

MICROBIOLOGY AND IMMUNOLOGY PROGRAM

FAST FACTS

>40 Program Faculty in 8 departments

23 Current Graduate Students

>20 journal articles published by our students last year.

2 advanced credit courses (minimum) are offered by the department each semester

1 departmental seminar presentation required per student each year

Open book qualifying exam

<http://academicdepartments.musc.edu/immunology/>

Program Director: Bei Liu, MD, MPH

liube@musc.edu, 843-792-8994, HO 612H

Faculty name & contact	Research interests	Recruiting?
Naren Banik baniknl@musc.edu	Calpain's role in spinal cord injury and demyelinating diseases, neuroprotective effects of proteinase inhibitors	Yes PhD
Eric Bartee bartee@musc.edu	Myxomavirus based cancer therapeutics	Yes PhD, MS
Kenneth Chavin chavinkd@musc.edu	Improving survival of transplanted livers and ischemic tissues	Yes PhD
Beichu Guo guobe@musc.edu	Innate immunity in inflammatory diseases and tumor development.	Yes PhD, MS
Azizul Haque haque@musc.edu	Tumor immunology (lymphoma, melanoma and prostate cancer) and autoimmunity	Yes MS
Wei Jiang jianw@musc.edu	Memory B cell death and reduced vaccine responsiveness in HIV disease	Yes PhD
Zihai Li zihai@musc.edu	Cancer Vaccines, Innate Immunity, Immune Tolerance, Stem Cells	Yes PhD
Barb Rohrer rohrer@musc.edu	Immunopathology of macular degeneration	Yes PhD
Stephen Tomlinson tomlinss@musc.edu	The complement system and its role in inflammation and immunity	Yes PhD
Caroline Westwater westwatc@musc.edu	Candida pathogenesis, fungal quorum sensing, fungal oxidative stress resistance, plant-derived antimicrobials	Yes PhD, MS
Jennifer Wu wujjd@musc.edu	Immunotherapy of cancer, inflammation and cancer, tumor microenvironment	Yes PhD
Xue-Zhong Yu yux@musc.edu	Graft vs Host Disease, Stem cell transplantation, T cell development	Yes PhD
Xian (John) Zhang zhangjo@musc.edu	Molecular pathogenesis of Systemic Lupus Erythematosus	Yes MS
Carl Atkinson atkinsoc@musc.edu	Complement inhibitory proteins and their role in cancer, emphysema. and transplantation	Yes MS
Bei Liu liube@musc.edu	Cancer immunotherapy, innate immunity, and inflammation	Yes PhD, MS
Shikhar Mehrota mehrotr@musc.edu	Adoptive immunotherapy of cancer	Yes MS
Christina Voelkel-Johnson johnsocv@musc.edu	Gene therapy of cancer to promote apoptosis, ceramide and spingolipid metabolism of cancer	Yes PhD, MS

