

Steven R. Little

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Departments of Chemical and Petroleum Engineering,
Bioengineering, Pharmaceutical Sciences,
Immunology, Ophthalmology and
The McGowan Institute for Regenerative Medicine
University of Pittsburgh
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EDUCATION

- Ph.D. Chemical Engineering** Massachusetts Institute of Technology, May 2005
Minor: Biology
Dissertation: Poly(β -Amino Ester)s as pH Sensitive Biomaterials for
Microparticulate Genetic Vaccine Delivery
Mentor: Robert Langer, Sc.D.
- B.S. Chemical Engineering** Youngstown State University, June 2000
Summa-Cum Laude
Minors: Chemistry & Mathematics

PROFESSIONAL EXPERIENCE

Distinguished Professor, University of Pittsburgh. Pittsburgh, PA. May 2021 – present.

John A. Swanson School of Engineering - Departments of Chemical and Petroleum Engineering and
Bioengineering

School of Pharmacy – Department of Pharmaceutical Sciences

School of Medicine – Departments of Immunology, Ophthalmology and The McGowan Institute for
Regenerative Medicine

Chair, Department of Chemical and Petroleum Engineering, University of Pittsburgh. Pittsburgh,
PA. May 2012 – present.

William Kepler Whiteford Endowed Professor, University of Pittsburgh. Pittsburgh, PA. Sept 2015
– April 2021.

John A. Swanson School of Engineering - Departments of Chemical and Petroleum Engineering and
Bioengineering

School of Pharmacy – Department of Pharmaceutical Sciences

School of Medicine – Departments of Immunology, Ophthalmology and The McGowan Institute for
Regenerative Medicine

Associate Professor and CNG Faculty Fellow, University of Pittsburgh. Pittsburgh, PA. May 2012 –
Aug 2015.

John A. Swanson School of Engineering - Departments of Chemical and Petroleum Engineering and
Bioengineering

School of Medicine – Departments of Immunology, Ophthalmology and The McGowan Institute for Regenerative Medicine

Assistant Professor and Bicentennial Alumni Faculty Fellow, University of Pittsburgh. Pittsburgh, PA. Jan 2006 – April 2012.

John A. Swanson School of Engineering - Departments of Chemical and Petroleum Engineering and Bioengineering

School of Medicine – Department of Immunology, The McGowan Institute for Regenerative Medicine

NSF Graduate Research Fellow, Department of Chemical Engineering, Massachusetts Institute of Technology. Cambridge, MA. Sept 2000 - May 2005.

SURF Undergraduate Research Fellow, California Institute of Technology, Pasadena, CA. June 1999 – Aug 1999.

NSF REU Undergraduate Research Fellow, University of Pittsburgh. Pittsburgh, PA. June 1998 – Aug 1998.

SELECT FELLOWSHIPS AND AWARDS

Elected as a Fellow of the American Institute for the Advancement of Science (AAAS), 2022

Inducted into the National Academy of Inventors (NAI), 2022

- *For demonstrating a highly prolific spirit of innovation in creating and facilitating outstanding inventions that have made a tangible impact on the quality of life, economic development, and welfare of society.*

Appointed to the Special Faculty Rank of “Distinguished Professor” by the Chancellor of the University of Pittsburgh, 2021

- *Denotes extraordinary, internationally recognized scholarly attainment in the field*

Distinguished Service Award, Controlled Release Society, 2021

Reappointed as the William Kepler Whiteford Endowed Professor, 2020

Elected as a Fellow of the Controlled Release Society (CRS), 2020

- *For distinguished leadership in the field through impactful contributions in fundamental or applied research, technology, products and/or education.*

Chancellor’s Distinguished Public Service Award of the University of Pittsburgh, 2019

- *The University of Pittsburgh’s Highest Honor for Public Service*
- *The only individual in University History to Win all three Chancellor’s Awards (Teaching in 2013 and Research in 2012).*

American Chemical Society “Pittsburgh Award”, 2018

- *In recognition of outstanding leadership in chemical affairs in the local and larger professional community, increasing chemical knowledge, promoting the chemical industry, and benefitting humanity.*

Controlled Release Society Young Investigator Award, 2018

- *Given to one individual in the world each year under the age of 40*

Pittsburgh Business Times Innovation Award, 2017

- *Named one of 15 inaugural award winners in 2017 for founding Qrono Inc*

J Douglas Faires Memorial Colloquium Speaker Award of Youngstown State University, 2017

- *Named the 11th Distinguished Lecturer in Honor and Memory of One of YSU’s Most Distinguished and Beloved Faculty Members, J Douglas Faires*

Elected as a Fellow of the American Institute for Medical and Biological Engineering (AIMBE), 2016

- *“Top 2% of the Most Accomplished Leaders in the Field of Medical and Biological Engineering”*

Elected as a Fellow of the Biomedical Engineering Society (BMES), 2015

- *Citation: “For exceptional contributions to the design and development of controlled release and biomimetic materials, Steven R. Little is recognized by being named a BMES Fellow”*

Named William Kepler Whiteford Endowed Professor of Chemical and Petroleum Engineering, 2015

Curtis W. McGraw Research Award of the American Society of Engineering Education (ASEE), 2015

- *Given to 1 individual in the United States each year representing all engineering disciplines*
- *The only individual in University of Pittsburgh history to receive this award.*

The Carnegie Science Award (Advanced Materials), 2015

Selected one of the Pittsburgh Business Times’ Fast Trackers (University Leaders), 2015

Named as one of the Inaugural Fellows of the University Honors College, University of Pittsburgh, 2015

- *One of Only 3 Inaugural Fellows Selected in the School of Engineering including Prof George Stetton and Prof Harvey Borovetz*

Selected as one of Pittsburgh Magazine’s “40 under 40”, 2014

Phase II Coulter Translational Research Award, 2014

Named One of Five Pittsburgh “Disruptors” Who are “Shaking Up the Status Quo and Reshaping

Our World” by Pop City Pittsburgh, 2014

University of Pittsburgh Institute for Clinical Research Distinguished Alumni Award, 2014

Innovative Ophthalmic Research Award - Research to Prevent Blindness (RPB), 2014

Chancellor’s Distinguished Teaching Award of the University of Pittsburgh, 2013

- *The University of Pittsburgh’s Highest Honor for Teaching*
- *The only individual in University History to Win all three Chancellor’s Awards (Research in 2012 and Public Service in 2019).*

The Carnegie Science Award (University Educator), 2013

Pitt Innovator Award, 2012

Best Mentor of an Underrepresented Student, 2012 Pitt EXCEL Summer Undergraduate Research Program

Named a “Camille Dreyfus Teacher-Scholar”, 2012

- *One of only 4 engineers selected nationally in 2012*
- *Highlighted In: Angewandte Chemie International Edition (2012), 51(31): 7631*

Named CNG Faculty Fellow, School of Engineering, 2012

Invited Participant, National Academy of Engineering Frontiers of Engineering Symposium, 2012

Chancellor’s Distinguished Research Award of the University of Pittsburgh, 2012

- *The University of Pittsburgh’s Highest Honor for Research*
- *The only individual in University History to Win all three Chancellor’s Awards (Teaching in 2013 and Public Service in 2019).*

Society for Biomaterials Young Investigator Award, 2012

- *One individual selected in the world each year*

Coulter Translational Research (Early Career) Award, 2011

Distinguished Alumni Award, Youngstown State University, 2010

Board of Visitors Award, Swanson School of Engineering, 2009

- *“Most Outstanding Faculty Member in the School of Engineering”*

Named Bicentennial Alumni Faculty Fellow, School of Engineering, 2009

Beckman Young Investigator Award, 2008

- *Traditionally, each University can only nominate one professor in the Sciences and Engineering.*

Institute for Clinical Research Education Award, for Most Outstanding Grant Proposal in Graduating Class, 2008

AHA Career Development Award, 2007

Distinguished Faculty Fellowship, School of Engineering, 2007

NIH K-Award, 2007

- *The NIH covers 75% of the salary of its K-Awardees for 4 years*

AAAS Excellence in Research Award, 2005

- *Awarded for outstanding PhD thesis nationally*

National Science Foundation Graduate Fellow, 2000 – 2003

Tau Beta Pi Graduate Fellow, 2000

Phi Kappa Phi Mavrigian-Grim Graduate Fellow, 2000

AIChE Professional Promise Award, 1999

- *Most outstanding senior*

Eugene D. Scudder Physical Chemistry Award, 1999

ACS Organic Chemistry Award, 1999

- Additional awards for founded companies included under section entitled "Entrepreneurship"

- Awards for mentored students included under section entitled "Mentee Awards"

ADDITIONAL RECOGNITION

Selected as a Member of the Awards Committee for the American Association of Pharmaceutical Scientists (AAPS) by the Board of Directors, 2022-2024

Selected as the Program Chair for the Controlled Release Society's (CRS) Annual Meeting in 2020, the Society's First Virtual Annual Meeting, by the CRS Board of Directors

Selected as an Editor - Drug Delivery and Translational Research, 2019

Elected to the Board of Directors (Director-At-Large) of the Controlled Release Society (CRS), 2018 – 2021

Selected as a member of the Scientific Advisory Board for the United Kingdom's Regenerative Medicine Platform Hub, 2015 – present

Selected by the Board of Directors of the Controlled Release Society (CRS) to Serve as Special Advisor on Leading an Effort to Create and Manage Divisional Entities within the Society, 2017

Named "Representative of the Board of Directors for Focus Groups" by the Board of Directors of

the Controlled Release Society (CRS), 2017 – 2018

Selected by the ASEE as one of the Department Chairs Nationwide to Advise them on a Pilot Program for a formal Department Chair Engineering Research Council (ERC) Conclave, 2015

Elected as the Chair of the American Institute of Chemical Engineers (AIChE) Chemical Engineering Department Chairs Division, 2015 – 2017

Elected to the Position of Representative for Special Interest Groups on the Board of Directors – Society for Biomaterials, 2013 – 2015

Associate Editor – Nanobiomedicine, 2014 – present

Elected to the Position of Chairman, Drug Delivery Special Interest Group – Society for Biomaterials, 2011 – 2013

Elected to the Position of Vice-Chairman, Drug Delivery Special Interest Group – Society for Biomaterials, 2009 – 2011

Science Advisory Board, Fox Center for Vision Restoration, 2009 – present

Research Website Awarded the Gold ADDY, American Advertising Federation. “Most innovative flash website.” – <http://littlelab.pitt.edu>

Research Website Named “Best of Show”, American Institute for Graphic Arts – <http://littlelab.pitt.edu>

Member, Board of Directors - EduNations – (March 2012 – January 2020) a charitable organization that establishes educational infrastructure by building schools, training teachers, and providing children with free education in Sierra Leone, Africa (consistently rated as the worst place to live on the planet). – www.edunations.org

PEER-REVIEWED PUBLICATIONS AND REVIEWS

- 117) Acharya, A.P., Greene, A.C., Sezginel, K.B., Devanesan, H.P.G., Shanthi, P.M., Lawson, H.D., Liu, C., Rosi, N.L., Kumta, P.N., Tang, Y., Chan, S.Y., Wilmer C.E., Flynn, J.L., **Little, S.R.** In Silico Screening of Drug Delivery Materials: Discovery of a Metal-Organic Framework that Clears Mycobacterium Tuberculosis Infection. (*Nature Nanotechnology*, submitted).
- 116) Tanyeri, N.Y., Amer, M., Balmert, S.C., Korkmaz, E., Falo, L.D., **Little, S.R.** Microfluidic Systems for Manufacturing of Microparticle-Based Drug Delivery Systems: Design, Construction and Operation. (*ACS Biomaterials Science and Engineering*, first review complete - responding to peer reviewers' comments).
- 115) Sands, R., Binion, D., **Little, S.R.** Localized, Oral IBD Immunotherapy with TRI-MP to Enrich for Regulatory T-Cells and to Attenuate Colitis in a Murine Model of Inflammatory Bowel Disease. (*Journal of Crohn's and Colitis*, first review complete - responding to peer reviewers' comments).
- 114) Balmert, S.C., Carey, C.D., Fiorina, C.M., Erdos, G., Zhang, J., Larregina, A.T., Korkmaz, E., **Little, S.R.**, Falo, L.D. Engineering the Skin Microenvironment to Promote Antigen-Specific Immune Tolerance. (*Science Translational Medicine*, draft in hand).

- 113) Lorentz, K.L., Bruk, L.A., Gupta, P., Cunnane, E.M., Ramaswamy, A.K., Mandal, B.B, Fedorchak, M.V., **Little, S.R.**, Weinbaum, J.S., Vorp, D.A. Validation of Artificial MSCs for Use in Tissue Engineered Vascular Grafts. (*Nature: Scientific Reports*, submitted).
- 112) Greene, A.C., Shehabeldin, M., Gao, J., Balmert, S.C., Ratay, M., Sfeir, C. (2022) Local Induction of Regulatory T Cells Prevents Inflammatory Bone Loss in Ligature-Induced Experimental Periodontitis in Mice. (*Nature: Scientific Reports*, 12:5032).
- 111) Shehabeldin, M., Gao, J., Ki, Y., Chong, R., Greene, A., **Little, S.R.**, Sfeir, C. Local Delivery of CCL2 Reverses Murine Periodontitis and Accelerates Repair. (*Journal of Dental Research*, in press).
- Will be Featured on the Cover of the Journal Issue
- 110) Schilling, A.L., Wang, E. W., Lee, S., **Little, S.R.** (2022) Advances in Controlled Drug Delivery to the Perinasal Sinuses. (*Biomaterials*, 282:121430).
- 109) Schilling, A.L., Cannon, E., Fullerton, S., Lee, S.E., Wang, E.W., **Little, S.R.** (2022) A Ready-to-use, Thermoresponsive and Extended-Release Delivery System for the Paranasal Sinuses. (*Drug Delivery and Translational Research*, 12:708-719).
- 108) Lorentz, K.L., Gupta, P., Shehabeldin, M.S., Lickert, E.M., Rodriguez, B.R., Cunnane, E.M., Ramaswamy, A.K., Fedorchak, M.V., **Little, S.R.**, Weinbaum, J.S., Sfeir, C.S., Mandal, B.B., Vorp, D.A. (2021) CCL2 loaded microparticles promote acute patency in silk-based vascular grafts implanted in rat aortae. (*Acta Biomaterialia*, 135:126-138).
- 107) Bentley, E., **Little, S.R.** (2021) Local Delivery Strategies for the Control of Immune Homeostasis (*Advanced Drug Delivery Reviews*, 178:113971).
- 106) Acharya, A.P., Tang, Y., Bertero, T., Tai, Y.Y., Woodcock, C., Sun, W., **Little, S.R.**, Chan, S.Y. (2021) Simultaneous Pharmacologic Inhibition of YAP1 and GLS1 via Inhaled Polymer Microparticles Improves Pulmonary Hypotension. (*Journal of the American Heart Association*, 2021;10:e019091).
- 105) Tanyeri, N.Y., Ahlmark, B.Z., **Little, S.R.** (2021) Advances in Multiplexed Paper-Based Analytical Devices for Cancer Diagnosis: A Review of Technological Developments., (*Advanced Materials Technologies*, early view (April 21, 2021) doi: 10.1002/admt.202001138).
- Featured on the Frontispiece of the Journal Issue
- 104) Borrelli, M., Turnquist, H.R., **Little, S.R.** (2021) Advances in Biologic Delivery for the Treatment of Cardiac Diseases. (*Advanced Drug Delivery Reviews*, 173: 181-215).
- 103) Bassin, E. Piganelli, J., **Little, S.R.** (2021) Auto-antigen and immunomodulatory agent based approaches for antigen-specific tolerance in NOD mice. (*Current Diabetes Reports*, 21(3):9).
- 102) Schilling, A.L., **Little, S.R.**, Wang, E.W., Lee, S.E. (2021) Reply: A preclinical model to tackle chronic rhinosinusitis. (*International Forum of Allergy and Rhinology*, (11)828-829).
- 101) Pacheco, C.M.F., Maltos, K.L.M., Thomas, L.L., Zhuang, Z., Yoshizawa, S., Garlet, G.P., **Little, S.R.**, Sfeir, C.S. Local sustained delivery of anti-IL-17A Antibodies Limits Inflammatory Bone Loss in Murine Experimental Periodontitis (*Journal of Immunology*, 206(10):2386-2392).
- 100) Patel, S.K., Greene, A.C., Desai, S.M., Rothstein, S.N., Basha, I. T., MacPherson, J.S., Wang, Y., Zou, Y., Shehabeldin, M., Sfeir, C.S., **Little, S.R.**, Rohan, L.C. (2021) Biorelevant and Screening

Dissolution Methods for Minocycline Hydrochloride Microspheres Intended for Periodontal Administration. (*International Journal of Pharmaceutics*, 596:120261).

