grants (new/renewed)

Turner

Funding Period: 10/01/2013-9/31/2021 (renewed FY2017)
 Source and Type: VA, MERIT-Review Award
 Dollar Amount: \$600,000 (total)
 PI: Douglas J. Turner, MD

Title: *Barrier Dysfunction in Severe Surgical Diseases*

This project studies modulation of intestinal epithelial barrier permeability by the sphingolipid S1P in physiological and pathological states both in vitro and in vivo.

Wang

Funding Period: 10/2001/09-09/30/22 (renewed FY2017)
 Source and Type: VA, MERIT-Review Award
 Dollar Amount: \$150,000/per year
 Title: *Regulation of Intestinal Epithelial Restitution*

The goal of this project is to determine the roles and mechanisms of RNA-binding protein HuR and microRNAs in the regulation of rapid early epithelial restitution after superficial injury.

Funding Period: 07/01/2017-04/30/2021
 Type and Source: NIH, R01 HL134368 (Multiple PIs with Dr. Peixin Yang)
 Dollar Amount: \$390,000/per year
 Title: *MicroRNA-Suppressed Mitochondrial Fusion in Mediating the Teratogenicity of Maternal Diabetes Leading to Heart Defects*

Studies proposed in this project are to investigate the roles and mechanisms of given microRNAs in the pathogenesis of heart defects in normal and diabetic conditions.

Williams

Funding Period: 07/01/2017-06/30/2018

Type and Source: NIH BIRCHW K12
Dollar Amount: \$75,000/per year
Title: Access and Efficiency of Care at High-Volume Institutions for Complex Surgical Oncology Procedures

Studies proposed in this project are to investigate the roles and mechanisms of given microRNAs in the pathogenesis of heart defects in normal and diabetic conditions.

SERVICE (new)

Boutros Member, editorial Board *Surgery*,
Member, publication committee, Association of Academic Surgery
Member, program committee, Association of Academic Surgery

Drogula 3rd Re-accreditation by the NAPBC for the Aiello Breast Center

Milburn Obtained 3 yr NAPBC re-accreditation of the UM UCH Breast Center

Olson Appointed standing member NCI F study section

Pearl Named Deputy Director of Surgery at Baltimore VA

Pediatric Surgery

Clinical

- The Division of Pediatric Surgery had the most productive year clinically ever, generating net revenue of \$1,707,003, total cases 1,750 and wRVUs 24,959.

Academic/Research

- Dr. Lumpkins was voted onto the Board of the National Kidney Foundation -Maryland/Delaware branch
- Dr. Strauch Faculty Marshall at this year's graduation
- Dr. Lumpkins appointed to American Pediatric Surgery Association Workforce Committee
- Dr. Lumpkins appointed to AAMC Group on Women in Medicine and Surgery
- Dr. Lumpkins appointed Director of Medical Student Engagement and Preclinical Education

Plastic Surgery

Clinical

- The Division of Plastic Surgery generating net revenue of \$2,119,357, total cases 846 and wRVUs 25,356.

- The Division performed clinical services at UMMC, UMMT, UM_ROI, UM_Shore Regional Health-Easton, UM_BWMC, UM_Shore Regional Health-Chester River, and GBMC, thus delivering specialized care to Maryland residents in locations throughout the state.

Academic/Research

- New outreach was added with the additional of Dr Erin Rada, who is our first plastic surgeon who is fellowship trained in pediatric plastic surgery.
- Our four (4) faculty members published 8 papers in the last year in peer reviewed journals.
- Dr. Yvonne Rasko heads the research effort and supervises a funded research fellow position. Summer research students are funded for FRCT projects by a generous donation from alumna Kristin Stueber MD.
- Teaching is a priority. We are in the 29th year of our combined Maryland-Hopkins Plastic Surgery training program. It is one of the largest in the US, with 31 residents at 8 hospitals in the Maryland area.
- Division members have leadership positions in the system and medical school, as well as in the residency program, national plastic surgery organizations, and the ACGME.