Faculty name & contact	Research interest	Recruiting?
Chenthamarakshan Vasu vasu@muscd.edu	Immune tolerance, Immunotherapy of autoimmunity, cancer, and transplant rejection	Yes MS
Gary Gilkeson gilkeson@muscd.edu	Autoimmune disease: rheumatoid arthritis, lupus	No
Diane Kamen kamend@muscd.edu	Autoimmunity and environmental exposures	Possibly
Amanda LaRue laruerc@muscd.edu	Hematology/stem cell biology and vascular biology.	Possibly
Eric Meissner meissner@muscd.edu	HCV and HIV immunobiology	Possibly MS
Satish Nadig nadign@muscd.edu	Treg biology and transplantation tolerance	Possibly PhD, MS
Chrystal Paulos paulos@muscd.edu	Immunotherapy of Cancer, adoptive T-cell therapy, Th17 cell biology	Yes PhD
Titus Reaves reaves@muscd.edu	Inflammatory bowel disease	Possibly MS
Mark Rubinstein rubinsmp@muscd.edu	Immunotherapy of cancer, adoptive T cell therapy	Possibly PhD, MS
Michael Schmidt schmidt@muscd.edu	Nosocomial infection control, biosafety	Possibly MS
Adam Soloff soloff@muscd.edu	Immunopathology of and vaccine development against HIV, SIV and influenza virus	Possibly
Jessica Thaxton thaxton@muscd.edu	Cancer immunology	Possibly MS
Paula Traktman traktman@muscd.edu	Vaccinia virus biology and VRK protein kinases	Yes PhD
John Wrangle wrangle@muscd.edu	Immunotherapy of cancer	Possibly MS
Yi (Benny) Yang yangyi@muscd.edu	Th17 cells and gut microbiome	No
M. Rita Young youngmr@muscd.edu	Immunotherapy of cancer	Possibly
David Cole coledj@muscd.edu	Immunotherapy of cancer, adoptive T cell therapy	No
James Cook cookja@muscd.edu	Molecular mechanisms of inflammation leading to sepsis and septic shock	No
Laura Kasman kasmanl@muscd.edu	Gene therapy of cancer, virus-virus interactions	No
Hal May mayh@muscd.edu	Bioremediation, microbial fuel cells, biofuel production	No
Tamara Nowling nowling@muscd.edu	Regulation of gene expression, sphingolipids and T cell function in in lupus-associated kidney disease	No
James Oates oatesjc@muscd.edu	Biomarkers of disease and role of reactive intermediates in lupus nephritis and CVD in lupus	No
Janardan Pandey pandeyj@muscd.edu	Immunogenetics of infectious, autoimmune, and malignant diseases	No
Inderjit Singh singhi@muscd.edu	Immunology of Neurological disorders such as Multiple Sclerosis, Stroke and Spinal Cord Injury	No
Cynthia Wright wrightcf@muscd.edu	Viral gene expression and virus host interactions	No

STUDENTS' PUBLICATIONS

Microbiology and Immunology

Journal Articles

Lowe, D., Fraser, J., Rollins, L., Bentzley, J., Nie, X., Martin, R., Singh, I., and Jenkins, D. *Vitamin D Improves Functional Outcomes In Neonatal Hypoxic Ischemic Male Rats Treated With N-acetylcysteine And Hypothermia*. *Neuropharmacology*, 2017 Sept. 123: p.186–200. DOI: 10.1016/j.neuropharm.2017.06.004 PMID: 28599922 PMCID: In Process

Lowe, D., Hollis, B., Wagner, C., Bass, T., Kaufman, D., Horgan, M., Givelichian, L., Sankaran, K., Yager, J., Katikaneni, L., and Jenkins, D. *Vitamin D Insufficiency in Neonatal Hypoxic-Ischemic Encephalopathy*. *Pediatr Res*, epub 2017 Jan 17. DOI: 10.1038/pr.2017.13 PMID: 28099429 PMCID: In Process

Alawieh A, Wang W, **Narang A**, Tomlinson S. Thromboembolic Model of Cerebral Ischemia and Reperfusion in Mice. *Methods Mol Biol*. 2016;1462: 357-72. doi: 10.1007/978-1-4939-3816-2_20. PMID: 27604728

Narang A, Qiao F, Atkinson C, Zhu H, Yang X, Kulik L, Holers VM, Tomlinson S. Natural IgM antibodies that bind neopeptides exposed as a result of spinal cord injury , drive secondary injury by activating complement. *J Neuroinflammation*. 2017 Jun 19;14(1):120. doi: 10.1186/s12974-017-0894-6. PMID: 28629465

Banerjee A, Thyagarajan K, Chatterjee S, Chakraborty P, Kesarwani P, Soloshchenko M, Al-Homrani M, Andrijauskaite K, Moxley K, Janakiraman H, **Scheffel MJ**, Helke K, Armenson K, Palanisamy V, Rubinstein MP, Mayer EG, Cole DJ, Paulos CM, Voelkel-Johnson C, Nishimura MI, Mehrotra S. Lack of p53 Augments Antitumor Functions in Cytolytic T Cells. *Cancer Res*. 2016 Sep 15;76(18):5229-40. doi: 10.1158/0008-5472.CAN-15-1798. Epub 2016 Jul 27.