- 99) Schilling, A.L., Moore, J., Kalahci, Y., **Little, S.R.**, Rigatti, L.H., Wang, E.W., Lee, S. (2021) Evaluating Inflammation in an Obstruction-Based Chronic Rhinosinusitis Model in Rabbits. (*International Forum of Allergy and Rhinology*, (4):807-809).
- 98) Bellotti, E., Schilling, A.L., **Little, S.R.**, Decuzzi, P. (2020) Injectable Thermoresponsive Hydrogels as Drug Delivery System for the Treatment of Central Nervous System Disorders: A Review. (*Journal of Controlled Release*, 329:16-35).
- 97) Bassin, E.J., Buckley, A.R., Piganelli, J.D., **Little, S.R.** (2020) TRI Microspheres Prevent Inflammatory Arthritis in a Collagen-Induced Arthritis Model. (*PLoS One*, 15(9): e0239396).
- 96) Schilling, A.L., Kulahci, Y., Moore, J., Wang, E.W., Lee, S.E., **Little, S.R.** (2020) A thermoresponsive hydrogel system for long-acting corticosteroid delivery into the paranasal sinuses. (*Journal of Controlled Release*, 330(889-897)).
- 95) Greene, A.C., Acharya, A.P., Lee, S.B., Gottardi, R., Peterson, S., Zaleski, E., Besingi, R., **Little, S.R.** (2020) Cranberry Extract-Based Formulations for Preventing Bacterial Biofilms. (*Drug Delivery and Translational Research*, e-pub ahead of print: DOI: 10.1007/s13346-020-00837-x).
- 94) Sarmiento, B., Little, S.R. (2020) Fundamentals of Nanomedicines Toward Clinical Translation. (*Drug Delivery and Translational Research*, **10**: 571).
- 93) Ding, X., Gao, J., Acharya, A., **Little, S.R.**, Wang, Y. (2020) Azido-Functionalized Polyurethane Designed for Making Tunable Elastomers by Click Chemistry. (*ACS Biomaterials Science and Engineering*, **6**(2): 852-864).
- 92) Fisher, J.D., Zhang, W., Balmert, S.C., Schweizer, R., Aral, A.M., Unadkat, J.V., Komatsu, C., Dong, L., Erubas, V., Schnider, J., Zhaoxiang, Z., Turnquist, H.R., Solari, M.G., Gorantla, V.S., **Little, S.R.** (2020) Treg Inducing Microparticles Promote Donor-Specific Tolerance in Experimental Vascularized Composite Allotransplantation. (*Proceedings of the National Academy of Sciences*, **116**(51): 25784-25789).
- 91) Fisher, J.D., Zhang, W., Aral, A.M., Balmert, S.C., Kulahci, Y., Turnquist, H.R., Solari, M.G., Gorantla, V.S., **Little, S.R.** (2019) In situ recruitment of regulatory T cells promotes donor-specific tolerance in vascularized composite allotransplantation. (*Science Advances*, 13;6(11): eaax8429).
- 90) Azvedo, M.C., Garlet, T.P., Francisconi, C.F., Colavite, P.M., Tabanez, A.P., Melchiades, J.L., Trombone, A.P.F., Sfeir, C.S., **Little, S.R.**, Silva, R.M., Garlet, G.P. (2019) Vasoactive Intestinal Peptide (VIP) Immunoregulatory Role at the Periapex: Associative and Mechanistic Evidence from Human and Experimental Periapical Lesions. (*Journal of Endodontics*, **45**(10): 1228-1236).
- 89) Joseph, N., Lawson, H.D., Overhold, K.J., Domodaran, K., Gottardi, R., Acharya, A.P., **Little, S.R.** (2019) Synthesis and Characterization of Ca-Sr-Metal Organic Frameworks for Biodegradable Orthopedic Applications. (*Nature – Scientific Reports*, **9**: 13024).
- 88) Leong, H.S., Butler, K.S., Brinker, J., Azzawi, M., Conlan, S., Dufés, C., Owen, A., Rannard, S., Scott, C., Chen, C., Dobrovolskaia, M.A., [...], Sarmiento, B., das Neves, J., Santos, H.A., Mitragotri, S., **Little, S.R.**, Peer, D., Amiji, M.M., Alonso, M.J., [...], Zheng, G., Pastore, C. (2019) On the issue of transparency and reproducibility in nanomedicine. (*Nature Nanotechnology*, **14**, 629-635.)

- 87) **Little, S.R.** (2019) Perspective: The current status and future directions of CRS Focus Groups. (Invited Perspective Article, *Journal of Controlled Release*, **300**: 46-51).
- 86) Bellotti, E., Fedorchak, M.V., Velankar, S. S., **Little, S.R.** (2019) Tuning of Thermoresponsive pNIPAAm Hydrogels for the Topical Retention of Controlled Release Ocular Therapeutics. (*Journal of Materials Chemistry B*, **7**(8): 1276-1283).
- 85) Balazs, A.C., Whitesides, G.M., Brinker, C. J., Aronson, I., Chaikin, P., Dogic, A., Glotzer, S., Hammer, D., Irvine, D., **Little, S.R.**, de la Cruz, M. O., Parikh, A., Stupp, S., Szostak, J. (2018) Designing Biomimetic, Dissipative Material Systems. (*United States Department of Energy Office of Scientific and Technical Information, Invited Technical Report*, doi: 10.2172/1235400).
- 84) Zhuang, Z., Yoshizawa, S., Glowacki, A.J., Maltos, K., Pacheco, C., Mulkeen, M., Myers, N., Cong, R. Verdellis, K., Garlet, G.P., **Little, S.R.**, Sfeir, C.S. (2018) Induction of M2 Macrophages Prevents Bone Loss in Murine Periodontitis. (*Journal of Dental Research*, **98**(2): 200-208).
- 83) Ratay, M.L., Balmert, S.C., Bassin, E. J., **Little, S.R.** (2018) Controlled Release of an HDAC Inhibitor for Reduction of Inflammation in Dry Eye Disease. (*Acta Biomaterialia*, **71**: 261-270).
- 82) Fisher, J.D., Zhang, W., Aral, A.M., Balmert, S.C., Kulahci, Y., Turnquist, H.R., Solari, M.G., Gorantla, V.S., **Little, S.R.** (2018) Biomimetic Microparticles Promote Survival of Vascularized Composite Allografts. (*United States Department of Defense Report to the Executive Agent, FY17*: 217-218).
- 81) Francisconi, C.F., Vieira, A.E., Fonseca, A.C., d Avezdo, M., Trombone, A.P.F., Letra, A., Silva, R.M., Sfier, C.S., **Little, S.R.**, Garlet, G.P. (2018) RANKL Triggers Treg-mediated Immunoregulation in Inflammatory Osteolysis. (*Journal of Dental Research*, **97**(8): 917-927).
- 80) Nichols, D.A., Sondh, I.S., **Little, S.R.**, Zunino, P., Gottardi, R. (2018) Design and Validation of an Osteochondral Bioreactor for the Screening of Treatments for Osteoarthritis. (*Biomedical Microdevices*, **20**(1): 18).
- 79) Fuller, T.W., Acharya, A.P., Meyyappan, T., Yu, M., Bhaskar, G., **Little, S.R.**, Tarin, T.V. (2018) Comparison of Bladder Carcinogens in the Urine of E-cigarette Users Versus Non E-Cigarette Using Controls. (*Nature - Scientific Reports*, **8**: 507).
- 78) Hwang, M., Ding, Gao, J., Acharya, A.P., **Little, S.R.**, (2018) Wang, Y. A Biocompatible Betaine-functionalized Polycation for Coacervation. (*Soft Matter*, **14**(3): 387-395).
- 77) Ratay, M.L, Balmert, S.C., Acharya, A.P., Greene, A.G., Meyyappan, T., **Little, S.R.** (2017) TRI Microspheres Prevent Key Signs of Dry Eye Disease in an Experimental Inflammatory Model. (*Nature - Scientific Reports*, **7**:17527).
- 76) Ratay, M.L., Bellotti, E., Gottardo, R., **Little, S.R.** (2017) Modern Therapeutic Approaches for Noninfectious Ocular Diseases Involving Inflammation. (*Advanced Healthcare Materials*, **6**:1700733).
- *Featured on the Cover of the Journal*
 - *Featured in Advanced Science News, December 24, 2017*
- 75) Washington, M.A., Balmert, S.C., Fedorchak, M.V., **Little, S.R.**, Watkins, S.C., Meyer, T.A. (2018) Monomer Sequence in PLGA microparticles: Effects on Acidic Microclimates and *in vivo* Inflammatory Response. (*Acta Biomaterialia*, **65**: 259-271).

- 74) Acharya, A.P., Tarin, T., **Little, S.R.** (2017) An Inexpensive, Point-of-Care Urine Test for Bladder Cancer in Patients Undergoing Hematuria Evaluation. (*Advanced Healthcare Materials*, **6**:1700808).
- 73) Fedorchak, M.V., Conner, I.P., Cugini, A., Schuman, J.S., **Little, S.R.** (2017) Long Term Glaucoma Drug Delivery Using a Topically Retained Gel/Microsphere Eye Drop. (*Nature Scientific Reports*, **7**: 8639).
- *Technology described in this publication served the basis for founding OTERO, Inc.*
- 72) Balmert, S.C., Carey, C.D., Vu, J.R., Fedorchak, M.V., Falo, L.D., **Little, S.R.** (2017) In vivo Induction of Regulatory T Cells Promotes Allergen Tolerance and Suppresses Allergic Contact Dermatitis. (*Journal of Controlled Release*, **261**: 223-233).
- 71) Bayer, E., Jordan, J., Roy, A., Gottardi, R., Fedorchak, M.V., Kumta, P. N, **Little, S.R.** (2017) Programmed PDGF-BB and BMP-2 Delivery from a Hybrid Calcium Phosphate/ Alginate Scaffold. (*Tissue Engineering Part A*, **23**(23/24): 1382-1393).
- *Featured on the Cover of the Journal*
- 70) Ratay, M.L., Glowacki, A.J., Balmert, S.C., Acharya, A.P., Polat, J., Andrews, L.P., Fedorchak, M.V., Schuman, J.S., Vignali, D.A.A., **Little, S.R.** (2017) Treg-Recruiting Microspheres Prevent Inflammation in a Murine Model of Dry Eye Disease. (*Journal of Controlled Release*, **258**: 208-217). PMID: 28501670
- 69) Acharya, A.P., Guaragno, M., Sinha, M., Balmert, S.C., Bandi, R., Kumta, P.N., Wang, Y., Vignali, D.A., **Little, S.R.** (2016) Localized Multi-Component Delivery Platform Generates Local and Systemic Anti-Tumor Immunity. (*Advanced Functional Materials*, **27**: 1604366).
- 68) Washington, M.A., Swiner, D.J., Bell, K.R., Fedorchak, M.V., **Little, S.R.**, Meyer, T.Y. (2016) The Impact of Monomer Sequence and Stereochemistry on the Swelling and Erosion of Biodegradable Poly(Lactic-co-Glycolic) Acid Matrices. (*Biomaterials*, **117**: 66-76).
- 67) Bayer, E., Fedorchak, M.V., **Little, S.R.** (2016) The Influence of Platelet-Derived Growth Factor and Bone Morphogenetic Protein Presentation on Tubule Organization by Human Umbelical Vascular Endothelial Cells and human Mesenchymal Stem Cells in Co-Culture. (*Tissue Engineering Part A*, 2016, **22**(21 & 22): 1296-1304).
- *Featured on the Cover of the Journal*
- 66) Roy, A., Jhunjunwala, S., Bayer, E., Fedorchak, M.V., **Little, S.R.**, Kumt, P.N. (2016) Porous calcium phosphate-poly (lactic-co-glycolic) acid composite bone cement: A viable tunable drug delivery system. (*Materials Science and Engineering: C*, **59**: 92-101).
- 65) Francisconi, C.F., Vieira, A.E., Biguetti, C.C., Glowacki, A.J., Trombone, A.P.F., Letra, A., Silva, R.M., Sfeir, C.S., **Little, S.R.**, Garlet, G.P., (2016) Characterization of the Protective Role of Regulatory T Cells in Experimental Periapical Lesions Development and Its Chemoattraction Manipulation as a Therapeutic Tool. (*Endodontics*, **42**(1): 120-126).
- *Winner, Journal of Endodontics Award as selected by the Scientific Advisory Board*
- 64) Bayer, E., Fedorchak, M.V., Gottardi, R., **Little, S.R.** (2015) The Scope and Sequence of Growth Factor Delivery for Vascularized Bone Tissue Regeneration. (*Journal of Controlled Release*, 2015, **219**: 129-140).

- 63) Lash, M.H., Fedorchak, M.V., McCarthy, J.J., **Little, S.R.**, (2015) Scaling Up Self-Assembly: Bottom-Up Approaches to Macroscopic Particle Organization. (*Soft Matter*, **11**: 5597-5609).
- *Featured on the Front Cover of the Journal*
- 62) Acharya, A. P., **Little, S.R.** (2015) Stapled Endosome Disrupting Alginate Particles for Cytosolic Delivery of Cations. (*Journal of Drug Targeting*, invited manuscript for special edition, **23** (7/8): 690-697).
- 61) Fisher, J. D., Acharya, A.P., **Little, S.R.**, (2015) Micro and Nanoparticle Drug Delivery Systems for Preventing Allotransplant Rejections. (*Clinical Immunology*, **160**: 24-35).
- 60) Guaragno, M., Gottardi, R., Fedorchak, M.V., Roy, A., Kumta, P.N., **Little, S.R.** (2015) One-Step Synthesis of Fluorescently Labeled Single-Walled Carbon Nanotubes. (*Chemical Communications*, **51**: 17233-17236).
- 59) Lash, M.H., Blevins, L., Jordan, J., Fedorchak, M.V., **Little, S.R.**, McCarthy, J.J. (2015) Non-Brownian Particle-based Materials with Microscale and Nanoscale Hierarchy. (*Angewandte Chemie*, **54**(20): 5854-5858).
- *Featured on the Inside Cover of the Journal*
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- 9) **Little, S.R.**, Langer, R. (2005) Non-Viral Delivery of Cancer Genetic Vaccines. (*Advances in Biochemical Engineering/Biotechnology*, **99**: 93-118). PMID: 16568889
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- 3) **Little, S.R.**, Lynn, D.M., Puram, S.V., Langer, R. (2005) Formulation and Characterization of Poly(β -Amino Ester) Microparticles for Genetic Vaccine Delivery. (*Journal of Controlled Release*, **107**(3): 449-162).
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PEER-REVIEWED CONFERENCE PROCEEDINGS

- 1) Bodnar, C.A., Beckman, E., McCarthy, J.M., **Little, S.R.** (2014) Work in Progress: A Vision for the First “Product Innovation Sequence” for Chemical Engineers. ASEE 2014 Annual Conference and Exposition, June 15-18, 2014. Indianapolis, Indiana.

PEER-REVIEWED BOOK CHAPTERS

- 3) **Little, S.R.** Foreword to *Engineering Polymer Systems for Enhanced Drug Delivery*, Wiley, New Jersey, Expected Publication Date: January 2014.
- 2) Balmert, S. C., **Little, S.R.** “Biomimetic, Anisotropic Drug Delivery Systems.” in *Handbook of Biomimetics and Bioinspiration: Volume I*, World Scientific Publishing, Singapore, August 2013.
- 1) **Little, S.R.**, Anderson, D. G., Langer, R. “Non-Viral Genetic Vaccines for Cancer.” in *Gene Therapy for Cancer*, Humana Press, New Jersey, December 2006.

INVITED TALKS

- 83) **West Virginia University (Host: Srinivas Palanki)** Medicine that Imitates Life Through Biomimetic Drug Delivery. Morgantown, WV (*October 2022*).
- 82) **Materials Research Society Annual Meeting – (Host: Ritchie Chen)** Mimicking Tumors as a S.M.A.R.T.E.R. Way to Treat Transplant Rejection (*May 2022*).
- 81) **Science and Entrepreneurship Series from CRS Italia – (Host: Paulo Decuzzi)** Challenges in Translating a Complex Technology from a University Environment (*April 2022*).
- 80) **Regulatory T cell-Enriching Microparticles for Promoting Vascularized Composite Allotransplantation – (Host: Eddie Almeida)** US Department of Defense Congressionally Directed Medical Research Program Meeting (*March 2022*).
- 79). **Teraski Institute – (Host: Ali Khademhosseini)** Engineering Mimetic Solutions to Reestablish Immunological Homeostasis. Virtual Seminar (*May 2021*).
- 78) **AWARD TALK: Controlled Release Society International Annual Meeting – (Host: Conference Chairs, Mark Prausnitz and Bruno Sarmiento)** Mimicking Tumors as a S.M.A.R.T.E.R. Way to Treat Transplant Rejection. Virtual Annual Meeting (*July 25-29th, 2021*).
- 77) **KEYNOTE: Polymers for Advanced Technologies International Conference – (Host: Joseph Kost)** Medicine that Imitates Life Through Biomimetic Drug Delivery. Jerusalem, Israel, (*October 3-7, 2021*).
- 76) **Vanderbilt University (Host: David Pine)** (Department of Chemical and Biomolecular Engineering Seminar Series) – Medicine that Imitates Life Through Biomimetic Drug Delivery. Nashville, TN, (*Date TBD – Rescheduled due to COVID19*).

