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Dear Faculty,

In this month's issue, our focus is on the [Resurgence of Surgical Science at P&S](#).

Our goal is to streamline the process of bringing novel therapies and surgical advances from bench to bedside, and to give surgeons, who have less time to maintain their own labs, the opportunity to pursue their own research questions.

Under the direction of Donna Farber, PhD, this new venture features some of the world's leading investigators. Nigel Bunnnett, B.Sc, PhD, is uncovering the way chronic pain is transmitted through nerve cells; David Sachs, MD, is developing a pig colony whose organs are more compatible for transplantation in humans; and Giovanni Ferrari, PhD, is exploring how cardiovascular diseases affect the physiology of heart valves and vascular cells. We will continue to report on this important initiative in future newsletters.

Below you will find a list of our recent contributions in cardiac, GI/endocrine, thoracic, and plastic surgery, as well as immunology.

Please continue to email Paul Kurlansky ([pk2245@columbia.edu](mailto:pk2245@columbia.edu)) or me ([crs2@cumc.columbia.edu](mailto:crs2@cumc.columbia.edu)) with regular updates on your grants, publications, and presentations by the first of every month.

Remember, journal links may require subscriptions or a log-in through the Columbia library while PubMed links are accessible to all.

For easy reference, we now post all issues of this [newsletter](#) on the Center for Innovations and Outcomes Research website.

Craig R. Smith, MD, FACS  
Chair, Department of Surgery

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## CONGRATULATIONS

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Donna Farber, PhD has received a grant of \$480,916 from Bristol-Myers Squibb

Research and Development for Tissue Immune Responses in the Human Pancreas.

Giovanni Ferrari, PhD, has been awarded a \$250,000 grant by The Kibel Fund for Aortic Valve Disease Research to study Molecular Determinants of Calcific Aortic Valve Disease.

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## CARDIAC SURGERY

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### Presentations

*Scientific Sessions of the American Heart Association  
Anaheim, CA, November 2017*

Ando M, Takeda K, Kurlansky PA, Wright M, Lee C, Han J, Garan AR, Topkara VK, Yuzefpolskaya M, Colombo PC, Farr M, Naka Y, Takayama H. How much blood type non-O recipients should get blood type O donor hearts? Survival simulation by blood type using the United Network for Organ Sharing registry and Markov mode.

George I. TAVR vs. SAVR: TAVR Pro: The Future of Cardiac Surgery.

Ferrari G. Influence of Mitral Annuloplasty on Durable Repair for Ischemic Mitral Regurgitation. Innovation in Cardiac Surgery: From Imaginative Research to Transformative Clinical Therapy.

*Animal Medical Center's Third Annual One Health Conference  
Cornell University New York, NY, November 2017*

Ferrari G. Pathophysiology Mitral Valve Prolapse.

### Publications

Ando M, Hiroo T, Naka Y, Takeda K. A minimally invasive right ventricular assist device insertion late after a continuous-flow left ventricular assist device implantation. *J Thorac Cardiovasc Surg.* 2017 Aug 16. pii: S0022-5223(17)31719-1. doi: 10.1016/j.jtcvs.2017.07.066. [Epub ahead of print] No abstract available.

[Journal link](#)

[PubMed link](#)

Ando M, Nakanishi K, Cevasco M, Takeda K, Takayama H. "Right ventricle looks bad." "no, it doesn't." "yes, it does." *J Thorac Cardiovasc Surg.* 2017 Dec;154(6):1987.

[Journal link](#)

[PubMed link](#)

Cevasco M, Takayama H. Extracorporeal membrane oxygenation: A bleeding patient's best friend. *J Thorac Cardiovasc Surg*, Published on line Oct 2017.

[Journal link](#)

[PubMed link](#)

Chiang YP, Ginns JN, Takayama. Use of cutting edge technology to learn myocardial "Cutting Edge" in septal myectomy. *J Cardiovasc Thorac Surg*. Accepted Oct 27, 2017. DOI: 10.1016/j.jtcvs.2017.10.108.