Scheffel MJ, Scurti G, Simms P, Garrett-Mayer E, Mehrotra S, Nishimura MI, Voelkel-Johnson C. Efficacy of Adoptive T-cell Therapy Is Improved by Treatment with the Antioxidant N-Acetyl Cysteine, Which Limits Activation-Induced T-cell Death. *Cancer Res*. 2016 Oct 15;76(20):6006-6016. PMID: 27742673

Neitzke DJ, Bowers JS, Andrijauskaite K, O'Connell NS, Garrett-Mayer E, Wrangle JM, Li Z, Paulos CM, Cole DJ, Rubinstein MP. Th17 Cells Utilize IL-2 Receptor Gamma Chain Cytokines and are Resistant to Apoptosis. *Cancer Immunology Immunotherapy*. 2017 Mar 9 (Epub ahead of print)

Fugle CW, Zhang Y, Hong F, Sun S, Westwater C, Rachidi S, Yu H, Garret-Mayer E, Kirkwood K, Liu B, Li Z. CD24 blunts oral squamous cancer development and dampens the functional expansion of myeloid-derived suppressor cells. *Oncoimmunology*. 2016; 5(10): e1226719. PubMed [journal] PMID: 27853649, PMCID: PMC5087297

Metelli A, Wu BX, **Fugle CW**, Rachidi S, Sun S, Zhang Y, Wu J, Tomlinson S, Howe PH, Yang Y, Garrett-Mayer E, Liu B, Li Z. Surface Expression of TGF β Docking Receptor GARP Promotes Oncogenesis and Immune Tolerance in Breast Cancer. *Cancer Research*. 2016; 76(24):7106-7117. PubMed [journal] PMID: 27913437

Rachidi S, **Metelli A***, **Riesenberg B**, Wu B, Nelson M, **Wallace C**, Paulos C, Rubinstein M, Garrett-Mayer E, Hennig M, Bearden D, Yang Y, Liu B, Li Z. Platelets subvert T cell immunity against cancer via GARP-TGF β axis. *Science immunology*. 2017 May 05; 2(11): eaai 7911. *Co-first authors.

Thaxton JE, **Wallace C**, **Riesenberg B**, Zhang Y, Paulos CM, Beeson C, Liu B, Li Z. Modulation of Endoplasmic Reticulum Stress Controls CD4+ T Cell Activation and Anti-tumor Function. *Cancer immunology research*. 2017; PubMed [journal] PMID: 28642246

Ansa-Addo EA, Zhang Y, Yang Y, Hussey GS, Howley BV, Salem M, **Riesenberg B**, Sun S, Rockey DC, Karvar S, Howe PH, Liu B, Li Z. Membrane-organizing protein moesin controls Treg differentiation and antitumor immunity via TGF- β signaling. *J Clin Invest*. 2017 Apr 3;127(4):1321-1337. doi: 10.1172/JCI89281. Epub 2017 Mar 13. PMID: 28287407

(Microbiology & Immunology Journal article continued)

S.R. Bailey, M.H. Nelson, K. Majchrzak, J.S. Bowers, M.M. Wyatt, A.S. Smith, L.R. Neal, K. Shirai, C. Carpenito, C.H. June, M.J. Zilliox, C.M. Paulos. Human CD26^{high} T cells elicit durable immunity against multiple malignancies via enhanced migration and persistence. *Nature Communications*. In Revision.

M.H. Nelson, **S.R. Bailey**, L.W. Huff, **J.S. Bowers**, K. Majchrzak, K. Thyagarajan, M.M. Wyatt, S. Mehrotra, M.P. Rubinstein, M.I. Nishimura, H.E. Broxmeyer, K. Shirai, K. Armeson, M.J. Zilliox and C.M. Paulos. Human CD26^{high} T cells possess a distinct inflammatory signature and mediate durable memory responses against established tumor. *J Clin Invest*. In Revision.

L.R. Neal, **S.R. Bailey**, M.M. Wyatt, J.S. Bowers, Kinga Majchrzak, M.H. Nelson, C. Haupt, C.M. Paulos, J.C. Varela (2017). The basics of artificial antigen presenting cells in T cell-based cancer immunotherapies. *Journal of Immunology Research and Therapy*. 2(1): 68-80.

J.S. Bowers, M.H. Nelson, K. Majchrzak, **S.R. Bailey**, B. Rohrer, A. Kaiser, C. Atkinson, L. Gattinoni, C.M. Paulos (2017). Th17 cells are refractory to senescence retaining robust antitumor activity after long-term ex vivo expansion. *JCI Insight*. 2(5). doi: 10.1172/jci.insight.90772.