- 75) **PLENARY: SIPCD (Biannual) Symposium on Innovative Polymers for Controlled Delivery – (Host: Kinam Park)** Medicine that Imitates Life Through Biomimetic Drug Delivery. Suzhou, China. (Date TBD – Rescheduled due to COVID19).
- 74) **University of South Carolina (Host: Michael Gower)** (Department of Chemical Engineering Seminar Series) – Controlling “Controlled Release” to Make Medicine that Imitates Life. Columbia, SC, Fall Semester (*Virtual Seminar*), October 8, 2020.
- 73) **New York University (Host: David Pine)** (Department of Chemical and Biomolecular Engineering Seminar Series) – Controlling “Controlled Release” to Make Medicine that Imitates Life. New York, NY, March 6th, 2020.
- 72) **PLENARY: Annual Meeting of the Spanish/Portuguese Local Chapter of the Controlled Release Society – (Host: Maria José Alonso)** University of Santiago de Compostela. Controlling Controlled Release to Make Medicine that Imitates Life. Santiago de Compostela, Spain, January 24th, 2020.
- Covered by the by *La Voz de Galicia* in the article entitled: *Avanzamos en fármaco con menos efectos adversos y más personalizados (Advancement of drugs with fewer adverse effects in a more personalized way)*:
https://www.lavozdeg Galicia.es/noticia/santiago/2020/01/25/especialista-universidad-pittsburghavanzamos-farmacos-efectos-adversos-personalizados/0003_202001S25C2992.htm
- 71) **University of Porto (Host: Bruno Sarmento)** (Instituto Universitário de Ciências da Saúde) – Immunoengineering the Local Immunological Microenvironment for Recruitment and Differentiation of Endogenous Regulatory T Cells. Porto, Portugal, January 21st, 2020.
- 70) **Ohio State University Department of Chemical and Biomolecular Engineering (Host: Katelyn Reilly)** - Controlling Controlled Release to Make Medicine that Imitates Life. September 26th, 2019. Columbus, OH.
- 69) **University of Florida Department of Chemical Engineering (Host: Carlos Rinaldi)** - Controlling Controlled Release to Make Medicine that Imitates Life. October 7th, 2019. Gainesville, FL.
- 68) **KEYNOTE: Chinese Biomaterials Congress (Host: Art Coury)** - Controlling Controlled Release to Make Medicine that Imitates Life. August 22-25, 2019. Dalian, China.
- 67) **Technion – Israel Institute of Technology, Department of Chemical Engineering (Host: Avi Schroeder)** - Controlling Controlled Release to Make Medicine that Imitates Life. Scheduled for May 2019. Haifa, Israel.
- 66) **Tel Aviv University, Center for Nanoscience and Technology (Host: Dan Peer)** - Controlling Controlled Release to Make Medicine that Imitates Life. Scheduled for May 2019. Tel Aviv, Israel.
- 65) **Johns Hopkins University, Wilmer Eye Institute and Center for Nanomedicine (Hosts: Ian Pitha and Justin Hanes)** – Next Generation Delivery Systems for Treatment of Ocular Diseases. May 2019. Baltimore, MD.
- 64) **Colorado School of Mines, Department of Chemical and Biological Engineering (Host: Kevin Cash)** - Controlling Controlled Release to Make Medicine that Imitates Life. April 19, 2019. Golden, CO.

- 63) **ANNUAL ENGINEERING WEEK SPEAKER: Northeastern University, Department of Chemical Engineering (Hosts: Hicham Fenniri and Tom Webster)** – Controlling Controlled Release to Make Medicine that Imitates Life. February 22nd, 2019. Boston, MA.
- 62) **AIChE Annual Meeting: Young Faculty Forum (Host: Anju Gupta)** – The Most Important Things to the Success of Junior Faculty. October 31st, 2018. Pittsburgh, PA.
- 61) **Materials Science and Technology 2018 Annual Meeting (Host: Roger Narayan)** - Controlling Controlled Release to Make Medicine that Imitates Life. Scheduled for October 14th -18th, 2018. Columbus, OH.
- 60) **KEYNOTE: Texas Regional Biomaterials Conference (Host: Society for Biomaterials Student Chapter Organizing Committee)** - Controlling Controlled Release to Make Medicine that Imitates Life. June 1st, 2018. College Station, TX.
- 59) **AIChE Annual Meeting, Materials Engineering and Science Division (MESD) Division 8 Plenary Session (Host: John Ekerdt (UT Austin) and Michael Kilby (U Tennessee))** – Controlled Release Systems for Recruitment and Differentiation of Endogenous Regulatory T Cells. 2018 Annual Meeting.
- 58) **Materials Research Society (MRS) Annual Meeting, Session: Immune Modulatory Materials – From Design to Translational Applications (Host: Evan Scott, (Northwestern University))** – Immunoengineering Biomaterials for Recruitment and Differentiation of Endogenous Regulatory T Cells. April 2nd – 6th, 2018. Phoenix, AZ.
- 57) **University of Washington, Department of Chemical Engineering (Host: Francois Baneyx)** – Controlling Controlled Release to Make Medicine that Imitates Life. November 6th, 2017. Seattle, WA.
- 56) **DISTINGUISHED LECTURE: Youngstown State University, the J. Douglas Faires Distinguished Lecture (Host: Angela Spalsbury)** - Controlling Controlled Release to Make Medicine that Imitates Life. September 20th, 2017. Youngstown, OH.
- 55) **Northwestern University, Department of Chemical and Biological Engineering (Host: Joshua Leonard)** – Controlling Controlled Release to Make Medicine that Imitates Life. May 18th, 2017. Evanston, IL.
- 54) **Northwestern University, Department of Chemical and Biological Engineering (Host: William Miller)** – Controlling Controlled Release. May 17th, 2017. Evanston, IL.
- 53) **Johnson and Johnson, Consumer and Personal Products Division (Host: Sherket Peterson)** – Controlled Release for Delivery of Agents to Control Bacterial Biofilms. April 6th, 2017. Skillman, NJ.
- 52) **GRADUATE STUDENT CHOICE SEMINAR: University of Maryland, Fischell Department of Bioengineering (Host: Silvina Matysiak)** – Controlling Controlled Release to Make Medicine that Imitates Life. February 3rd, 2017. College Park, MD.
- 51) **KEYNOTE: University of Florida / Society for Biomaterials Annual Biomaterials Day (Host: Alex Collins, President of UF Chapter of the Society for Biomaterials)** - Medicine That Imitates Life Through Biomimetic Controlled Release. March 11th, 2016. Gainesville, FL.
- 50) **University of Kentucky, Department of Chemical and Materials Engineering (Host: Douglas Kalika)** – Controlling Controlled Release to Make Medicine that Imitates Life. March 2nd, 2016.

Lexington, KY.

- 49) **PANELIST: Chemical Heritage Foundation (Host: Director, Jody Roberts)** - Medicine That Imitates Life Through Biomimetic Controlled Release. October 6th, 2015. Philadelphia, PA.
- 48) **PLENARY: Arnold and Mabel Beckman Foundation Young Investigator Award Symposium (Host: Executive Director Jacqueline Dorrance)** - Medicine That Imitates Life Through Biomimetic Controlled Release. August 8th, 2015. National Academies, Irvine, CA.
- 47) **KEYNOTE: Department of Pharmaceutical Sciences Annual Retreat (Host: Barry Gold)** - Medicine That Imitates Life Through Biomimetic Controlled Release. June 1st, 2015. Ogelbay Resort, Wheeling, WV.
- 46) **Council for Chemical Research Annual Meeting (Host: Mario Eden and Mark McCready)** - Invited Panelist for: "Methods for Incentivizing Faculty In Today's Chemical Engineering Department". May 4th, 2015. Alexandria, VA.
- 45) **Penn Periodontal Conference (Host: Diana Graves)** - Recruitment of Regulatory Lymphocytes for Periodontitis. University of Pennsylvania, Philadelphia, PA, July 1, 2015.
- 44) **NIH K12 Panel (Host: Wishwa Kappoor)** - Advice from Successful Past K-Award Winners. Pittsburgh, PA, February 25, 2015.
- 43) **7th Ocular Diseases Drug Discovery Conference (Host: Stephanie Chow)** - Advanced Controlled Release Systems for Next Generation Ophthalmic Drug Delivery. San Diego, CA, March 19-20, 2014.
- 43) **University of Pittsburgh Department of Pharmacology (Host: Bruce Freeman)** - Controlling Controlled Release to Make Medicine That Imitates Life. Pittsburgh, PA, March 17, 2015.
- 42) **Merck Pharmaceuticals (Host: Michael Kress)** - Controlling Controlled Release. West Point, PA, November 3, 2014.
- 41) **Materials, Science, & Technology Annual Meeting (Host: Roger Narayan)** - Biomaterials for Recruitment and Differentiation of Endogenous Cells. In "Next Generation Biomaterials". Pittsburgh, PA, October 13, 2014.
- 40) **University of Oklahoma - Department of Chemical, Biological & Materials Engineering (Host: Friederike Jentoft)** - Controlling Controlled Release to Make Medicine That Imitates Life. Norman, OK, October 2, 2014.
- 39) **GRADUATE STUDENT CHOICE SEMINAR: University of California, San Diego - Center for Excellence in Nanomedicine and Engineering (Host: Adah Almutairi)** - Controlling Controlled Release to Make Medicine That Imitates Life. San Diego, CA, May 28, 2014.
- 38) **PPG Innovations in Materials Chemistry Symposium (Host: Nat Rosi)** - Controlling Controlled Release from Biodegradable Systems. Pittsburgh, PA, May 2, 2014.
- 37) **SESSION KEYNOTE: American Institute of Chemical Engineering Annual Meeting (Host: Christopher Jewell)** - Next Generation Controlled Release Systems for Immunoregulation. Biomaterials for Immunological Applications. San Francisco, CA, November 3 - 8, 2013.
- 36) **University of Buffalo (Host: Stelios Andreadis)** (Department of Chemical and Biological Engineering) - Medicine that Imitates Life Through Biomimetic Controlled Release. Buffalo, NY, October 23, 2013.

- 35) **Syracuse University and SUNY (Hosts: Chris Nomura and Rebecca Bader)** (Departments of Chemistry and Biomedical and Chemical Engineering Seminar Series) – Medicine that Imitates Life Through Biomimetic Drug Delivery. Syracuse, NY, March 2012.
- 34) **PLENARY: University of Minnesota, iPRIME (Industrial Partners for Research in Interfacial and Materials Engineering) (Host: Ron Siegel)** – Controlling Controlled Release from Biodegradable Systems. Minneapolis, MN, January 15, 2013.
- 33) **PLENARY: American Society for Reconstructive Transplantation Annual Meeting (Host: Gerald Brandacher)** – Nanomedical Approaches to Drug Delivery. In Reconstructive Transplantation: What's on the Horizon? Chicago, IL, November 17, 2012.
- 32) **Vanderbilt University (Host: Paul Laibinis)** (Department of Chemical and Biomolecular Engineering Seminar Series) – Medicine that Imitates Life Through Biomimetic Drug Delivery. Nashville, TN, November 12, 2012.
- 31) **University of Texas, Austin (Host: Nicholas Peppas)** (Department of Bioengineering Seminar Series) – Medicine that Imitates Life Through Biomimetic Drug Delivery. Austin, TX, September 6, 2012.
- 30) **Materials, Science, & Technology Annual Meeting (Host: Roger Narayan)** – Can Restoring Immunological Homeostasis in the Periodontium Lead to Regeneration? Pittsburgh, PA, October 26, 2012.
- 29) **KEYNOTE: Society of Analytical Chemists of Pittsburgh Regional Meeting (Host: Geoffrey White)** – Medicine that Imitates Life Through Biomimetic Drug Delivery. Duquesne University, Pittsburgh, PA, October 1, 2012.
- 28) **American Chemical Society Fall Meeting (Host: Klok Harm-anton)** – Rationally Designed Controlled Release Systems for Periodontal Disease that Promote Immunological Homeostasis. Symposium on Polymers at the Interface of Biology, Philadelphia, PA, August 19, 2012.
 ☐ *Selected for an ACS Press Release and press interview in Philadelphia*
 ☐ *Disseminated to thousands of print and online press outlets around the globe*
- 27) **PLENARY: Induction Conference for 2012 Beckman Young Investigators (Host: Jacqueline Dorrance)** – Medicine that Imitates Life Through Biomimetic Drug Delivery. Center for the National Academy of Science and Engineering. Irvine, CA, August 3 – 5, 2012.
- 26) **Fox Center Conference on Vision Restoration: Regenerative Medicine in Ophthalmology (Host: Joel Schuman)** – Advanced Controlled Release Systems for Next Generation Ophthalmic Therapy. Pittsburgh, PA, May 11, 2012.
- 25) **Gordon Research Conference on Biology and Pathobiology of the Cornea (Host: Suzanne Fleiszig)** – Advanced Controlled Release Systems for Next Generation Ophthalmic Therapy. Ventura, CA, March 29, 2012.
- 24) **Senior Vice-Chancellor's Distinguished Lecture (Host: Arthur Levine)** – Medicine that Imitates Life Through Biomimetic Drug Delivery. Pittsburgh, PA, March 2, 2012.
- 23) **18th Annual Hilton Head Workshop (Short Course on Controlled Release Strategies for Regeneration and Immune Modulation) (Host: Julia Babensee)** – Can Restoring Immunological Homeostasis in the Periodontium Lead to Regeneration? Hilton Head, SC, March 14, 2012.
- 22) **International Association of Dental Research Annual Meeting and Exhibition (Host: Elia**

- Beniash**) – Treatments for Periodontal Disease that Recruit Regulatory T-cells. Tampa, FL, March 21 – 24, 2012.
- 21) **Materials Research Society Fall Meeting (Host: Darrell Irvine)** (Micro- and Nanoscale Processing of Biomedical Materials Symposium) – Anisotropic, Patchy Microspheres with Soft Protein Islets. Boston, MA, November 2011.
 - 20) **University of Florida (Host: Benjamin Keselowsky)** (Department of Biomedical Engineering Seminar Series) – Medicine that Imitates Life Through Biomimetic Drug Delivery. Gainesville, FL, October 2011.
 - 19) **KEYNOTE: Youngstown State University QUEST Regional Symposium (Host: Jeff Coldren)** – Engineering the Next Generation of Cell Interactive Medicine. Youngstown, OH, April 5, 2011.
 - 18) **Materials Research Society Spring Meeting (Host: Samir Mitragotri and Joerg Lahann)** (Symposium on Biomimetic Engineering of Particles) – Anisotropic, Patchy Microspheres with Soft Protein Islets. San Francisco, CA, April 2011.
 - 17) **Case Western University (Host: Erin Lavik)** (Department of Bioengineering) – Medicine that Imitates Life Through Biomimetic Drug Delivery. Cleveland, OH, March 31, 2011.
 - 16) **McGowan Institute for Regenerative Medicine (Host: Alan Russell)** (Annual Retreat) – Biomimetic Controlled Release Formulations that Prolong Survival of Whole Limb Transplants. Farmington, PA, March 6 – 9, 2011.
 - 15) **Carnegie Mellon University (Host: Chris Bettinger)** (Department of Chemical Engineering and Bioengineering Seminar Series) – Medicine that Imitates Life Through Biomimetic Drug Delivery. Pittsburgh, PA, January 24, 2011.
 - 14) **American Chemical Society National Meeting (Host: Darrell Irvine)** – Rationally Designed Biomimetic Delivery System for Immunosuppression. Boston, MA, August 23, 2010.
 - 13) **Particles 2010 (Host: Roger Narayan)** (Medical/Biochemical Diagnostic, Pharmaceutical, and Drug Delivery Applications of Particle Technology) – Polymeric Particles as a Platform for Biomimetic Drug Delivery. Lake Buena Vista, FL, May 23 – 25, 2010.
 - 12) **Duquesne University (Host: Wilson Meng)** (School of Pharmacy) – Polymeric Microcapsulates as a Platform Technology for Biomimetic Drug Delivery. Pittsburgh, PA, May 19, 2010.
 - 11) **University of Pittsburgh (Host: Harvey Borovetz)** (Department of Bioengineering) – Controlling Controlled Release from Biodegradable Systems. Pittsburgh, PA, December 3, 2009.
 - 10) **Materials, Science, & Technology Annual Meeting 2009 (Host: Roger Narayan)** – Polymeric Microcapsulates as a Platform Technology for Biomimetic Drug Delivery. Pittsburgh, PA, October 26, 2009.
 - 9) **Auburn University (Host: Mark Byrne)** (Department of Chemical Engineering) – Polymeric Microcapsulates as a Platform Technology for Biomimetic Drug Delivery. Auburn, AL, October 21, 2009.
 - 8) **American Chemical Society National Symposium (Host: Anna Balazs)** – Polymeric Microcapsules: Theory, Experiment and Applications. Philadelphia, PA, March 22 – 26, 2009.
 - 7) **Youngstown State University (Host: Douglas Price)** (Cross-listed in Departments of Chemistry and Chemical Engineering) – Overcoming Challenges in the Non-Viral Delivery of Genetic

Vaccines. Youngstown, OH, November 2006.