[Journal link](#)

Grau JB, Fortier JH, Kushner C, Ferrari G, Brizzio ME, Zapolanski A, Shaw RE. Implementing a protocol to optimize blood use in a cardiac surgery service: results of a pre-post analysis and the impact of high-volume blood users. *Transfusion*. 2017; 57(10):2483-2489.

[Journal link](#)

[PubMed link](#)

Hommes-Schattmann P, Neffe A, Ahmad B, Williams G, M'Bele G, Vanneaux V, Menasché P, Kalfa D, Lendlein A. RGD Constructs With Physical Anchor Groups As Polymer Co-Electrospinnable Cell Adhesives. *Polym. Adv. Technol*. 2017;28:1312-1317

[Journal link](#)

Shimada YJ, Weiner SD, Takayama H. How amazing is a maze procedure in the obstructive hypertrophic cardiomyopathy population? *J Thorac Cardiovasc Surg*. 2017 Sep 11. pii: S0022-5223(17)31889-5. doi: 10.1016/j.jtcvs.2017.09.008. [Epub ahead of print]

[Journal link](#)

[PubMed link](#)

Takayama H, Weiner SD, Bacha E. A deep dive into the left ventricle. *J Thorac Cardiovasc Surg*. Accepted 9 November 2017. Doi: 10.1016/j.jtcvs.2017.11.012

[Journal link](#)

Yoshioka D, Li B, Takayama H, Garan RA, Topkara VK, Han J, Kurlansky P, Yuzefpolskaya M, Colombo PC, Naka Y, Takeda K. Outcome of heart transplantation after bridge-to-transplant strategy using various mechanical circulatory support devices. *Interact Cardiovasc Thorac Surg*. 2017 Dec 1;25(6):918-924. doi: 10.1093/icvts/ivx201.

[Journal link](#)

[PubMed link](#)

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## GI/ENDOCRINE

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### Publications

Heller DR, Chiuzan C, Taub RN, Leinwand JC, Greene AM, Bates GE, Chabot JA, Kluger MD. Recurrence of Optimally Treated Malignant Peritoneal Mesothelioma with Cytoreduction and Heated Intraperitoneal Chemotherapy. *Ann Surg Oncol*.

2017 Dec;24(13):3818-3824.

[Journal link](#)

[PubMed link](#)

Liu X, Braun GB, Qin M, Ruoslahti E, Sugahara KN. In vivo cation exchange in quantum dots for tumor-specific imaging. *Nat Commun*. 2017 Aug 24;8(1):343. doi:

[Journal link](#)

[PubMed link](#)

Rashid MF, Hecht EM, Steinman JA, Kluger MD. Irreversible electroporation of pancreatic adenocarcinoma: a primer for the radiologist. *Abdom Radiol (NY)*. 2017 Oct 19. doi: 10.1007/s00261-017-1349-3. [Epub ahead of print]

[Journal link](#)

[PubMed link](#)

Rare pancreatic tumors. Steinman J, Zaheer A, Kluger MD, Remotti H, Hecht EM. *Abdom Radiol (NY)*. 2017 Oct 11. doi: 10.1007/s00261-017-1342-x. [Epub ahead of print]

[Journal link](#)

[PubMed link](#)

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## IMMUNOLOGY/TRANSPLANTATION

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### Publications

Borsotti C, Danzl NM, Nauman G, Hölzl MA, French C, Chavez E, Khosravi-Mararlooei M, Glauzy S, Delmotte FR, Meffre E, Savage DG, Campbell SR, Goland R, Greenberg E, Bi J, Satwani P, Yang S, Bathon J, Winchester R, Sykes M. HSC-extrinsic sex-related and intrinsic autoimmune disease-related human B cell variation is recapitulated in humanized mice. *Blood Advances*. 2017 1:2007-2018; doi:

[Journal link](#)

Klose CSN, Mahlaköiv T, Moeller JB, Rankin LC, Flamar AL, Kabata H, Monticelli LA, Moriyama S, Putzel GG, Rakhilin N, Shen X, Kostenis E, König GM, Senda T, Carpenter D, Farber DL, Artis D. The neuropeptide neuromedin U stimulates innate lymphoid cells and type 2 inflammation. *Nature*. 2017 Sep 14;549(7671):282-286. doi: 10.1038/nature23676. Epub 2017 Sep 6.