K. Majchrzak, M.H. Nelson, **J.S. Bowers**, **S.R. Bailey**, Megan M. Wyatt, J. Wrangle, J. Varela, M. Rubinstein, Z. Li, R. Himes, S. Chan, C.M. Paulos (2017). Pharmaceutical co-inhibition of β -catenin and p110 paradoxically expands stem memory Th17 cells with heightened antitumor activity. *JCI Insight*. 2(8). doi: 10.1172/jci.insight.90547.

P. Zhu, **S.R. Bailey**, C.M. Paulos, C. Atkinson, S. Tomlinson (2017). Targeted complement inhibition protects vascularized composite allografts from acute graft injury and prolongs graft survival when combined with subtherapeutic cyclosporine A therapy. *Transplantation*, 101(4). doi: 10.1097/TP.0000000000001625.

Heinrichs J, **Bastian D**, Veerapathran A, Anasetti C, Betts B, Yu XZ. Regulatory T-Cell Therapy for Graft-versus-host Disease. *J Immunol Res Ther*. 2016;1(1):1-14. Epub 2016 Apr 28. PMID: 27722210

Sofi MH, Heinrichs J, Dany M, Nguyen H, Dai M, **Bastian D**, **Schutt S**, Wu Y, Daenthanasanmak A, Gencer S, Zivkovic A, Szulc Z, Stark H, Liu C, Chang YJ, Ogretmen B, Yu XZ. *JCI Insight*. 2017 May 18;2(10). pii: 91701. doi: 10.1172/jci.insight.91701. [Epub ahead of print] PMID: 28515365.

Kunal Patel, Carl Atkinson, **Danh Tran**, Satish N. Nadig. Nanotechnological Approaches to Immunosuppression and Tolerance Induction. *Curr Transpl Rep*. 2017 Jun; 4(2): 159-168.

Liu X, **Kwon H** (co-first author), Li Z and Fu YX. 2016. Is CD47 an Innate Immune Checkpoint for Tumor Evasion? *J Hematol Oncol*. 10(1):12. PMID: 28077173.

Microbiology and Immunology

Abstracts/Presentations

Bowers JS, Nelson MH, Majchrzak K, Bailey SR, Rohrer B, Atkinson C, Gattinoni L, Paulos CM. Th17 Cells Are Refractory to Senescence Retaining Robust Antitumor Activity After Long-term Ex Vivo Expansion. Perry V. Halushka MUSC Research Day, Charleston, SC. November 3-4, 2016. (Oral Presentation).

Bowers JS, Nelson MH, Majchrzak K, Bailey SR, Rohrer B, Kaiser ADM, Atkinson C, Gattinoni L, Paulos CM. Th17 cells are refractory to senescence retaining robust antitumor activity after long-term ex vivo expansion. Keystone C7 symposium, Whistler British Columbia, Canada, 19-23 March 2017

Bowers JS, Nelson MH, Majchrzak K, Bailey SR, Rohrer B, Kaiser ADM, Atkinson C, Gattinoni L, Paulos CM. Th17 cells are refractory to senescence retaining robust antitumor activity after long-term ex vivo expansion. APSA, Chicago Illinois, USA, 21-23 April 2017

(Microbiology & Immunology Abstracts/Presentation continued)

Metelli A, Wu B, Fugle CW, Rachidi R, Sun S, Wu J, Liu B, Li Z. Cancer Promotion and Immune Tolerance Via Cancer Cell - Intrinsic Surface Expression of GARP. Perry V. Halushka MUSC Research Day, Charleston, SC. November 3-4, 2016. (Oral Presentation).

Metelli A, Wu BX, Riesenber B, Fugle CW, Sun S, Liu B, Li Z. GARP-TGF β Axis on Activated Platelets Supports Tumor Progression. American Association of Immunology Annual Meeting. May 12-16, 2017. Washington D.C. (Oral Presentation/Poster Presentation).

Fugle CW, Wu B, Liu B, Li Z. The Role of the TGF β -GARP Axis in B Cell Function and Tolerance. Perry V. Halushka MUSC Research Day, Charleston, SC. November 3-4, 2016. (Oral Presentation).

Fugle CW, Liu B, and Li Z. Role of B cell surface TGF-beta in systemic lupus erythematosus. Association for Clinical and Translational Science (ACTS), Washington, SC. 2017 (Poster Presentation).