- 6) **Thomas E. Starzl Transplantation Institute (Host: Fadi Lakkis)** (Cross-listed with the Department of Immunology) – Functional, Non-Viral Genetic Vaccine Vectors. Pittsburgh, PA, June 2006.
- 5) **Society for Biomaterials National Meeting (Host: Joel Collier)** – Overcoming Challenges in the Non-Viral Delivery of Genetic Vaccines. Pittsburgh, PA, April 2006.
- 4) **Biomaterials Group, University of Pittsburgh (Host: Kacey Marra)** – Functional, Non-Viral Genetic Vaccine Vectors. Pittsburgh, PA, April 2006.
- 3) **US-Japan Symposium on Drug Delivery Systems (Selected for invited talk after being awarded “best poster”)** – High Throughput Fabrication of Polymeric Microparticles. Maui, HI, December 2005.
- 2) **Zycos (MGI Pharmaceuticals) (Host: Mary Lynne Hedley)** – Enhancing Microparticulate Genetic Vaccine Delivery using Poly-Beta Amino Esters. Lexington, MA, October 2004.
- 1) **MIT Cancer Research Center (Host: Douglas Lauffenberger)** – Functional, Non-Viral Genetic Vaccine Vectors. Boston, MA, September 2003.

INTELLECTUAL PROPERTY

- 20) “pH Triggerable Polymeric Microparticles” (US7943179B2) - **Inventors: Little, S.R.,** Lynn, D.M., Anderson, D.G., Langer, S.R.
 - *Licensed by Zycos Inc. (prior to being acquired by MGI Pharma)*
- 19) “pH Triggerable Polymeric Particles or Films Containing a Poly (Beta-Amino Ester)” (WO2005055979A2) - **Inventors: Little, S.R.,** Lynn, D.M., Anderson, D.G., Langer, S.R.
 - *Licensed by Zycos Inc. (prior to being acquired by MGI Pharma)*
- 18) “High-Throughput Fabrication of Microparticles” (WO2007078765A3) - **Inventors: Little, S.R.,** Lynn, D.M., Anderson, D.G., Langer, S.R.
- 17) “Hierarchically Self-Assembling Linear-Dendritic Hybrid Polymers for Delivery of Biologically Active Agents” (WO2007002663A2) - **Inventors: Hammond, P.,** Cunningham, K.G., Langer, R., Little, S.R.
- 16) “Artificial Cell Constructs for Cellular Manipulation” (US8846098B2 and US10449151B2) - **Inventor: Little, S.R.**
- 15) “Vasoactive Intestinal Peptide Release from Microparticles” pending (US20140142039A1) - **Inventors: Little, S.R.,** Glowacki, A.J.
- 14) “Engineered Microparticles for Macromolecule Delivery” pending (US20170290917A1) - **Inventors: Little, S.R.,** Rothstein, S.N.

- *Licensed by Qrono Inc.*

- 13) "Methods to Prepare Patchy Particles" (US9211519B2) - **Inventors: Little, S.R.**, Kamalasanan, K.
- 12) "Controlled Release Formulations for the Induction and Proliferation of Blood Cells" - (US10765634B2). **Inventors: Little, S.R.**, Raimondi, G., Thomson, A.W., Jhunjhunwala, S.
- 11) "Recruitment of Mesenchymal Stem Cells Using Controlled Release Systems" (US10195252B2). **Inventors: Little, S.R.**, Gottardi, R., Hwang, M.P., DeSantis, D.
- 10) "Osteoarthritis Treatment with Chemokine-Loaded Alginate Microparticles" pending (US20190209651A1). **Inventors: Little, S.R.**, Gottardi, R., Hwang, M.P., DeSantis, D.
- 9) "Thermoresponsive Hydrogel Containing Polymer Microparticles for Noninvasive Ocular Delivery" pending (US20150374633A1). **Inventors: Fedorchak, M.V., Little, S.R.**, Schuman, J.S.

- *Optioned by the Cystinosis Foundation*

- 8) "Treating Soft Tissue via Controlled Drug Release" (US10179111B2) - **Inventors: Little, S.R.**, Gottardi, R., Hwang, M.P., DeSantis, D.
- 7) "Assay for Detection of Bladder or Prostate Cancer" pending (US20190120843A1) - **Inventors: Acharya, A., Little, S.R.**, Tarin, T.V.
- 6) "Biomimetic Drug Delivery of an Immunomodulatory Agent for the Treatment of Ocular Conditions" pending (US20170367981A1) - **Inventors: Little, S.R.**, Guaragno, M.L., Glowacki, A.G., Fedorchak, M.V., Balmert, S.C.
- 5) "Thermoresponsive Hydrogel Containing Polymer Microparticles for Controlled Drug Delivery to the Ear" (WO2019118330A1) - **Inventors: Little, S.R.**, Fedorchak, M.V., Schuman, J.S.

- *OTERO Inc. intends to license this technology from the University of Pittsburgh*

- 4) "Artificial Cells and Delivery Devices for Use in Tissue Engineering and Related Methods" (US20190336444A1) - **Inventors: Fedorchak, M.V., Krawiec, J., Little, S.R.**, Lorentz, K., Vorp, D.A., Weinbaum, J.
- 3) "Treatment of Ocular Conditions Utilizing a Histone/Protein Deacetylase Inhibitor" (US20200261366A1) - **Inventors: Little, S.R.**, Ratay, M.L.
- 2) "Compositions and Methods for Administering a YAP1/WWRT1 Inhibiting Composition and a GLS1 Inhibiting Composition" - **Inventors: Acharya, A.P., Chan, S.Y., Little, S.R.**

- *This IP is the basis for founding of a new spin-off company from the University of Pittsburgh called Numo, Inc.*

- 1) “Probiotics and Probiotic Compositions for Regulating Body Weight” (WO2019168990A1) – **Inventors: Acharya, A.P, Little, S.R.**

ENTREPRENEURSHIP

- 1) Founded **Qrono Inc.**, the first custom-design controlled release service company in 2011 in Pittsburgh, PA., with Co-Founder, CEO and former graduate student: Sam Rothstein, PhD.

- **Raised \$3.8M over the course of positioning for IND enabling studies**

Awards for Qrono Inc.

- 2017 – Pittsburgh Business Times Innovation Award Winner (Inaugural Winner)
 - 2017 – NIH Commercial Accelerator Program Award
 - 2015 – US Department of Defense Phase I STTR Award
 - 2014 – National Institutes of Health Phase I STTR Award (NCI)
 - 2014 – US Department of Defense Phase II STTR (September 2014 – August 2016)
 - 2013 – Pittsburgh Technology Council Tech 50 Award Winner in the category of “Innovator of the Year”
 - 2013 – US Department of Defense Phase I STTR Award
 - 2012 – CNBC’s “15 Promising New Startups”
 - 2012 – National Institutes of Health Phase I STTR Award (NIGMS)
 - 2011 – One of the Kauffman Foundation’s “Most Promising Ventures from Around the World”
 - 2010 – 1st Place, University of Pittsburgh’s “Big Idea” Competition for New Product Ideas
- 2) Founded **OTERO Therapeutics Inc.** to develop the first semi-permanent eye drop for treatment of glaucoma in 2018 with Co-Founder and former post doc, Morgan Fedorchak, PhD and with Co-Founder and collaborator, Joel Schuman, MD.
 - **Technology licensed by the Cystinosis Foundation**
 - 3) Founded **Oraxsys Therapeutics Inc.** to develop the first formulations that are designed to recruit the body’s own cells to treat diseases of dysregulated immune function.
 - 4) Currently founding a startup (currently proposed name: **Numo Inc.**) to translate patented technology for treatment of pulmonary hypertension with Co-Founder and collaborator, Stephen Chan, MD.

FUNDING (COMPETITIVE, PEER-REVIEWED EXTERNALLY)

- 37) NIH NHLBI (1 R01 HL157017-01A1) - Preclinical Assessment of a Compliance Matched Biopolymer Vascular Graft. \$3,468,332.00. September 2021 – August 2026.
Role: Co-PI

The aim of this work is to engineer a pre- and post-implantation compliance controlled fully biodegradable tissue engineered vascular graft.

- 36) NSF ECO-CBET (2133423) – Sustainability from the Bottom Up: A Wholistic Solution to Balancing the N-Cycle. \$1,699,999. September 2021 – August 2025.
Role: Co-Investigator
The aim of this work is to engineer nitrogen delivery systems for efficient nutrient delivery for agricultural products.
- 35) United States Department of Defense (#RT200049) – Sustained-release, Microparticle-based, Anti-Rejection through Enhancement of Regulatory T-cells (S.M.A.R.T.E.R) Platform for VCA Immunomodulation. \$1,200,000. October 1, 2021 –September 30, 2024.
Role: PI
The aim of this work is to test engineered systems designed to orchestrate a patient’s own regulatory T cells in a non-human primate model of VCA graft survival.
- 34) United States Department of Defense (#RT200012P2) – Reparative Treg and Microparticle Therapy for the Prevention of VCA Acute and Chronic Rejection. \$1,200,000. October 1, 2021 – September 30, 2024.
Role: Co-PI
The aim of this work is to explore enrichment of a patient’s own reparative regulatory T cells through microparticle (MP)-based systems that are engineered to release key cytokines, immunosuppressive agents, and chemokines to promote long-term VCA graft survival.
- 33) NIH NIDCR R01 Research Project Grant (1R01DE029034-01) – Treatment of Periodontitis by Homing M2 Macrophages. \$1,886,728. July 2020 – June 2025.
Role: Co-PI
The goals of this proposed project are to test mimetic controlled release systems that cause the homing of endogenous M2 macrophages to regulate local inflammation of the periodontium.
- 32) DARPA, The Regents of the University of California - Berkeley – Next-Generation CRISPR and anti-CRISPR Tools and Delivery Systems for Safely Engineering the Genome and Epigenome. \$183,339. May 1, 2019 – October 30, 2021.
Role: Co-Investigator
This work aims to facilitate the development of methods to induce immune tolerance to Cas9 protein. Specifically, Micro- and Nano-Particles and MicroNeedle Arrays production, quality control testing and strategy development for maximum efficacy delivery system.
- 31) NIH, NIDCR Michigan-Pitt-Weiss Resource Center - Controlled Release System for Immunoregulation and Treatment of Periodontal Disease. \$100,000. March 2019 – February 2021.
Role: PI
The goal of the proposal is to take the next steps in developing non-antibiotic, controlled release system that mimics the body’s natural immune regulation mechanisms and harnesses natural, endogenous cells as agents of periodontal disease treatment.
- 30) DoE, GAANN – An Integrated Education in the Engineering of Functional Materials. \$597,000. Sept 2019 – August 2022.
Role: Co-Investigator

The aim of this grant is to fund graduate students in national areas of need in the area of functional materials.

- 29) NIH, NIAMS R01 – Engineering the Skin Microenvironment to Produce Allergen Tolerance. (1R01 AR074285-01). \$2,300,000. August 2018 – June 2023.
Role: PI
The aim of this project is to develop an antigen specific strategy to prevent and treat contact dermatitis through local control over presentation of regulatory cell inducing factors in the skin microenvironment.
- 28) NIH, NIDCR Michigan-Pitt-Weiss Resource Center - Controlled Release System for Immunoregulation and Treatment of Periodontal Disease. (C1-0616). \$146,202. March 2018 – February 2019.
Role: PI
The goal of the proposal is to develop non-antibiotic, controlled release system that mimics the body's natural immune regulation mechanisms and harnesses natural, endogenous cells as agents of periodontal disease treatment.
- 27) NIH, NIDCR Michigan-Pitt-Weiss Resource Center. September 2017 – August 2022.
Role: Member of Technical Readiness Assessment Team (5% Effort Annually, \$9,600)
The aim of this consortium is to support research projects of interest to the NIDCR that are translational in nature as movement toward first in human studies. The goal of the Technical Readiness Assessment Team is to evaluate the technical readiness for Interdisciplinary Technology Projects (ITP) and provide guidance related to the scientific, engineering (including in vitro/in vivo components) and manufacturability of dental, oral and craniofacial technologies.
- 26) NIH NIAID R01 – Parameters that Underlie Treg Insufficiency in Autoimmune Diabetes (2R01DK089125-05A1). \$200,155. September 2016 – August 2021.
Role: Co-Investigator
The aim of this project is to develop drug delivery systems for maintenance of Treg in models of autoimmune diabetes.
- 25) NIH NIDCR R21 - Treatment of Periodontitis by Homing of M2 Macrophages (1R21DE025735-01A1). \$37,010. September 2016 – August 2018.
Role: Co-Investigator
The aim of this project is to develop sustained release systems for M2 macrophage chemokines for treatment of periodontal disease.
- 24) NIH NHLBI R01 – Artificial Stem Cells for Vascular Tissue Engineering. \$1,925,000. July 1, 2016 – June 30, 2021.
Role: Co-Investigator
The goal of the proposed work is to explore cell-sized degradable microspheres that release secreted factors from mesenchymal stem cells in order to provide a cell-free vascular tissue engineering solution.
- 23) Johnson and Johnson – Controlled Release Carriers that Target Oral Biofilms. \$211,118. October 1, 2016 – September 30, 2018.
Role: PI

The aim of this project is to develop controlled release systems for proprietary molecules used by Johnson and Johnson to eliminate bacterial plaques.

- 22) US Food and Drug Administration – A Biorelevant Dissolution Method for Particulate Dosage Forms in the Periodontal Pocket. \$30,000. September 1, 2015 – August 31, 2017.
Role: Co-PI
The aim of this project is to create a new dissolution method for pharmaceutical formulations designed for administration to the periodontal pocket.
- 21) Wallace H. Coulter Foundation – SoliDrop – Long-term, Noninvasive Glaucoma Drug Delivery System. \$100,000. September 1, 2015 – August 31, 2016.
Role: Co-Investigator
The goal of this project is to explore the safety and translatability of thermo-gelling eye drop formulations for sustained treatment of glaucoma.
- 20) United States Department of Defense (#MR141093) – Regulatory T-Cell Enriching Microparticles for Promoting Vascularized Composite Allotransplant Survival. \$1,133,302. September 15, 2015 – September 14, 2021.
Role: PI
The aim of this work for the DoD is to test the hypothesis that both expansion and recruitment of suppressive lymphocytes called regulatory T cells (Tregs) using biomimetic microparticle (MP)-based systems that release key cytokines, immunosuppressive agents, and chemokines can be orchestrated to promote long-term graft survival in preclinical rat and swine composite tissue allotransplantation (CTA) models.
- 19) NSF – I-Corps Sites: University of Pittsburgh - Advancing Innovation, Entrepreneurship and Opportunity Commercialization. \$300,000. March 15, 2015 – February 28, 2015.
Role: PI
The goal of the NSF I-Corps Site is to prepare our engineers to extend their focus beyond the University laboratory and accelerate the economic and societal benefits of NSF-funded, basic-research projects that are ready to move toward commercialization.
- 18) NIH NEI R01 Research Project Grant (1R01EY024039 – 01A1) – Combined Hydrogel/Microparticle Eye Drops for Sustained Delivery of Glaucoma Medication. \$1,562,397. December 1, 2014 – November 30, 2020.
Role: PI
The goals of this NIH Research Project Grant is to develop a new, easy-to-administer, and noninvasive treatment capable of long-term release of glaucoma medication to the surface of the eye.
- 17) Phase II Wallace H. Coulter Foundation Translational Research Award – Treatment of Periodontitis via Recruitment of Regulatory Lymphocytes. \$410,000. September 2014 – August 2016.
Role: PI
The aim of this work is to develop first-of-their kind treatments for periodontal disease that recruit a patient’s own regulatory cells to resolve inflammation.
- 16) Research to Prevent Blindness (RPB) Innovation in Ophthalmic Research Award. \$100,000.