[Journal link](#)

[PubMed link](#)

Kumar BV, Ma W, Miron M, Granot T, Guyer RS, Carpenter DJ, Senda T, Sun X, Ho SH, Lerner H, Friedman AL, Shen Y, Farber DL. Human Tissue-Resident Memory T

Cells Are Defined by Core Transcriptional and Functional Signatures in Lymphoid and Mucosal Sites. *Cell Rep.* 2017 Sep 19;20(12):2921-2934. doi: 10.1016/j.celrep.2017.08.078.

[Journal link](#)

[PubMed link](#)

Meng W, Zhang B, Schwartz GW, Rosenfeld AM, Ren D, Thome JJC, Carpenter DJ, Matsuoka N, Lerner H, Friedman AL, Granot T, Farber DL, Shlomchik MJ, Hershberg U, Luning Prak ET. An atlas of B-cell clonal distribution in the human body. *Nat Biotechnol.* 2017 Sep;35(9):879-884. doi: 10.1038/nbt.3942. Epub 2017 Aug 21.

[Journal link](#)

[PubMed link](#)

Zens KD, Chen JK, Guyer RS, Wu FL, Cvetkovski F, Miron M, Farber DL. Reduced generation of lung tissue-resident memory T cells during infancy. *J Exp Med.* 2017 Oct 2;214(10):2915-2932. doi: 10.1084/jem.20170521. Epub 2017 Aug 30.

[Journal link](#)

[PubMed link](#)

Zens KD, Connors T, Farber DL. Tissue compartmentalization of T cell responses during early life. *Semin Immunopathol.* 2017 Sep 11. doi: 10.1007/s00281-017-0648-7. [Epub ahead of print] Review.

[Journal link](#)

[PubMed link](#)

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## PLASTIC SURGERY

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### Presentations

*Eighty sixth annual meeting of the American Society of Plastic Surgeons  
Orlando, FL, October 2017*

Ascherman J, Morrison K, Zeidler K, Appel J, Mohebbali K, Stokes T, Sudarsky L, Chun Y, Castle J, Colwell A. XPAND II- A multi-center, prospective, clinical trial for the AeroForm tissue expander system for two-stage breast reconstruction.

### Publications

Edwards AK, Glithero K, Grzesik P, Kitajewski AA, Munabi NC, Hardy K, Tan QK, Schonning M, Kangsamaksin T, Kitajewski JK, Shawber CJ, Wu JK. NOTCH3 regulates stem-to-mural cell differentiation in infantile hemangioma. *JCI Insight.* 2017 Nov 2;2(21). pii: 93764. doi: 10.1172/jci.insight.93764. [Epub ahead of print]

[Journal link](#)

[PubMed link](#)

Fong CJ, Garzon MC, Hoi JW, Kim HK, Lauren CT, Morel K, Geller L, Antonov N, Weitz N, Wu J, Hielscher AH. Assessment of Infantile Hemangiomas Using a Handheld Wireless Diffuse Optical Spectroscopic Device. *Pediatr Dermatol*. 2017 Jul;34(4):386-391.

[Journal link](#)

[PubMed link](#)

Lee B, Agarwal J, Ascherman J, Caterson S, Gray D, Hollenbeck S, Khan S, Loeding L, Mahabir R, Miller A, Perdakis G, Schwartz J, Sieling B, Swanson J, Thoma A, Wolfman J, Wright J. Evidence-based clinical practice guideline: Autologous breast reconstruction with DIEP or pedicled TRAM abdominal flaps. *Plast Reconstr Surg*. 2017;140:651e-664e.DOI: 10.1097/PRS.00000000000003768.

[Journal link](#)

[PubMed link](#)

Morrison K, Ascherman B, Ascherman J. Evolving approaches to tissue expander design and application. *Plast Reconstr Surg*. 2017;140:23S-29S. DOI: 10.1097/PRS.00000000000003948.