SR Bailey, MH Nelson, AS Butcher, K Majchrzak, JS Bowers, ME Meek, LR Neal, CM Paulos. CD4+CD26+ T cells exhibit enhanced persistence and anti-tumor activity *in vivo*. International Congress of Immunologists – Melbourne, VIC Australia. September, 2016 (Poster Presentation).

SR Bailey, MH Nelson, JS Bowers, MM Wyatt, LR Neal, K Majchrzak, CM Paulos. CD26high T cells have a natural capacity to migrate and persist in multiple tumor models. Keystone Cancer Immunology and Immunotherapy Symposia – Whistler, B.C. Canada. Match, 2017 (Poster/Oral Presentation).

SR Bailey, MH Nelson, JS Bowers, MM Wyatt, LR Neal, CM Paulos. Human CD26high T cells elicit tumor immunity against multiple malignancies via enhanced migration and persistence. Redox Biology Summer Course – Karolinska Institute in Stockholm, Sweden. May, 2017 (Poster Presentation/Class).

Dhar P, Basher F, Zhang J, Wu J. Modulation of signaling preference of NK cells by different forms of NKG2D ligands and its implications. American Association of Immunology Annual Meeting. May 12-16, 2017. Washington D.C. (Oral Presentation/Poster Presentation).

Dhar P, Basher F, Wu J. Modulation of signaling and metabolic preference of NK cells by different forms of NKG2D ligands and its implications. Hollings Cancer Center Annual Research Retreat, Charleston, SC. October 28, 2016. (Poster Presentation).

Dhar P, Basher F, Wu J. Differential NK cell signaling pathways regulated by NKG2D ligands. Perry V. Halushka MUSC Research Day, Charleston, SC. November 3-4, 2016. (Poster Presentation).

Danh T. Tran, Catherine Dong, Ali Alawieh, Gyda Beeson, Carl Atkinson, Satish N. Nadig. Static Cold Storage Induces Metabolic Alterations and Autophagy in Models of Cardiac Transplantation. Abstract #1150. International Society of Heart & Lung Transplantation 37th Annual Meeting and Scientific Sessions, San Diego, CA, April 2017.

Danh T. Tran, Carl Atkinson, Ali Alawieh, Gyda Beeson, Satish N. Nadig. Rapamycin Reverses Metabolic Alterations Induced by Static Cold Preservation in Models of Transplantation. Abstract #119. American Society of Transplant Surgeon 17th Annual State of the Art Winter Symposium, Miami, FL, January 2017.

Danh T. Tran, Catherine Dong, Ali Alawieh, Gyda Beeson, Carl Atkinson, Satish N. Nadig. Rapamycin Reverses Metabolic Alterations Induced by Static Cold Preservation in Models of Cardiac Transplantation. Abstract #139. MUSC Perry V. Haluska Research Day, Charleston, SC, November 2016.

Danh T. Tran, Catherine Dong, Carl Atkinson, Satish N. Nadig. Hypothermic Preservation Induces Mitochondrial Dysfunction and Metabolic Alteration in Models of Cardiac Transplantation. MUSC MSTP Research Day, Charleston, SC, July 2016.

(Microbiology & Immunology Abstracts/Presentation continued)

Patel KJ, Zhu P, Broome AM, Dixit S, Atkinson C, Nadig SN. Bioengineered Immunotherapeutic Nanoparticles Prevent Transplant Vasculopathy *In Vivo*. SC/NC Chapters of the ACS Annual Meeting Scientific Session. Myrtle Beach, SC. July 2016.

Patel KJ, Zhu P, Broome AM, Dixit S, Atkinson C, Nadig SN. Bioengineered Immunotherapeutic Nanoparticles Prevent Transplant Vasculopathy *In Vivo*. Basic Science in Transplantation (BeST) Meeting. Ft. Lauderdale, FL. Nov 2016.

Patel KJ, Cheng Q, Finnegan R, Rucker L, Nadig SN, Atkinson C. Stabilization of Gap and Tight Junctions Ameliorates Ischemia-Reperfusion Injury and Transplant Vasculopathy in Models of Cardiac Transplantation. AHA Scientific Sessions, Late-Breaking Basic Science. New Orleans, LA. Nov 2016.

Patel KJ, Cheng Q, Rucker L, Allen P, Nadig SN, Atkinson C. Stabilization of Gap and Tight Junctions Improves Transplantation-Related Ischemia Reperfusion Injury in a Mouse Model of Lung Transplantation. Southeastern Surgical Congress Annual Scientific Meeting. Nashville, TN. Feb 2017.