January 2014 – December 2016.

Role: PI

The aim of this work is to develop the first, long-acting eye drop formulation for treatment of glaucoma.

- 15) NIH Small Business Technology Transfer Grant (STTR) Phase I (1R41GM106342-01A1) - A New *In Silico* Design Platform for Building Custom Controlled Release Systems. \$139,207. September 2012 – December 2014.
Role: PI
The goals of the proposed research are to rapidly build and validate three, very different controlled release formulations using a model-aided design process that precisely meets a set of representative “needs” in the field.
- 14) Camille Dreyfus Teacher-Scholar Award – Mimicking Biological Structure and Behavior Using Polymeric Release Systems and Carbon Nanotubes. \$75,000. September 2013 – August 2017.
Role: PI
This award has no project goals and is given to the awardee based on merit with no restrictions.
- 13) Wallace H. Coulter Foundation Translational Research Partnership (TPII) Award - Treatments for Periodontitis that Restore Immunological Homeostasis. \$100,000. September 2013 – August 2016.
Role: PI
The goal of this work is to move toward a successful FDA IND application for Treg-recruiting formulations as a treatment for human periodontitis.
- 12) NRRC/NIH Equipment Grant (S10 RR026349) - Request for whole animal fluorescence tomographic imaging device, VisEn FMT2500 (Perkin Elmer). April 2011 – March 2012.
Role: Co-PI
The goal of this proposal was to obtain the resources necessary to purchase and maintain a high resolution, live animal imaging device at the University of Pittsburgh Cancer Research Center.
- 11) NIH NIDCR R01 Research Project Grant (1R01DE021058-01 A1) – Treatment of Periodontitis via Recruitment of Regulatory Lymphocytes. \$1,780,000. September 2011 – August 2015.
Role: PI
The goals of this proposed project are to design mimetic controlled release systems to explore a new treatment for periodontitis – one that employs the body’s own sophisticated methods for regulation of inflammation.
- 10) NIH NIDCR High Priority, Short Term Award (1R56DE021058 – 01; Tied to R01 Above) – Treatment of Periodontitis via Recruitment of Regulatory Lymphocytes. September 2010 – September 2011.
Role: PI
The goals of this proposed project are to precisely design mimetic, controlled release systems and apply them as a new type of treatment in a mouse model of periodontitis.
- 9) Phase I Wallace H. Coulter Foundation Translational Research Award – Treatments for Periodontitis that Restore Immunological Homeostasis. \$180,000. September 2011 – August 2013.
Role: PI
Our goals are to obtain preclinical data (in a canine model) supporting new therapies that restore immunological homeostasis in the periodontium (as opposed to current therapies that only aim to temporarily remove recurring pathogens).

- 8) Department of Defense Advance Regenerative Medicine Grant (ARMIV) – Rational Synthesis of Triggerably-Dissolvable Materials for Minimally Invasive Removal of WoundCAP Delivery Devices. \$151,200. July 2010 – June 2012.
Role: Co-PI
PI: William Wagner
The major goal of this program is to develop a robust, hollow fiber-based system (WoundCAP) to deliver regenerative growth factors to a wound site while including the means for minimally invasive removal/dissolution of the delivery system.
- 7) NSF Cyber-Enabled Discovery and Innovation (CDI) Type I (#0941260) - Computational Models to Enable the Experimental Self-Assembly of Modified Carbon Nanotubes into Biomimetic Synthetic Cellular Vesicles \$850,000. Sept 2009 – August 2012.
Role: PI
Our goal is to develop and experimentally verify computational models for the self-assembly and function of biomimetic, cylindrical channel-like building blocks to create a synthetic cellular membrane. By integrating computational and experimental efforts, we aim to achieve control over architecture, rate of transport, onset of secretion, and even selectivity of transport.
- 6) Department of Defense Advanced Regenerative Medicine Grant (ARMIII) - Temporal Delivery of Angiogenic Factors \$91,000. February 2009 - June 2010.
Role: PI
The major goals of this project are to utilize externally regulated delivery systems in order to explore the effects of changing the sequences of angiogenic growth factor delivery.
- 5) Beckman Foundation Young Investigator Award - Synthetic Dendritic Cells \$300,000. September 2008 - August 2011.
Role: PI
The major goals of this project are to explore modifications of surface presentation in order to improve the ability of synthetic dendritic cells to better mimic their biological counterpart.
- 4) United States Army Institute for Regenerative Medicine (AFIRM) Multicenter Grant - Synthetic Bone \$80,000,000. April 2008 - March 2011.
Role: Co-PI
The aims of this multicenter, collaborative project are to mimic the physiologic milieu of bone by providing temporal and special delivery of bone growth factors in tandem with natural materials including calcium phosphate ceramics.
- 3) NIH NIAID R01 Research Project Grant (AI076060) - Immunization Strategies for Autologous HIV I Immunotherapy \$1,250,000. April 2008 - March 2013.
Role: Co-Investigator
PI: Lou Falo
The aims of this grant as it pertains to my role involve utilizing new biomaterials to deliver genetic vaccines for HIV immunotherapy to dendritic cells.
- 2) NIH K-Award, K12 - Grant # 5KL2 RR024154 02 - Synthetic, Biomimetic Delivery Constructs for Immunosuppression, \$637,827. September 2007 - August 2011.
Role: PI
The major goals of this project are to develop the PI into an independent investigator that works between the fields of engineering and transplant immunology.

- 1) American Heart Association (National), Artificial Antigen Presenting Cells for *In Vivo* Manipulation of Regularity T Cells, \$65,000. January 2007 – December 2008.
Role: PI
The goals of this proposal were to explore synthetic, cell-sized particles as a means to mimic tolerogenic dendritic cells and their therapeutic effects in a model of heterotopic heart transplantation.

FUNDING (COMPETITIVE, REVIEWED INTERNALLY)

- 20) Commonwealth of Pennsylvania Manufacturing Innovation Program – Scalable Manufacturing of Monodisperse Biodegradable Microspheres Using Microfluidics. \$68,242. September 2021 – August 2022.
Role: PI
The goal of this work is to explore microfluidic technologies for production of formulations with monodisperse particle sizes.
- 19) Commonwealth of Pennsylvania Research Development – Therapies for COVID-related Disease and Technology Development. \$126,000. September 2021 – August 2023.
Role: Co-PI
The goal of this project is to explore novel formulations for treatment of COVID-related disease.
- 18) Central Research Development Program, University of Pittsburgh - A conforming thermogel retained in the sinuses for long-acting treatment of chronic rhinosinusitis. \$17,000. July 2019 – June 2021.
Role: PI
The goal of this work is to explore a new, thermoresponsive hydrogel for delivery of factors to inflamed sinus tissue and measure outcomes.
- 17) Center for Medical Innovation, University of Pittsburgh – Local induction of tolerogenic T cells to ameliorate inflammation in inflammatory bowel disease. \$15,000. July 2018 – June 2019.
Role: co-PI
The goal of this work is to explore induction of endogenous regulatory T-cells as a way to treat inflammatory bowel disease.
- 16) Center for Medical Innovation, University of Pittsburgh – At home diagnostics: Early detection and monitoring of prostate cancer. \$15,000. January 2014 – December 2015.
Role: co-PI
The goal of this work is to develop a facile, at-home test to detect prostate cancer in urine of patients.
- 15) Innovation Works TCC Grant – Translation of Cell Recruiting Formulations for Treatment of Inflammatory Disorders. \$25,000. January 2015 – December 2016.
Role: PI
This TCC grant provides Commonwealth of Pennsylvania support for translational milestones.
- 14) Commonwealth of Pennsylvania Research Development – Tuning of thermogels to be used as sustainable eye drops. \$44,000. January 2015 – June 2015.
Role: Co-PI

The goal of this project is to use the seed funding to explore formulation and physical properties of reverse thermogels as a retention unit for delivery to the eye

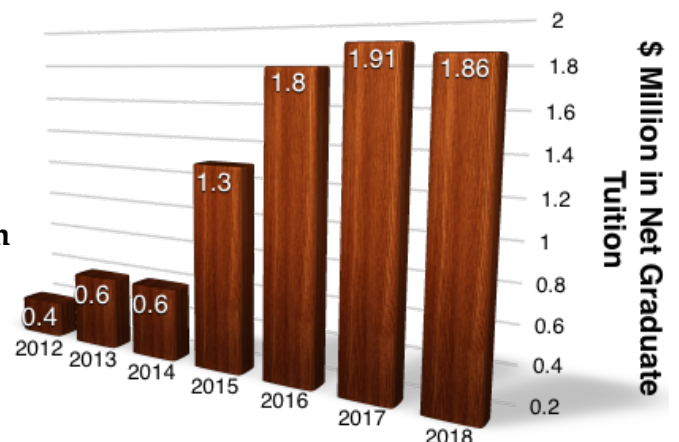
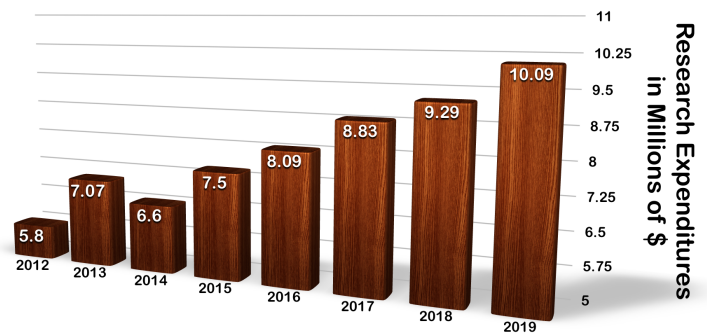
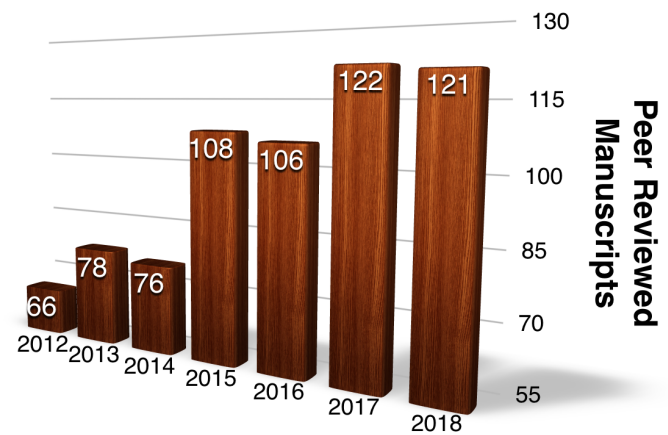
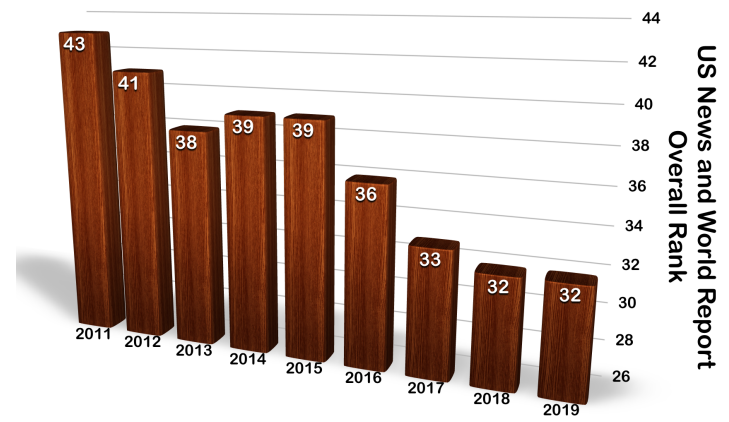
- 13) Center for Medical Innovation, University of Pittsburgh – PerioMag GBR Barrier Membrane. \$12,000. July 2014 – June 2015.
Role: co-PI
The goal of this work is to develop a “PerioMag GBR system” that includes a mechanically reinforced, yet fully degradable, barrier membrane comprised of a metallic magnesium (Mg) mesh embedded in an FDA approved polymer (PLGA).
- 12) Commonwealth of Pennsylvania Research Development – Establishing Dominant Tolerance in Vascularized Composite Allotransplantation via Biomimetic Recruitment and Expansion of Regulatory T Cells. \$40,000. January 2014 – June 2014.
Role: PI
This project will investigate the potential of using biomimetic drug delivery systems to promote long-term VCA survival in the absence of systemic immunosuppression via the in situ recruitment and expansion of a patient’s own suppressive regulatory T cells.
- 11) Commonwealth of Pennsylvania Research Development – A Novel, “Micro-CaP” Scaffold System for the Recruitment and Differentiation of Endothelial Cells and Osteoblast Precursors. \$40,000. September 2012 – June 2013.
Role: PI
Our goals are to design and assess a novel scaffolding construct, called a “MicroCaP” scaffold, to address the need for a tissue engineered material that recruits appropriate cell types to support bone formation at the appropriate time.
- 10) Commonwealth of Pennsylvania Research Development – A New *In Silico* Design Platform for Building Custom Controlled Release Systems. \$50,000. September 2011 – June 2012.
Role: PI
Our goals are to design and build formulations that deliver: 1) ranibizumab for six months, 2) quetiapine for one-month (injectable), and 3) NO2-OA for four weeks.
- 9) Ocular Tissue Engineering and Regenerative Ophthalmology Research (OTERO) Program - Combating Blindness with Convenient and Comfortable Glaucoma Treatments. \$70,000. February 2011 – January 2012.
Role: PI
The major goals of this project are to develop a controlled-release formulation for a common glaucoma medication using polymer microparticles that can improve patient compliance and treatment efficacy.
- 8) Commonwealth of Pennsylvania Research Development – Preclinical Evaluation of New Periodontal Therapies Based Upon Recruitment of Regulatory T-cells. \$50,000. September 2010 – June 2011.
Role: PI
The major goals of this proposal are to utilize a widely accepted pre-clinical canine model of periodontitis to evaluate therapeutic and prophylactic administration of new treatments based upon the recruitment of regulatory T-cells.
- 7) Vertex Pharmaceuticals Pilot Grant. Manipulation of Dendritic Cells Towards Targeted Therapeutics. \$10,000. May 2010 – September 2010.
Role: PI

The major goal of this proposal is to identify a combination of drugs that can effectively manipulate dendritic cell function to achieve a desired clinical outcome.

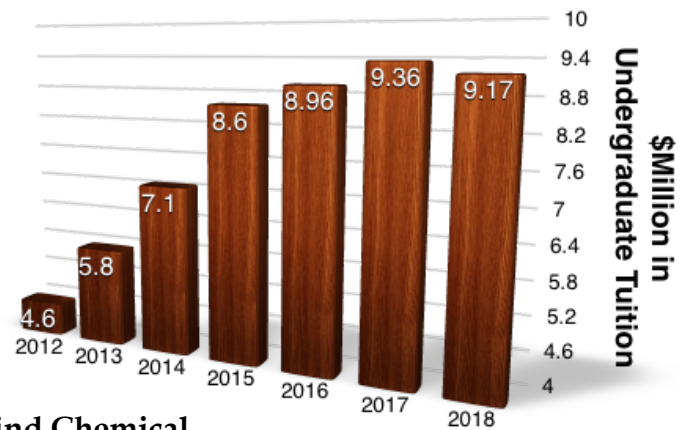
- 6) Commonwealth of Pennsylvania Research Development – 3D-Spheroidal Co-Culture Model for Modulation of Osteo-Angiogenesis. \$10,000. March 2010 – June 2010. Role: PI
The major goals of this proposal are to use a new 3D spheroid co-culture model that mimics *in vivo* osteo-angiogenic processes in order to evaluate various growth factors (and schedules thereof) on dual tissue formation.
- 5) Central Research Development Program, University of Pittsburgh - Dissolvable, Synthetic Vasculature for Delivery of Growth Factors. \$16,000. July 2007 – July 2009.
Role: PI
The major goals of this work are to explore hollow fibers composed of cellulose as externally regulated release devices that can be triggerably dissolved upon application of enzyme.
- 4) Commonwealth of Pennsylvania Research Development - Regenerating Periodontal Structures by Restoring Immunological Regulation. \$78,000. August 2008 - July 2009.
Role: PI
The major goals of this work are to explore therapies that recruit regulatory lymphocytes to the periodontium and, in turn, regulate harmful and destructive inflammation.
- 3) Commonwealth of Pennsylvania Research Development - Murine Matrigel Plug Assay for Evaluating Release from Cellulose Hollow Fibers. \$100,000. August 2007 - July 2008.
Role: PI
The major goals of this proposal are to establish a new ECM-like assay for release, detection, and measurement of biological activity for growth factors that are released from embedded porous hollow fibers.
- 2) MIT Biology Processing and Engineering Center (BPEC), Grant # EEC- 95443790 - Gene Delivery/Microparticle Protein Stability. \$150,000. January 2002 - January 2005. Role: Co-PI
The goal of this work is to explore the biological activity of plasmid DNA after encapsulation and incubation in degradable, polyester microparticles.
- 1) MIT Center for Minimally Invasive Therapies (CIMIT), Grant # DAMD17-02-2-006 - Gene Delivery Using Micro and Nanoparticles \$450,000. January 2002 - January 2005.
Role: Co-PI
The goal of this work is to explore the stability of plasmid DNA in degradable particles containing a mixture of degradable polyester and degradable poly(beta-amino) esters.