[Journal link](#)

[PubMed link](#)

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## THORACIC SURGERY

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### Publications

Abrams D, Bacchetta M, Brodie D. When the momentum has gone: what will be the role of extracorporeal lung support in the future? *Curr Opin Crit Care*. 2017 Nov 14. doi: 10.1097/MCC.0000000000000475. [Epub ahead of print]

[Journal link](#)

[PubMed link](#)

Costa J, Shah L, Robbins H, Raza K, Sreekandth S, Arcasoy S2, Sonett JR, D'Ovidio F. Use of Lung Allografts From Donation After Cardiac Death Donors: A Single-Center Experience. *Ann Thorac Surg*. 2017 Nov 8. pii: S0003-4975(17)31048-2.

[Journal link](#)

[PubMed link](#)

Chicotka S, Burkhoff D, Dickstein ML, Bacchetta M. Extracorporeal Membrane Oxygenation for End-Stage Interstitial Lung Disease With Secondary Pulmonary Hypertension at Rest and Exercise: Insights From Simulation Modeling. *ASAIO J*. 2017

Aug 31. doi: 10.1097/MAT.0000000000000646. [Epub ahead of print]

[Journal link](#)

[PubMed link](#)

Dorrello NV, Guenthart BA, O'Neill JD, Kim J, Cunningham K, Chen YW, Biscotti M, Swayne T, Wobma HM, Huang SXL, Snoeck HW, Bacchetta M, Vunjak-Novakovic G. Functional vascularized lung grafts for lung bioengineering. *Sci Adv*. 2017 Aug 30;3(8):e1700521. doi: 10.1126/sciadv.1700521. eCollection 2017 Aug.

[Journal link](#)

[PubMed link](#)

Kim J, Guenthart B, O'Neill JD, Dorrello NV, Bacchetta M, Vunjak-Novakovic G. Controlled delivery and minimally invasive imaging of stem cells in the lung. *Sci Rep*. 2017 Oct 12;7(1):13082. doi: 10.1038/s41598-017-13280-9.

[Journal link](#)

[PubMed link](#)

McLaughlin V, Bacchetta M, Badesch D, Benza R, Burger C, Chin K, Frantz R, Frost A, Hemnes A, Kim NH, Rosenzweig EB, Rubin L. Update on Pulmonary Arterial Hypertension Research: Proceedings from a Meeting of Experts. *Curr Med Res Opin*. 2017 Nov 13:1-37. doi: 10.1080/03007995.2017.1404974. [Epub ahead of print]

[Journal link](#)

[PubMed link](#)

Meng ML, Bacchetta MD, Spellman J. Anesthetic management of the patient with extracorporeal membrane oxygenator support. *Best Pract Res Clin Anaesthesiol*. 2017 Jun;31(2):227-236. doi: 10.1016/j.bpa.2017.07.005. Epub 2017 Jul 18. Review.

[Journal link](#)

[PubMed link](#)

Salna M, Chicotka S, Biscotti M 3rd, Agerstrand C, Liou P, Ginsburg M, Oommen R, Sonett JR, Brodie D, Bacchetta M. Management of Surge in Extracorporeal Membrane Oxygenation Transport. *Ann Thorac Surg*. 2017 Nov 23. pii: S0003-4975(17)31044-5. doi: 10.1016/j.athoracsur.2017.07.019. [Epub ahead of print]

[Journal link](#)

[PubMed link](#)

von Dossow V, Costa J, D'Ovidio F, Marczin N. Worldwide trends in heart and lung transplantation: Guarding the most precious gift ever. *Best Pract Res Clin Anaesthesiol*. 2017 Jun;31(2):141-152. doi: 10.1016/j.bpa.2017.08.001.

[Journal link](#)

Zhao J, Wang D, Ballard-Croft C, Wang J, Hsu PL, Bacchetta M, Zwischenberger JB.

Hybrid Extracorporeal Membrane Oxygenation Using Avalon Elite Double Lumen Cannula Ensures Adequate Heart/Brain Oxygen Supply. *Ann Thorac Surg*. 2017 Sep;104(3):847-853. doi: 10.1016/j.athoracsur.2017.01.119. Epub 2017 May 9.

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