Patel KJ, Cheng Q, Rucker L, Bazzle G, Nadig S, Atkinson C. N-acetylcysteine Potentiates the Protective Effects of α -1-Antitrypsin in a Mouse Model of Orthotopic Lung Transplantation. ISHLT 37th Annual Meeting and Scientific Sessions. San Diego, CA. Apr 2017.

Patel KJ, Cheng Q, Finnegan R, Rucker L, Nadig S, Atkinson C. Augmentation of UW Solution with the Gap and Tight Junction Stabilization Peptide, α CT1, Ameliorates Ischemia-Reperfusion Injury, Facilitates Prolonged Graft Storage, and Protection from Transplant Allograft Vasculopathy. ISHLT 37th Annual Meeting and Scientific Sessions. San Diego, CA. Apr 2017.

Cheng Q, **Patel KJ**, Zhu P, Rucker L, Allen DP, Nadig S, Atkinson C. Donor Lung Pretreatment with a Synthetic Connexin 43 Mimetic Peptide Ameliorates Lung Transplant Ischemia Reperfusion Injury. ISHLT 37th Annual Meeting and Scientific Sessions. San Diego, CA. Apr 2017.

Patel KJ, Cheng Q, Liu B, Allen DP, Finnegan R, Nadig S, Atkinson C. Complement Inhibition in Brain Dead Donors Mitigates Post-Lung Transplantation Inflammation and Injury in a Murine Model. ATS International Conference. Washington, DC. May 2017.

Patel KJ, Cheng Q, Liu B, Allen D, Whelan T, Goddard M, Tomlinson, Nadig SN, Atkinson C. Complement Inhibition in Brain Dead Donors Mitigates Post-Lung Transplantation Inflammation and Injury in a Murine Model. 10th International Conference on Complement Therapeutics. Heraklion, Crete, Greece. June 2017.

Happe M, Ohtola J, Bickford M, Westerink J. Age-related Changes in B Cells Impact Immune Responses to Pneumococcal Vaccination in Aging HIV+ Individuals. Perry V. Halushka MUSC Research Day, Charleston, SC. November 3-4, 2016 (Oral Presentation).

Happe M. 11th Annual Department of Medicine Research symposium at MUSC (Oral /Poster Presentation).

Happe M. Association for Clinical and Translational Science 2017 (Poster Presentation).

Happe M. Abstract submitted for IDWeek 2017 (Infectious Diseases Week)

Knochelmann H, Nelson MH, Bowers JS, Neitzke DJ, Meek ME, Paulos CM. Infusion of fewer T cells streamlines potent antitumor response in adoptive immunotherapy. MUSC MSTP Research Day, Charleston, SC, July 2016. (Poster Presentation).

Knochelmann H, Nelson MH, Bowers JS, Neitzke DJ, Meek ME, Paulos CM. Infusion of fewer T cells streamlines potent antitumor response in adoptive immunotherapy. Perry Halushka Student Research Day, MUSC, Charleston, SC, November 2016. (Poster Presentation).

(Microbiology & Immunology Abstracts/Presentation continued)

Neal L, Huff LW, Nelson MH, Wyatt MM, Bailey SR, Bowers JS, Varela JC, Paulos CM. Lower Activation Signal Strength Supports Wnt/Beta-catenin Signaling and Enhances the Antitumor Activity of Th17 and CD8+ T Cells. Perry Halushka Student Research Day, MUSC, Charleston, SC, November 2016. (Poster Presentation)

**Microbiology and Immunology
STUDENTS' HONORS AND AWARDS**

Bailey, Stephanie

- NIH/NCI 1F31CA192787-01 Ruth L. Kirschstein F31 Fellowship – (2015-2018)
- 2016 Perry Halushka MUSC Research Day – Second Place Oral Talk

Bowers, Jake

- NIH/NCI 1F30CA200272-01 Individual MD/PhD Fellowship– (2015-2018)
- 2016 Willard and Betty Peterson Award, 1st Place, Perry V Halushka MUSC Research Day

Metelli, Alessandra

- Travel Award for the 31st Annual Meeting of the Society of Immunotherapy of Cancer (SITC), 2016 National Harbor, Maryland
- Trainee Abstract Award for Immunology, the Annual Meeting of the American Association of Immunologists (AAI), Washington D.C., 2017