CONTRIBUTIONS AS DEPARTMENT CHAIR (2012 – PRESENT)

- Department ranking broke into the **Top 20 in Public Rankings (#19)** for first time in the Department's history in 2018. Entered into the top 20 for AAU Universities in 2016, with the current rank being #17 in 2018. Overall US News and World Report Ranking was #32 in 2019, which represents a >10-point increase over 7 years and the highest rank in Department history.
- Number of publications from **66** peer-reviewed manuscripts (core faculty) and **83** overall peer-reviewed manuscripts (including associated faculty) in 2012 to **121** peer-reviewed manuscripts (core faculty) and **221** peer-reviewed manuscripts overall (including associated faculty) in 2018.
- **Number of proposals submitted by our core faculty through the Swanson School of Engineering and the School of Medicine increased** from an average of 4 proposals per faculty member in 2012/2013 to an average of 8 proposals per faculty member in 2016/2017.
- **Research expenditures increased from \$7M in 2012/2013 to \$8.8M in 2016/2017.**
- **Undergraduate enrollment produced \$9.29M in 2018 - up from \$5.8M in 2012.**
- Rebuilt a 750 sq. ft. Graduate Lounge on the 9th floor of Benedum Hall. Re-established graduate student council.
- **Established MS program in ChemE that (along with PhD program) produces \$1.86M in revenue generation annually (2018) - up from \$0.4M in net graduate tuition in 2012.**
- **Established the James Pommershiem Award for Excellence in Teaching (\$2,000 award) for faculty deemed most productive in teaching annually through a partnership with James Pommershiem.**
- Department was **#1 in overall teaching effectiveness (OTE) in the School (in competition with all Departments) every year from 2012-2019.**



- Established a **\$1.2M Strategic Alliance with the Lubrizol Corporation**, the first of its kind in the Swanson School of Engineering. This Alliance led to an additional \$1M in grants to the Office of Research and now projects in the Departments of Mechanical Engineering and Materials Science.
- After 3 years of effort, the **Lubrizol Strategic Alliance was renewed for another 3 years**, with Lubrizol executives citing significant value provided through the multi-million dollar relationship.
- As a result of the Strategic Alliance, our faculty and the Lubrizol Corporation (led by Professor Götz Vesper) competed for, and received a large, multi-year grant from the national, DOE RAPID Initiative, bringing the **total value of the Lubrizol - University of Pittsburgh Alliance to >\$11M**.
- Member of a team that established a **first-of-its-kind Chemical Engineering Product Design Sequence for undergraduates** culminating in a prototyping experience in the Senior Year.
 - Original Idea Submitted to ASEE and was Awarded Best Poster at the ASEE Annual Meeting in 2015.
 - Led to the founding of Aeronics Inc, a spinoff from the University of Pittsburgh by our undergraduate students, now a startup based in Manhattan, NYC.
 - Students have won numerous awards for their ideas including placing in the money in national innovation competitions in Washington, DC, multiple national Innocentive competitions, and the University of Pittsburgh's Big Idea Competitions multiple years in a row as well, netting our students thousands of dollars in prize money.
- Established the **Department History Wall and the Department Chairs Wall** that highlights the rich history and legacy of leadership from the Department of Chemical and Petroleum Engineering at the University of Pittsburgh dating back to 1911.
- **Department faculty were awarded two (2) DoE GAANNs and two (2) NSF REUs from 2012-2015**, led by Professors Robert Parker and Joe McCarthy.
- **Negotiated the hire of thirteen (13) faculty over a period of 7 years** including: 1) John Keith (TS), 2) Giannis Mpourmpakis (TS), 3) Andrew Bungler (TS) 4) Chris Wilmer (TS), 5) Jason Shoemaker (TS), 6) Susan Fullerton (TS), 7) Michael Matuszewski (NTS), 8) Taryn Bayles (NTS), 9) James McKone (TS), 10) Tagbo Niepa (TS) 11) Hseen Baled (NTS), 12) Joaquin Rodriguez (NTS), 13) Mohammad Masnadi.
- **Five (5) of the Assistant Professors recruited by Dr. Little have received the NSF CAREER Award including three (3) awards all in the same year (2017), the first time to our knowledge, in NSF History that 3 Awards will go to the same Department in the same year:** 1) John Keith (2017), 2) Giannis Mpourmpakis (2017), 3) Chris Wilmer (2017), 4) Susan Fullerton (2018) and 5) Jason Shoemaker (2020).
- **Hired seven (7) staff members** including: 1) Michael McMahon (Undergrad Labs), 2) Matthew Detzel (Undergraduate Labs), 3) Angela Dillon (Executive Assistant), 4) Julia Roberts (Executive Assistant and Department Reception), 5) Alice Liang (Executive Assistant and Post-Award Administrator), 6) Kristen Harper (Event Coordinator), 7) Emily Kerr (Undergraduate



Coordinator).

- Established leadership delegation structure in the Department including Vice Chair for Undergraduate Education, Vice Chair for Graduate Education, Vice Chair for Research, Director of Administration (Chief of Staff), Director of External Relationships, and Director of Entrepreneurship positions.
- Established a new, **goal-oriented, transparent evaluation process** for faculty in 2012 that contributed to the increase in productivity outlined above.
- Selected in 2018 as the Department Chair to speak at the AIChE Annual Meeting in the Young Faculty Forum on the most important things to the success of junior faculty.
- Progress Toward a More Diverse and Inclusive Department
 - **Implemented a modification of the Rooney Rule in faculty hiring.**
 - Hired the **only, current African American, Tenure-Stream Assistant Professor in the Swanson School of Engineering.**
 - Department was the **2015 winner of the Swanson School of Engineering Diversity Award.**
 - Through targeted recruitment efforts, our **percentage of Latino-American engineers (16.7%) is now approximately 3 times the national average for Ph.D. engineering degrees awarded (5.3%), and women engineers now comprise 33% of our entering Ph.D. class, which compares very favorably to the national average for graduating women engineers (32.7%).**
 - Financially supported the **re-establishment of the Graduate Women Engineering Network (GWEN) in the SSOE** entirely through leadership of Chemical Engineering Faculty (Bodnar, Fedorchak, Yang).
 - Retention rate for graduate students in both masters (three year) and PhD (six year) in the Department are now **100% for both women and underrepresented minorities.**
 - Our five-year undergraduate graduation rate for women (sophomore to senior) is **96%, and for underrepresented minorities, it is 100%.**
- **Successful nominations for Awards:**
 - Götz Vesper - Chancellors Distinguished Teaching Award, 2022
 - In 2021, 3 out of 3 nominations from Chemical and Petroleum Engineering for Endowed Professorships/Faculty Fellowships were awarded
 - Giannis Mpourmpakis - BiCentennial Alumni Faculty Fellow, 2021
 - John Keith - R.K. Mellon Faculty Fellow, 2021
 - Judy Yang - William Kepler Whiteford Endowed Professor, 2021
 - Joseph McCarthy - William Kepler Whiteford Endowed Professor, 2020
 - James McKone - Arnold and Mabel Beckman Young Investigator Award, 2020
 - In 2019, 3 out of 3 nominations from Chemical and Petroleum Engineering for Endowed Professorships/Faculty Fellowships were awarded
 - Susan Fullerton - BiCentennial Alumni Faculty Fellow, 2019
 - Chris Wilmer - William Kepler Whiteford Faculty Fellow, 2019
 - Karl Johnson - William Kepler Whiteford Endowed Professor, 2019
 - Giannis Mpourmpakis - Bodossaki Foundation Distinguished Young Scientist, 2019.
 - Ipsita Banerjee - Swanson School of Engineering Diversity Award, 2019
 - Susan Fullerton - AAAS Marion Milligan Mason Award, 2018
 - Bob Parker - Swanson School of Engineering Board of Visitors Award, 2017

- In 2017, 5 out of 5 nominations from Chemical and Petroleum Engineering for Endowed Professorships/Faculty Fellowships were awarded
 - Giannis Mpourmpakis - BiCentennial Alumni Faculty Fellow, 2017
 - John Keith - R.K. Mellon Faculty Fellow, 2017
 - Götz Vesper - Nickolas Dececco Endowed Professor, 2017
 - Robert Enick - Bayer Endowed Professor, 2017
 - Robert Parker - Robert van der Luft Endowed Professor, 2017
- Anna Balazs - John Swanson Endowed Chair in Engineering, 2017
- Chris Wilmer - CoMSEF Young Investigator Award (Co-Nomination with Karl Johnson), 2017
- Robert Parker - Swanson School of Engineering Outstanding Educator Award, 2017
- Susan Fullerton - Ralph E. Powe Junior Faculty Enhancement Award, 2016
- Judy Yang - Nickolas DeCecco Endowed Professor, 2016
- Gerald Holder - Distinguished Service Professor (Co-Nomination with Harvey Borovetz), 2016
- Eric Beckman - Distinguished Service Professor, 2015
- Joseph McCarthy - Chancellors Distinguished Teaching Award, 2015
- Yadong Wang - Carnegie Science Award (Life Sciences), 2015
- Prashant Kumta - Carnegie Science Award (Advanced Materials), 2015
- Anna Balazs - MRS Polymer Physics Prize (**first woman ever to win this prize**), 2015
- Joseph McCarthy - William Kepler Whiteford Endowed Professor, 2015
- Judy Yang - Drexel ELATE, 2015
- Götz Vesper - SSOE Outstanding Educator Award, 2014
- Karl Johnson - William Kepler Whiteford Endowed Professor, 2014
- Anna Balazs - Robert van der Luft Endowed Professor, 2014
- Anna Balazs - MRS Fellow, 2014
- Anna Balazs - WCC Award for Excellence in the Chemical Sciences, 2014
- Jay Jikich - SSOE Adjunct Faculty Award, 2014
- Anna Balazs - ACS Langmuir Lecturer, 2014
- Robert Enick - Swanson School of Engineering Board of Visitors Award, 2014
- Anna Balazs - SF Boys A Rahman Award from the Royal Society of Chemistry, 2014
- Anna Balazs - Colorado School of Mines, Mines Medal, 2013
- Di Gao - Whiteford Faculty Fellowship, 2013
- Robert Parker - BP America Faculty Fellowship, 2013
- Götz Vesper - Nickolas Dececco Endowed Professor, 2012
- Robert Enick - Bayer Endowed Professor, 2012
- **Leadership and Service on School and University Committees:**
 - Member, University of Pittsburgh Steering Committee for the Plan for Pitt 2025 (University Strategic Plan), 2019 - present.
 - Member, Chancellor's Hiring Committee for Senior Vice Chancellor for Institutional Advancement, 2017
 - Member, Chancellor's Hiring Committee for Senior Vice Chancellor for Research, 2016-2017
 - Chair of the Committee to determine the Future Vision for the Swanson School of Engineering, 2016- present
 - Chair of the Committee to honor Dean Gerald Holder's 20 years of service as Dean of the Swanson School of Engineering, 2016
 - Selected to serve on the Swanson School's Committee for incentivization of innovation and entrepreneurship, 2016
 - Selected to serve on the University's Innovation and Entrepreneurship committee for promotion of the University's Innovation Institute, 2016

- SSOE Planning and Budget Committee, 2015 – 2017
- Selected to serve on the University's Research Vision and Planning Committee, 2015- present
- Mechanical Engineering Department Chair Selection Committee – Selected Brian Gleeson to lead the Department in 2014
- SSOE Leadership Development Committee, 2014
- Selected to Serve on the University's Committee for Excellence in Education, 2014 – 2017
- Swanson School of Engineering Leadership Team, 2012 – present

TEACHING EXPERIENCE

Lecturer - Department of Chemical Engineering and Bioengineering, University of Pittsburgh. 2006 – present.

Guest Lecturer - Department of Bioengineering, Carnegie Mellon University. 2011.

Guest Lecturer - School of Dental Medicine, University of Pittsburgh. 2009 – present.

Lecturer/Teaching Assistant - Department of Chemical Engineering, Massachusetts Institute of Technology. Spring, 2003.

Research Project Demonstrator/Lecturer - Professional Education Program, Massachusetts Institute of Technology. Summer 2001 – 2005.

Courses Taught (Average Overall Weighted Teaching Effectiveness = 4.8 / 5.0):

Controlled Drug Delivery (ChemE / BioE 1533/2533/3533) – Spring 2006. Primary Instructor.

Enrollment: 12

Contact Hours Per Week: 3

Overall Teaching Effectiveness Score: 4.3 / 5.0

Biomaterials and Biocompatibility (BioE 1810) – Fall 2006. Invited Lecturer.

Enrollment: 35

Contact Hours Per Week: 3

Overall Teaching Effectiveness Score: NA

Controlled Drug Delivery (ChemE 3533) – Spring 2009. Primary Instructor.

Enrollment: 12

Contact Hours Per Week: 3

Overall Teaching Effectiveness Score: 4.63 / 5.0

Introduction to Transport Processes (ChemE 0300) – Fall 2010. Primary Instructor.

Enrollment: 78

Contact Hours Per Week: 6

Overall Teaching Effectiveness Score: 4.97 / 5.0

Current Topics in Oral Health Research (DENT 5340) – Spring 2011. Invited Lecturer.

Enrollment: 15

Contact Hours Per Week: 3

Overall Teaching Effectiveness Score: NA

Introduction to Biomaterials (CMU 42-511) – Spring 2011. Invited Lecturer.

Enrollment: 25

Contact Hours Per Week: 3

Overall Teaching Effectiveness Score: NA

Introduction to Transport Processes (ChemE 0300) – Fall 2011. Primary Instructor.

Enrollment: 101

Contact Hours Per Week: 6

Overall Teaching Effectiveness Score: 4.88 / 5.0

Controlled Drug Delivery (ChemE / BioE 1533/2533/3533) – Spring 2013. Primary Instructor.

Enrollment: 28

Contact Hours Per Week: 3

Overall Teaching Effectiveness Score: 4.77 / 5.0

Controlled Drug Delivery (ChemE / BioE 1533/2533/3533) – Spring 2014. Primary Instructor.

Enrollment: 26

Contact Hours Per Week: 3

Overall Teaching Effectiveness Score: 3.63 / 5.0

Educational Honors:

- Chosen as a Member of the Advisory Board for the National Science Foundation sponsored TUES (Transforming Undergraduate Education in Science) research project entitled: “Design for Impact: Effective Activities that Faculty will use”
- Recipient of the 2013 Carnegie Science Award for University Educators
- Recipient of the 2013 Chancellors Distinguished Teaching Award of the University of Pittsburgh

Research Mentor for:

Postdoctoral Research Associates:

Furkan Ertem Immunoengineering Treatments for the Colon. 2021-Present. Support Source. Department of Gastroenterology.

Roger (Warren) Sands Immunoengineering Treatments for Colitis. 2018-Present. Support Source. NIH T32 Awarded to Applicant.

Stephen Balmert Engineering the Immunological Microenvironment of the Skin for Type IV Hypersensitivity, 2018 – present. Support Source: NIH R01.

Nihan Yonet-Tanyeri Engineering the Skin Microenvironment to Promote Allergen Tolerance. 2018 – Present. Support Source: NIH R01 AR074285.

Yalcin Kulahci Vascularized Composite Tissue Allograft Transplantation. 2017 – 2019. Support Source: DoD (#MR141093). – *Now Microsurgical Fellow at Wake Forest Institute for Regenerative Medicine*

Sang Beom Lee (Visiting Research Assistant Professor) Biomimetic Polymer Engineering, 2016 – 2017.

Elena Bellotti Engineering a One-Month Ocular Delivery System for Glaucoma, 2016-2018.