Thoracic Surgery

Clinical

- The Division of Thoracic Surgery generating net revenue of \$1,453,177, total cases 747 and wRVUs 21,341.
- The Division reorganized and restructured the Thoracic Surgery Office to improve and streamline the patient experience, support growth of the division and support outreach clinics
- We initiated negotiations with the UM_Prince George's Hospital Center
- We setup new office location at the UM_ Bowie Health Center for Dr. Henry to see patients

Academic/Research

- Dr. Joseph Friedberg – Presented at Mesothelioma Clinical Trials Planning Meeting, National Institutes of Health, Bethesda, Maryland - “Surgery and Intraoperative adjuvants”,
- Dr. Joseph Friedberg – Presented at Mesothelioma Applied Research Foundation, 2017 International Symposium on Malignant Mesothelioma, Bethesda, Maryland - “Performance and Standardization of Pleurectomy for Mesothelioma”
- Dr. Joseph Friedberg – Presented at XVI Annual Research Matters Conference, Johns Hopkins, Baltimore, Maryland – “Addressing Maryland - Specific Cancer Issues”
- Dr. Joseph Friedberg – presented at American Society of Clinical Oncology, Chicago, Illinois - “Does Surgery and Other Local Therapies Have a Role in the Management of Mesothelioma?”
- Dr. Joseph Friedberg – ”, Grand Rounds, University of Maryland Medical Center, Baltimore, Maryland - “Of Broccoli, Lasers and Beaver Dams-Mesothelioma Research at the University of Maryland”

- Dr. Joseph Friedberg - Grand Rounds, MedStar Harbor Hospital, Baltimore, Maryland – “Surgery for Mesothelioma”
- Dr. Joseph Friedberg - Grand Rounds, Cleveland Clinic, Cleveland, Ohio – “Surgery for Mesothelioma”
- Dr. Joseph Friedberg - Grand Rounds, University of Maryland Medical Center, Baltimore, Maryland – “Surgery for Mesothelioma”
- Dr. Joseph Friedberg - 8th Annual Evaluation and Management of Pleural Disease, Johns Hopkins University, Baltimore, Maryland - “Updates in Malignant Pleural Mesothelioma”,
- Dr. Joseph Friedberg - American Thoracic Society Conference, San Diego, California - “State of the Art: Lung Cancer in 2018”
- Dr. Joseph Friedberg - 14th International Conference of the International Mesothelioma Interest Group, Ottawa, Canada - “Surgical Palliation”
- Dr. Joseph Friedberg – presented at 41st Annual Meeting of the Japan Society for Respiratory Endoscopy, Tokyo, Japan - “Lung-sparing Surgery for Malignant Pleural Mesothelioma”
- Encarnacion CO, Stewart SJ, Henry GL, Carr SR – presented at ISMICS 18th Annual Scientific Meeting. June 2018. Vancouver, Canada. – “Perception and Barriers to Robotic Simulation Training During Surgical Residency”
- Cannon-Albright LA, Akerley W, Carr SR – presented at IASLC 19th World Conference on Lung Cancer. September 2018. Toronto, Canada – “Population-Based Relative Risks for Lung Cancer Based on Complete Family History of Lung Cancer”
- Dr. Shamus Carr – presented at AATS 98th Annual Meeting. April 2018. San Diego, CA – “Outcomes and Risk Factors for 30 Day Mortality After Decortication for Empyema”
- Dr. Shelby Stewart – presented at the Annual Women’s Conference at St Joseph Medical Center
- Dr. Shelby Stewart – WTS Intuitive Robotic Fellowship Award
- Co-Principal Investigator: Shamus R Carr, MD
The Maryland TERPS (Training, Education for Robotic Performance with Simulation)
Intuitive Surgical
September 10, 2016-January 1, 2019
\$535,000
Goal: Simulator training for residents and attending surgeons to acquire, evaluate, and maintain robotic skills
- Co – Investigator: Joseph Friedberg, MD
Project title National Mesothelioma Virtual Bank (NMVB) – University of Pittsburgh
Funding - \$114,898
Start date 09/01/17
End date 08/31/2019
- Co-Investigator: Joseph Friedberg
Project Title – Prospective Validation of Diagnostic, Prognostic and Predictive Molecular Tests in MPM – Brigham and Women’s Hospital
Funding - \$22,680

Start date 8/14/17

End date: 7/31/19

Marketing

- Dr. Whitney Burrows – Won Physician of the Year - 2018
- Dr. Whitney Burrows – Won “The Golden Apple” Teacher of the Year Award in 2018
- Dr. Whitney Burrows – Won “University of Maryland General Surgery Residency” Junior Teaching Award in 2018
- Dr. Whitney Burrows – Featured in Fall 2017 “University of Maryland Medicine Rounds”
- Dr. Whitney Burrows – Facebook Live – “Esophageal Cancer”
- Melissa Culligan – nominated for Excellence and Innovation through Research
- Updated the webpage to include all the clinical locations where our MDS see patients.
- Discussing ways to market our new process of using Telemedicine with our patients (new consults and post-operative patients).
- Awaiting approval to spotlight published articles written by Dr. Friedberg, Dr. Burrows and Dr. Carr
- Focus on expanding the Mesothelioma Clinical Trials Program
- Marketing focus on the following programs: Telemedicine, Esophageal Cancer, Emphysema Program, Chest Wall Deformity Program, Mesothelioma Clinical Trials Program
- Meso Awareness Facebook Post featuring Melissa Culligan and Colleen Norton
- Dr. Joseph Friedberg – Featured in video on University of Maryland Medical Center website – “Lung-Sparing Surgery for Mesothelioma”
- Dr. Joseph Friedberg – featured in Survivor Net videos