Wallace, Caroline

- NIH/NIDCR T32 DE017551-08 T-COHR: Training in Craniofacial and Oral Health Research (2013–2016)
- MUSC Perry V. Halushka Student Research Day 2014, PhD Oral (Eric James Award), 2nd place
- MUSC College of Dental Medicine Scholars Day 2015, PhD Poster, 3rd place

Riesenberg, Brian

- NIH/NCI F31 Award titled “Mechanistic Understanding of Platelet Mediated Antitumor Immune Suppression”- (07/01/2017 – 06/30/2020). Total Project Direct Costs: \$175,738

Tran, Danh

- NIH/NHLBI Predoctoral Fellowship Training Grant HL007260, 2nd Year Appointment (2017-2008)

Dhar, Payal

- Trainee Abstract Award for Immunology, the Annual Meeting of the American Association of Immunologists (AAI), Washington D.C., 2017

Kwon, Hyunwoo

- APSA (American Physician Scientist Association) Excellent Mentor Award. May 2017.
- Abney Foundation Scholarship, MUSC Hollings Cancer Center. 2016.

Ogunrinde, Elizabeth

- Infectious Disease Society of America (IDSA) Medical Scholar - April 2017
- Rheumatology Research Foundation (RRF) Medical and Graduate Student Preceptorship - June 2017

(Microbiology & Immunology Students' Honors and Awards continued)

Happe, Myroslawa

- SCTR TL1 (T32) Pre-doctoral Clinical and Translational Research Training grant award- August 2016-August 2017, second year appointment (2017-2018)
- Outstanding Research Oral Presentation Award, Department of Medicine 2017
- Presidential Scholar Award- appointment for the duration of 2017-2018 Interprofessional fellow

Patel, Kunal

- Dabney R. Yarbrough III, M.D. Resident Research Award, Department of Surgery, Medical University of South Carolina, 2017
- Trainee Travel Award Recipient, Aegean Conferences, 10th International Conference on Complement Therapeutics, 2017
- Finalist, CVSA Resident Prize, American Heart Association's Council on Cardiovascular Surgery and Anesthesia, 2016
- First Place, Surgery Research Day, Medical University of South Carolina, 2016
- Scholarship Finalist, Southern Thoracic Surgical Association Resident Scholarship, 2016
- Best Resident Research Presentation, South Carolina/North Carolina Chapters of the American College of Surgeons Annual Meeting Scientific Session, 2016

Smith, Aubrey

- The International Federation of Pigment Cell Societies (IFPCS) Travel Award to attend the International Pigment Cell Conference Denver, CO, August 2017 Value \$1000

Neal, Lillian

- Perry V. Halushka MUSC Research Day – 2nd Place Poster Presentation, November 2016
- Distinguished Masters Graduate May 2017 – MUSC Graduate Studies

**Microbiology and Immunology
STUDENTS' ACTIVITIES**

Wallace, Caroline

- Graduate Student Association Vice President, 2016 – 2017

Kwon, Hyunwoo

- American Physician Scientists Association (APSA), Oct 2016 – Present.
- MUSC MSTP Student Representative for 2016 Fall SCJAS (South Carolina Junior Academy of Science) workshop. Oct 2016

Patel, Kunal

- American Thoracic Society (ATS), Trainee Member, 2017-Present
- American Heart Association (AHA), Trainee Member, 2016-Present
- Society of Thoracic Surgeons (STS), Pre-Candidate Member, 2016-Present
- International Society for Heart and Lung Transplantation (ISHLT), Resident Member, 2015-Present

Happe, Myroslawa

- Sigma Xi- The Scientific Research Honor Society, 2017-Present
- Active member of Graduate Student Association, MUSC, 2015-Present

(Microbiology & Immunology Students' Activity continued)

Knochelmann, Hannah

- Co-Founder of COM Translational Research Interest Group
- College of Medicine Team Leader
- Big Sister for Medical Scientist Training Program
- Women's Advocacy Group, Member
- Pediatrics Interest Group, Member
- Patient's First Ambassador Program, Volunteer

Smith, Aubrey

- Accepted to attend the Innovative Genomics Institute's CRISPR Workshop: Practical Aspects of Precision Biology in Berkeley, CA, July 2017