Support Source: NIH R01 – *Now Marie Curie Postdoctoral Fellow at the Italian Institute of Technology.*

Andrew Glowacki Delivery of Regulatory Cell Recruitment Factors for Periodontal Disease, 2015 – 2016. Support Source: Wallace H. Coulter Foundation. – *Now Senior Scientist at Johnson and Johnson.*

Abhi Acharya Recruitment and Reprogramming of Endogenous Tolerogenic Dendritic Cells for the Treatment of Cancer. 2014 – 2018. Support Source: NIH R01. – *Now Tenure Stream Assistant Professor at Arizona State University.*

Riccardo Gottardi “Zero Dimensional” Single Walled Carbon Nanotubes, 2011 – 2018. Support Source: Ri.MED Postdoctoral Fellows Program, University of Pittsburgh School of Medicine. – *Now Research Assistant Professor in the Department of Orthopedics at the University of Pittsburgh.*

Sayuri Yoshizawa Pre-Clinical Evaluation of Treatments for Periodontal Disease that Restore Immunological Homeostasis, 2011 – 2017. Support Source: NIH R56 and NIH R01 Grants. – *Now Research Assistant Professor at the University of Pittsburgh School of Dental Medicine.*

Huili Fu New Materials for Porous, Dissolvable Hollow Fibers, 2011 – 2014. Support Source: Department of Defense ARM IV Grant. – *Now Postdoctoral Associate at the UPMC Cardiovascular Institute.*

Morgan Fedorchak (Currently Tenure Stream Assistant Professor of Ophthalmology at the University of Pittsburgh) Engineering a One-Month Ocular Delivery System for Glaucoma, Spring 2011 – 2014. Support Source: Ocular Tissue Engineering and Regenerative Ophthalmology Research (OTERO) Grant. – *Now Tenure Stream Assistant Professor (NIH K Award Winner) in Ophthalmology at the University of Pittsburgh.*

Zuwei Ma New Materials for Porous, Dissolvable Hollow Fibers, 2009 – 2014. Support Source: Department of Defense ARM IV Grant. – *Now Senior Scientist at Neograft Technologies.*

Kaladhar Kamalasanan Synthetic Immunological Synapses, 2009 - 2012. Support Source: NSF CDI Type I Grant. – *Now Tenure Stream Assistant Professor at Amrita University.*

PhD Students:

Felicity Orndoff (Department of Chemical Engineering, University of Pittsburgh) Immunoengineering of Formulations for Transplantation Tolerance. Winter 2022 – Present. Source: US Department of Defense.

Julie Kobyra (Department of Bioengineering, University of Pittsburgh) Translation of Treg Recruitment Formulations for Treatment of Periodontitis and Exploration of the Interaction of MSCs and Treg in Regulation of Periodontitis. Fall 2020 – Present. Source: NIDCR MPWRM Consortium

Elizabeth Bentley (Department of Bioengineering, University of Pittsburgh) Immunoengineering the ATP-Adenosine Axis to Mediate Transplant Rejection, Fall 2019-present. Source: NIH T32.

Matthew Borrelli (Department of Chemical Engineering, University of Pittsburgh) Sustained Release Microspheres for Engineering the Infarct Microenvironment, Summer 2018 – present. Source: NIH R01/T32.

Andrea Schilling (Department of Chemical Engineering, University of Pittsburgh) A Conforming Thermogel Retained in the Sinus Cavities for Long-Acting Treatment of Chronic Sinusitis, Fall 2016 – present. Source: NIH R01/T90/CRDF/EEF Gift.

Ashlee Greene (Department of Chemical Engineering, University of Pittsburgh) Development of a New Standardized In Vitro Dissolution Assay for Controlled Release Systems in the Periodontal Pocket, Fall 2015 – present. Support Source: US Food and Drug Administration Grant.

Ethan Bassin (Department of Immunology, University of Pittsburgh) Encapsulation and Controlled Release of Conditioned Media from Regulatory T Cells, Summer 2016 – December 2020. Support Source: NIH R01. – *Now Life Science Specialist at L.E.K. Consulting*

Thiagarajan (Thiagu) Meyyappan (Physician Scientist Training Program, University of Pittsburgh) Training Lymphocytes Ex-Vivo Using Microfluidic Environments for Antigen-Specific Tolerance, Summer 2014 – Summer 2018. Support Source: University of Pittsburgh MSTP Program. – *Now Resident at University of Pittsburgh Medical Center.*

Michelle Ratay (Department of BioEngineering, University of Pittsburgh) “Zero Dimensional” Single Walled Carbon Nanotubes, Summer 2013 – December 2017. Support Source: Coulter Translational Research Award, NIH T32. – *Now Medical Science Liaison at Allergan.*

Timothy Knab (Department of Chemical Engineering, University of Pittsburgh) Systems Based Modeling of Controlled Release *In Vivo*, 2011 – 2017. Support Source: Department of Education GAANN. – *Research Scientist in Systems Pharmacology at Metrum Research.*

Emily Bayer (Department of BioEngineering, University of Pittsburgh) Temporal Delivery of Factors for Bone Tissue Regeneration, 2011 – 2016. Support Source: CATER T32 Grant. – *Now Senior Engineer at Carmell Therapeutics.*

Stephen Balmert (Department of BioEngineering, University of Pittsburgh) Engineering Smart Immunotherapeutics for Rapid IgM Responses, 2010 – present. Support Source: NSF Graduate Research Fellowship, NIH R01. – *Defended His Thesis in November 2017. Currently Postdoctoral Associate in Faló and Little Labs.*

James Fisher (MD/PhD Program, Department of BioEngineering, University of Pittsburgh) Engineering Smart Immunotherapeutics for Autoimmunity, 2010 – present. Support Source: DoD Funded Grant, NIH T32 Training Grant. – *Now Resident at University of Pittsburgh Medical Center.*

Melissa Lash (Graduated, Currently Scientist at Johnson and Johnson; Previously, Department of Chemical Engineering, University of Pittsburgh) Particle Based Scaffolds with Anisotropic Patches that Disassemble and then Reassemble via Chemical Cue, 2011 – 2016. Support Source: Department of Education GAANN, Provost’s Fellowship. – *Now Scientist at Johnson and Johnson.*

Andrew Glowacki (Graduated, Currently Postdoctoral Associate in LittleLab; Previously, Department of Chemical Engineering, University of Pittsburgh) Delivery of Regulatory Cell Recruitment Factors for Periodontal Disease, 2008 – 2016. Support Source: NIH F31 Fellowship. – *Now Senior Scientist at Johnson and Johnson.*

Christopher Mahoney (Transferred to Marra Lab at Pitt; Department of BioEngineering, University of Pittsburgh) “Sustained Release of Antivirals for the Treatment and Prevention of HIV”, Fall 2013 – Spring 2014. Support Source: Engineering Office of Diversity Fellowship.

Xiaoran (Zel) Zhang (Left Group for Personal Reasons; Previously, MD/PhD Program, Department of Immunology, University of Pittsburgh) Controlled Release Vaccine, Summer 2012 – Fall 2013. Support Source: University of Pittsburgh Medical Scientist Training Program. (*Left research group for personal reasons*). – *Now PGY-2 Medical Resident at University of Pittsburgh School of Medicine.*

Mintai (Peter) Hwang (Left research group for military service requirement; Previously, Department of BioEngineering, University of Pittsburgh) Biomimetic Delivery of Multiple Stimuli to Osteoblasts and Osteoclasts, 2008 – 2011. Support Source: NSF CDI Type I Grant. (*Left research group for military service requirement. Returned to receive his PhD under Yadong Wang*). – *Now Postdoctoral Associate at Cornell University*.

Daniel Hachim (Transferred to Brown Lab; Department of BioEngineering, University of Pittsburgh) Recruitment and Manipulation of Mesenchymal Stems Cells Using Biomimetic Drug Delivery, 2012 – 2013. Support Source: Fulbright Foundation Scholarship. (*One year and a half with no project deliverables from student. Transferred to a new project in Brian Brown's Laboratories in 2013*).

Heidi Hofer (Transferred to Tuan Lab; Department of BioEngineering, University of Pittsburgh) Prediction of Novel Biomaterials for Delivery of Osteoconductive Genes from Biodegradable Scaffolds, 2007 – 2010. Support Source: McGowan Institute CATER T32 Training Grant. (*Training Grant Expired with No Project Deliverables From Student. Transferred to a new project in Rocky Tuan's Laboratories in 2010*). – *Now Manufacturing Associate at Gradalis, Inc.*

Sam Rothstein (Department of Chemical Engineering, University of Pittsburgh) Prediction of Controlled Release from Biodegradable Polymer Matrices, 2006 – 2012. Support Sources: Commonwealth of PA Research Development Grant and NIH K-Award. – *Now CEO of Qrono, Inc.*

Siddharth Jhunjhunwala (Department of BioEngineering, University of Pittsburgh) Biomimetic Delivery of Multiple Stimuli to T Cells, 2006 – 2011. Support Source: Arnold and Mable Beckman Foundation Young Investigator Award. – *Now Tenure Stream Faculty Member at the Indian Institute of Science, Postdoctoral Fellow in Bioengineering at MIT.*

Jillian Tengood (Department of BioEngineering, University of Pittsburgh) Synthetic, Elastic Hollow Fibers as Artificial Capillaries for Wound Healing, 2006 – 2011. Support Source: University of Pittsburgh Cardiovascular BioEngineering T32 Training Grant. – *Now Senior Project Engineer at ECRI Institute, Previously NIH Postdoctoral Fellow at University of Pennsylvania Children's Hospital.*

Masters Students:

Doug Francioni (Department of Chemical Engineering, University of Pittsburgh) Immunoengineering of Formulations for Transplantation Tolerance. Winter 2022 – Present. Source: US Department of Defense.

Lilian Ngobi (Department of Chemical Engineering, University of Pittsburgh) Predicting Plasma Concentration as a Result of Local Controlled Release Using a New, Broadly Applicable Mathematical Model, Spring 2011 – 2012. Support Source: Self-supported. – *Now Scientist at L'Oreal.*

Tianzhou (Vera) Wu (Department of Chemical Engineering) A Process Control Approach to Controlled Release Through Successive Matrices, Spring 2011 – 2012. Support Source: Self-supported. – *Now Senior Scientist at CDC/NIOSH.*

Daniel DeSantis (Department of Chemical Engineering, University of Pittsburgh) Examination of the Effect of Sequence of Osteoconductive and Osteogenic Factors on 3D *In Vitro* Culture of Mesenchymal Stem Cell and Endothelial Mixtures, Spring 2011 – 2013. Support Source: Self-supported. – *Now Project Engineer at Strategic Analysis Associates.*

Anu Karunanidhi Temporal Delivery of Growth Factors for Osteogenesis, 2009 – 2010. Support Source: United States Army Institute for Regenerate Medicine (AFIRM). – *Now Lecturer at Sri Ramachandra Medical College.*

Undergraduate Students (58 to date):

Reetwan Bandyopadhyay (Department of Bioengineering, University of Pittsburgh). Spring 2020 – Present.

Benjamin Ahlmark (Department of Chemical Engineering, University of Pittsburgh) Landscape Analysis of Lateral Flow Assays and Cancer Diagnostics. Spring 2020 – Present.

James O’Sullivan (Research Experience for Undergraduates Fellow, The Ohio State University) Bladder Cancer Diagnosis REU Fellowship. Summer 2018.

Matthew Rytel (McGowan Institute for Regenerative Medicine, University of Pittsburgh) Direct Evolution of Probiotics for Intra-intestinal Metabolism of Lipids and Carbohydrates. Spring 2018 - present.

Adam Carcella (Department of Chemical Engineering, University of Pittsburgh) Small molecule release from controlled release systems for ciliary regeneration in chronic rhinosinusitis. Spring 2018 - 2019. – *Now Field Engineer at Biogen.*

Erin Cannon (Department of Chemical Engineering, University of Pittsburgh) The effect of pH on drug release from a microparticle-thermogel system for treatment of chronic rhinosinusitis. Spring 2018 - present.

Kayla LeMaster (Department of Chemical Engineering, University of Pittsburgh) Induction of Regulatory T Cells for Treatment of Periodontitis. Spring 2016 – Spring 2018. – *Now Field Engineer at Schlumberger.*

Inderbir Sondh (Department of Bioengineering, University of Pittsburgh) Development of A Bioreactor Aimed at Designing Spatial and Temporal Drug Delivery Profiles for Bone Regeneration Protocols. Spring 2016 – Spring 2018. – *Now PhD Candidate at University of Minnesota.*

Harrison Lawson (Department of Chemical Engineering, University of Pittsburgh) Development of Mucoadhesive, Bacteria Killing Micro and Nonparticles for Oral Hygiene. Summer 2016 – Spring 2018. – *Now PhD Candidate at Michigan State University*

Sydney Anderson (Department of Chemical Engineering, University of Pittsburgh) REU Fellow. Summer 2017.

Sandra Walton (Department of Chemical Engineering, University of Arkansas) Summer Research Fellow. Summer 2017 – *Now Chemical Engineer & Maintenance Supervisor at Cargill.*

Naomi Joseph ((Department of Chemical Engineering, University of Pittsburgh) Drug Delivery Approaches for Induction of Bone using Metal Organic Frameworks (MOFs). 2017 – Spring 2018. – *Now PhD Candidate at Case Western Reserve University*

Gillian Schriever (Department of Chemical Engineering, University of Pittsburgh) Treg-Inducing Microspheres for the Prevention of Dry Eye Disease. Summer 2016 – Fall 2018. – *Now Business Technology Analyst at Deloitte*

Nicholas Yuhás (Department of Chemical Engineering, University of Pittsburgh) Generating and Testing a Panel of Arestin® Comparators: Minocycline-Loaded PLGA Microspheres. Spring

2016 – Spring 2018. – *Now enrolled at WVU School of Medicine (M.D.)*

Jahnelle Jordan (Department of Bioengineering, University of Pittsburgh) Development of Controlled Growth Factor Delivery Scaffolding for Bone Tissue Engineering. Summer 2013 – 2016. – *Now PhD Candidate in Biological Sciences at Columbia University.*

Patrick Bianconi (Department of Bioengineering, University of Pittsburgh) Controlled Release of Dorsomorphin to Prevent the Terminal Differentiation of Mesenchymal Stem Cells: A Potential Method for Articular Cartilage Regeneration. Fall 2012 – 2015. – *Now Quality Engineer at Baxter International.*

Sevahn Voperian (Department of Chemical Engineering, Carnegie Mellon University). Interferon Gamma Releasing Particles as a Treatment for Acute Myeloid Leukemia. Fall 2015 – 2016. – *Now Medical Student at Columbia University Medical Center.*

Felix Nguyen (Department of Immunology, University of Pittsburgh) Exploration of Conditioned Mesenchymal Stem Cell Media as an Alternative to *Ex Vivo* Mesenchymal Stem Cell-Based Treatments for Ocular Regeneration. Fall 2012 – present. – *Now Medical Student at the University of Pittsburgh School of Medicine.*

Anthony Cugini (Department of Bioengineering, University of Pittsburgh) Development of a Hydrogel Matrix for Drop-Like Delivery of Drug-Loaded Microparticles to the Inferior Fornix of the Eye. Spring 2012 – 2016. – *Now PhD Candidate in Bioengineering at the University of Pittsburgh.*

Meghana Patil (Department of Bioengineering, University of Pittsburgh) Controlled-Released Kartogenin: A Treatment for Cartilage Regeneration in Osteoarthritis. Spring 2012 – 2015. – *Now MD Student at Temple University.*

Erin Sarosi (Department of Bioengineering, University of Pittsburgh) Investigation of Particle Porosity and Burst Release Behavior for Improved Pulmonary Drug Delivery. Summer 2013. – *Now Mechanical Engineering Machine Technician, University of Pittsburgh.*

Skylar Wilcox (Department of Chemical Engineering, University of Pittsburgh) Regulation of Cell Migration and Differentiation by Microparticle-based Controlled Delivery. Fall 2012 – Spring 2013. – *Now Propylene Contact Engineer, ExxonMobil.*

Dhruv Srinivasachar (Department of Bioengineering, University of Pittsburgh) Design of Formulations for the *In Vivo* Induction of Regulatory T-cells in a Composite Tissue Allograft (CTA) Model. Fall 2012 – Spring 2014. – *Now MD/PhD Candidate at the Virginia Commonwealth University School of Medicine.*

Bon Ikwuagwu (Department of Chemical Engineering, University of Pittsburgh) Inverse, Hierarchical Colloidal Crystal-Based Scaffolds. Fall 2013 – Spring 2014. – *Now PhD Candidate in Chemical and Biological Engineering at Northwestern University.*

Stephen Kita (Department of Chemical Engineering, University of Pittsburgh) Artificial Thermalization and Self Assembly of Non-Brownian Particulate Systems. Fall 2012 – January 2013. – *Now R&D Engineer at ZSX Medical, LLC.*

Matthew Simson (Department of Chemical Engineering, University of Pittsburgh) The Effect of Controlled Delivery of PDGF-BB on the Chemotaxis and Proliferation of Mesenchymal Stem Cells. Spring 2012 – January 2013. – *Now Process Engineer at Praxair.*