Transplant Surgery

Clinical

- The Division of Transplant Surgery generating net revenue of \$5,144,808, total cases 1,183 and wRVUs 72,622.
- Our program is the 3rd largest liver transplant program in US
- Our program is the 3rd largest pancreas transplant program in US
- Our program is the 6th largest overall (Transplant) program in the US
- Ranked #1 Liver transplant program in US for medical excellence and patient safety by Care Chex Quality Rating System
- Performed transplant program’s 1st successful pediatric liver transplant as collaboration between surgery, pediatrics, and anesthesia

Academic/Research

- Dr. Bromberg – NIH U01 – “U Maryland Mid-Atlantic APOLLO Research Network Omic and Clinical Center”

- Performed transplant program's 1st HIV positive donor to recipient kidney transplant as part of multi-center clinical trial and supported by recent federal legislation permitting this practice (HOPE Act)
- Performed transplant program's 1st normothermic liver perfusion liver transplant as part of innovation new national trial allowing better preservation of organs (OrganOx)

Urology

Clinical

- The Division of Urology generating net revenue of \$2,161,751, total cases 1,481 and wRVUs 23,652.

Academic/Research

- The Division of Urology ranked #23 nationally by U.S. News, highest ranked program in the medical center
- Dr. Siddiqui promoted to associate professor
- Dr. Siddiqui received the young investigator award from the Society for Basic Urological Research
- Dr. Siddiqui made co-head of the bladder cancer chapter in "Operative Standards for Cancer Surgery" published by American College of Surgeons
- Dr. Siddiqui published 5 papers including a video in NEJM.

Vascular Surgery

Clinical

- The Division of Vascular Surgery generating net revenue of \$2,814,579, total cases 1,737 and wRVUs 40,977.
- The Division of Vascular Surgery opened the Office Based Laboratory in the 419 W. Redwood Building in April, 2018. The Open House was on July 18, 2018 and was well attended. Dean Reece, Dr. Sarkar and Mayor Pugh all spoke at the event. The goal is to move lower acuity cases out of the main operating room and perform them in a less invasive office base laboratory setting. We performed 34 cases in FY18.
- The Division of Vascular Surgery added a Physician Service Contract with St. Agnes Hospital.
- The Division of Vascular Surgery added a vascular practice and vascular laboratory at the new UM_Specialty Care at Pembroke Square in Waldorf, MD
- The Division of Vascular Surgery expanded the vascular services at Hanover Hospital in Hanover, PA.
- The Division of Vascular Surgery added a Physician Service Contract as Medical Director of the Bon Secours Vascular Laboratory.

Academic/Research

- Dr. Thomas Monahan – NHLBI (new R01 grant) – "The effect of Myristolated alanine-rich C Kinase Substrate (MARCKS) on kinase interacting with stathmin (KIS) in differential proliferation of vascular..."

- HP-00059915 (Brajesh K Lal) 8.1.2017- 7.30.2019
Maryland Industrial Partnerships Grant, \$200,000 (total)
Novel imaging approaches to peripheral arterial disease.
- NS097876 (Brajesh K Lal) 8.1.2017-7.30.2022
NINDS-National Institutes of Health, \$252,113 (total)
Vascular Imaging Core facility for CREST-Hemodynamics.
- Dr. Brajesh Lal named as President-Elect of the American Venous Forum.

The Department of Surgery enters FY 2019 with a strong, efficient and expanding faculty, demonstrated excellence in the educational, research and clinical arenas, and with solid partnerships with our School, our Campus and a rapidly expanding Medical System.

Our Strategic Plan for FY2019 is as follows:

1. Grow and expand clinical programs throughout our many clinical sites, particularly at Waterloo, Southern Maryland and Southern Pennsylvania.
2. Continue our several years of experience working with UMMC leadership in improving cost savings and efficiency for inpatient services.
3. Add clinical services and new provider service contracts with UM_Capital Region Health
4. Continue to transition ambulatory, outpatient clinical volume from the tertiary hospital to cost effective, efficient, high quality locations (OBL, Waterloo & UMMT).
5. Complete new research operating rooms in the MSTF building.
6. Increase NIH and other Federal grant and contract submissions and funding through collaborations with established scientists throughout UMB as well as recruitment of surgeon-scientists.