Laura C. Blevins (Visiting Undergraduate Student, University of Maryland, Baltimore County)

Creating Large-scale Colloidal Crystals through Artificial Thermalization, Summer 2012. – *Just received her PhD in Neuroscience at American University, Washington DC.*

Joseph Lownik (Visiting Undergraduate Student, Beloit College) Controlled Release of Serum and Conditioned Media as a Potential Regenerative Therapeutic in Ocular Pathology. Summer 2012. – *Now MD/PhD Candidate at the Virginia Commonwealth University School of Medicine.*

Danelys Estades Quiros (Visiting Undergraduate Student, University of Puerto Rico-Mayaguez Campus) Regulation of Cell Migration and Differentiation by Microparticle-based Controlled Delivery. Summer 2012. – *Now PhD Candidate in Chemical Engineering at University of Puerto Rico.*

Emmeline Blanchard (Department of Chemical Engineering, University of Pittsburgh) Examination of the Effect of Sequence of Osteoconductive and Osteogenic Factors on 3D *In Vitro* Culture of Mesenchymal Stem Cell and Endothelial Mixtures. Fall 2011 – Fall 2013. – *Now PhD Candidate in Bioengineering at Georgia Tech.*

Andrew Zmolek (Department of Chemical Engineering, University of Pittsburgh) Polymer-drug Interactions Govern Release of Molecules from Poly (lactic-co-glycolic) Acid Microspheres. Fall 2011 – Spring 2013. – *Just successfully defended his PhD in Chemical Engineering at MIT.*

Sydney Cope (Visiting Undergraduate Student, Northwestern University) Use of Poly (lactic-co-glycolic) Acid Microspheres as a Delivery Vehicle for Glaucoma Medication. Summer 2011. – *Now Principal Engineer at Baxter International.*

Joseph Wokpetah (Visiting Undergraduate Student, City College of New York) Polymer-Drug Interactions Govern Release of Molecules from Poly (lactic-co-glycolic) Acid Microspheres, Summer 2011. – *Now Scientist at Merck Pharmaceuticals.*

Elaine Yu (Visiting Undergraduate Student, Rutgers University) Synthesizing Particles that Present Surface-Bound Molecules While Simultaneously Releasing Other Signals from its Interior. Summer 2011. – *Now Systems Engineer at Magnetic Insight Inc. after receiving her PhD in Bioengineering from the University of California, Berkeley.*

Joshua Mealy (Department of Bioengineering, University of Pittsburgh) Rational Design of a Controlled Release System for Brominidine Tartrate. Spring 2011 – Spring 2013. *Now NSF Graduate Fellow and PhD Candidate in Bioengineering at the University of Pennsylvania.*

Ross Brodsky (Department of Chemical Engineering, University of Pittsburgh) Sequential Delivery of VEGF and S1p Using a Fully Injectable and Degradable Release System. Fall 2010 – Fall 2011. – *Now Instructor at Phillips Exeter Academy.*

Dan Maskarinec (Department of Bioengineering, University of Pittsburgh) Mathematical Model Validation for Sequential Delivery of Growth Factors Using Porous Hollow Fibers. Fall 2010 – Fall 2011. – *Now Engineer at Epic Technical Services.*

Joseph Miccio (Department of Chemical Engineering, University of Pittsburgh) Development of Synthetic Synapses on the Surface of Cell-sized Particles. Fall 2010 – Fall 2011. – *Now PGY-2 Resident Physician at Yale - New Haven Hospital.*

Jacob Sacks (Department of Bioengineering, University of Pittsburgh) Quantitative PCR Analysis of Tissue Samples Treated with Treg Recruiting Formulations. Fall 2010 – Fall 2011. – *Now PhD Candidate in Electrical and Computer Engineering at Georgia Tech.*

Alexandra Swanson (Department of Bioengineering, University of Pittsburgh) Application of

“Synthetic Cells” to Stimulation of Biological Cells in Culture. Fall 2010 – Fall 2012. – *Now Medical Student at Jefferson Medical College.*

Ryan Ridenour (Visiting Summer Student, Allegheny College) Hollow Fiber Characterization and Release, Gradient Separation of SWNTs and Characterization. Summer 2010.

Adam Dobson (Department of Chemical Engineering, University of Pittsburgh) Troubleshooting Controlled Release of Highly Electropositive Proteins. Summer 2010 – Summer 2011. – *Now Senior Research Assistant in the Division of Biomaterials and Biomechanics at the Oregon Health and Science University.*

Drew Bundschuh (Visiting Undergraduate Student, Bucknell University) Strategies to Improve the Release of PGDF and Other Charged Proteins. Summer 2010. – *Now Associate Scientist at Glaxo Smith and Kline.*

Julie Fatula (Department of Chemical Engineering, University of Pittsburgh) Controlled Release of Vasoactive Intestinal Peptide. 2009 – 2011. – *Now Project Manager at Covestro, Houston Texas.*

Nathan Luke Clohcy (Department of Chemical Engineering, University of Pittsburgh) DNA Release from PBAE-PLA Scaffolds. Fall 2008 – 2009.

Ruchi Desai (Department of Chemical Engineering, Carnegie Mellon University) Single Injection Vaccine Project. Fall 2008 – 2009. – *Now Internal Medicine Resident at Hershey Medical Center, Penn State University.*

Erin Nichols (Department of Immunology, University of Pittsburgh) Dendritic Cell Specific Delivery of HDAC Inhibitors. Fall 2008 – 2010. – *Now Ophthalmology Resident at Wills Eye Hospital, Vanderbilt University School of Medicine.*

Sherri Hall (Department of Bioengineering, University of Pittsburgh) Recruitment of Regulatory T Cells Using Chemokine Encapsulated Microparticles. Fall 2008 – 2010. – *Now Senior Regulatory and Quality Engineer at R&Q Solutions, previously Research Intern at Cohera Medical.*

Jennifer Kay (Department of Chemical Engineering, University of Pittsburgh) Production of PLGA Microspheres Capable of Delivery Peptides or Proteins at a Constant Rate over One Month. Fall 2008 – 2010. – *Successfully defended her PhD in Bioengineering at MIT.*

Nakul Agarwal (Department of Chemical Engineering, Carnegie Mellon University) Production of PLGA Microspheres that Deliver a Protein Antigen at an Approved Vaccine Dosing Schedule. Summer 2008. – *Now Instructor at NSIT Indian Institute of Technology, Delhi.*

Kyle Kovach (Department of Bioengineering, University of Pittsburgh) *In Vitro* and *In Vivo* Testing of Cellulose Hollow Fibers. 2008 – 2009. – *Now DARPA Biomedical Quality Engineer at Case Western Reserve University.*

Patrick Vescovi (Department of Chemical Engineering, University of Pittsburgh) Murine Matrigel Plug Assay for Hollow Fiber Testing. 2008 – 2010. – *Now Project Manager at Venture Engineering, Pittsburgh, PA.*

Brian Freeman (Department of Chemical Engineering, Carnegie Mellon University) Cellulose Hollow Fiber Characterization and Release Properties. 2008 – 2009. – *Now Scientist at StemCell Technologies, Vancouver, Canada.*

Rachael Scalese (Department of Chemical Engineering, University of Pittsburgh) New Methods for Fabrication of Porous Microparticulates using Osmolality. 2007 – 2008. – *Now Senior Engineer at*

Bechtel Marine Propulsion Corp. Naval Defense and Nuclear Security.

Naomi Choodnovskiy (Summer Visiting Student, MIT) Controlled Release of Osteogenic Growth Factors from Microparticle Delivery Systems. 2005. – *Now Science Instructor at United Nations International School.*

Priya Shah (Department of Chemical Engineering, MIT) 3rd Generation PBAE Microparticle Delivery Systems. 2004 – 2005. – *Now Tenure-Stream Assistant Professor at UC Davis Department of Chemical Engineering.*

Sidharth Puram (Department of Bioengineering, MIT) Formulation and Characterization of PBAE Microparticle Delivery Systems. 2001 – 2005. – *Now M.D., Ph.D., Otolaryngologist at Mass. Eye and Ear.*

Mentee Awards:

- Drug Delivery and Translational Research, Best Paper Award, 2022 – **Andrea Schilling**
- University Honors College Research Fellowship, 2021 – **Reetwan Bandyopadhyay**
- Provost's Graduate Fellowship, 2020 – **Ashlee Greene**
- Chancellors Undergraduate Research Fellowship, 2020 – **Reetwan Bandyopadhyay**
- CRS Immuno Delivery Focus Group Trainee Award, 2020 – **Stephen Balmert**
- Hugh Henry Brackenridge Undergraduate Research Fellowship, 2020 – **Benjamin Ahlmark**
- Plastics Pioneers Association Scholarship, 2019 – **Gillian Schriever**
- Marie Curie Postdoctoral Fellowship, 2018 – **Elena Bellotti**
- NIH K-Award (75% salary coverage for 5 years for Young Faculty), 2018 – **Morgan Fedorchak**
- CRS Foundation's Robert Langer Student Travel Grant Award, 2017 – **Jim Fisher**
- Hugh Henry Brackenridge Undergraduate Research Fellowship, 2017 – **Harrison Lawson**
- Hugh Henry Brackenridge Undergraduate Research Fellowship, 2016 – **Gillian Schriever**
- First Prize Poster Presentation, Immunology Department Retreat, 2016 – **Ethan Bassin**
- Howard Hughes Medical Institute Medical Research Fellow, 2016 – **Thiagu Meyyappan**
- ASEE Chemical Engineering Division Best Poster Award, 2015 – **Team: Bodnar, McCarthy, Beckman, Little**
- NIH T32 Fellowship, 2015 – **Michelle Ratay**
- University of Pittsburgh's Big Idea Competition, 1st Prize, 2015 – **Andrew Glowacki**
- NIH STTR Award to Qrono Inc., 2014 – **Sam Rothstein**

- NSF Graduate Research Fellowship, 2014 – **Joshua Mealy**
- James Coull Award, Department of Chemical Engineering, 2014 – **Andrew Glowacki**
- Chancellor’s Distinguished Teaching Fellowship, 2014 – **Meghana Patil**
- University Honors College Health Sciences Fellowship, 2014 – **Felix Nguyen**
- Hugh Henry Brackenridge Undergraduate Research Fellowship, 2014 – **Patrick Bianconi**
- DOD STTR Award to Qrono Inc. – **Sam Rothstein**
- AHA Postdoctoral Fellowship, 2013 – **Jillian Tengood**
- ARCS Foundation National Award, 2013 – **Michelle Ratay**
- American Heart Association PRISE Fellowship, 2013 – **Felix Nguyen**
- Hugh Henry Brackenridge Undergraduate Research Fellowship, 2013 – **Meghana Patil**
- Chancellor’s Undergraduate Research Fellowship, 2012 – **Dhruv Srinivasachar**
- 1st Place in National AIChE Poster Competition, 2012 Annual Meeting – **Joshua Mealy**
- 3rd Place in National AIChE Poster Competition, 2012 Annual Meeting – **Laura Blevins**
- Georgia Berner Research Fellowship, 2012 – **Andrew Zmolek**
- Foerderer Award for Excellence in Research, 2012 – **Jillian Tengood**
- American Institute of Chemical Engineering Professional Promise Award, 2012 – **Andrew Zmolek**
- Society for Biomaterials STAR Award Honorable Mention, 2012 – **Jim Fisher**
- Society for Biomaterials STAR Award Honorable Mention, 2012 – **Stephen Balmert**
- “Best Research” of all Pitt Excel Undergraduate Research Fellows, 2012 – **Amy Howell**
- NIH STTR Award to Qrono Inc, 2012 – Company PI: **Sam Rothstein**
- Research Named “Emerging Trends and Hot Topics” by ARVO, 2012 – **Morgan Fedorchak**
- Chancellors Undergraduate Research Fellowship, 2012 – **Andrew Zmolek**
- First Place – AIChE Regional Poster Competition, 2012 – **Andrew Zmolek**
- Hugh Henry Brackenridge Undergraduate Research Fellowship, 2012 – **Emmaline Blanchard**
- Hugh Henry Brackenridge Undergraduate Research Fellowship, 2012 – **Andrew Zmolek**
- 2nd place – Carnegie Science Awards, 2012 – **Sam Rothstein**
- NIH National Eye Institute Travel Award – ARVO Annual Meeting, 2012 – **Morgan Fedorchak**

- Chancellors Undergraduate Teaching Fellowship, 2012 – **Andrew Zmolek**
- University of Pittsburgh Big Idea Competition, 1st Prize, 2012 – **Jim Fisher**
- Edward B. Stewart and Geraldine J. Stewart Memorial Scholarship, 2011 – **Andrew Zmolek**
- John W. Tierney Scholarship, 2011 – **Julie Fatula**
- NIH T32 Fellowship, 2011 – **Jim Fisher**
- RiMED Postdoctoral Fellowship, 2011 – **Riccardo Gottardi**
- OTERO Postdoctoral Fellowship, 2011 – **Morgan Fedorchak**
- Idea Foundry Life Science Start Up Award, 2011 – **Sam Rothstein**
- Society for Biomaterials STAR Award, 2011 – **Siddharth Jhunjunwala**
- Teaching Assistant of the Year Award, 2011 – **Andrew Glowacki**
- First Place – Poster Competition, MIRM Annual Retreat, 2011 – **Stephen Balmert**
- Finalist, Stifung Charite’s International Enterprise Competition, 2011 – **Sam Rothstein**
- Shio-ming Chang Scholarship, 2011 – **Julie Fatula**
- National Math and Science Young Leader, 2011 – **Julie Fatula**
- NSF Graduate Research Fellowship, 2011 – **Stephen Balmert**
- Bevier Graduate Fellow, 2011 – **Stephen Balmert**
- University of Pittsburgh’s Big Idea Competition, 1st Prize, 2010 – **Sam Rothstein**
- Barry Goldwater Scholarship (honorable mention), 2010 – **Patrick Vescovi**
- Lubrizol Foundation Scholarship, 2010 – **Jenny Kay**
- George Washington Prize, 2010 – **Jenny Kay**
- John W. Tierney Scholarship, 2010 – **Patrick Vescovi**
- First Place - Office of Enterprise Development’s Elevator Pitch Competition, 2010 – **Sam Rothstein**
- First Place - Pittsburgh Enterprise Forum’s Elevator Pitch Competition, 2010 – **Sam Rothstein**
- Department of Chemical Engineering’s Research Assistant of the Year, 2010 – **Sam Rothstein**
- Sunoco Chemicals Award Recipient, 2010 – **Sam Rothstein**
- George Washington Prize, 2010 – **Patrick Vescovi**
- American Heart Association Undergraduate Research Fellowship, 2010 – **Ross Brodsky**

- NIH Ruth Kirschstein F31 Graduate Fellowship, NIDCR, 2010 – **Andrew Glowacki**
- Teaching Assistant of the Year Award, 2010 – **Andrew Glowacki**
- First Place – Poster Competition, MIRM Annual Retreat, 2009 – **Sam Rothstein**
- Teaching Assistant of the Year Award, 2009 – **Andrew Glowacki**
- Teplitz Memorial Scholarship, 2009 – **Patrick Vescovi**
- National Institutes of Health T32 Fellowship, 2009 – **Jillian Tengood**
- National Football Foundation Scholar-Athlete Award, 2009 – **Brian Freeman**
- First Place – Poster Competition, MIRM Annual Retreat, 2008 – **Siddharth Jhunhunwala**
- First Place – Poster Competition, MIRM Annual Retreat, 2008 – **Andrew Glowacki**
- Hugh Henry Brackenridge Undergraduate Research Fellowship, 2008 – **Erin Nichols**
- Mohammad Dubois Graduate Fellowship, 2008 – **Andrew Glowacki**
- Fisher Scientific Biomedical Engineering Research Award, 2008 – **Sam Rothstein**
- Society for Biomaterials STAR Award, 2007 – **Sam Rothstein**
- American Institute of Chemical Engineering Professional Promise Award, 2007 – **Patrick Vescovi**
- CED Student of the Year, 2007 – **Patrick Vescovi**
- National Institutes of Health T32 Fellowship, 2006 – **Sam Rothstein**

PRESENTATIONS

- 182) Balmert, S.C., Carey, C.D., Erdos, G., Korkmaz, E., **Little, S.R.**, Falo, L.D. Microneedle Arrays Engineer the Skin Microenvironment to Promote Antigen-Specific Immune Tolerance. The 6th International Conference on Microneedles (Virtual). November 10 - 11, 2020.
- 181) Balmert, S.C., Carey, C.D., Erdos, G., Korkmaz, E., **Little, S.R.**, Falo, L.D. Microneedle Arrays Engineer the Skin Microenvironment to Promote Antigen-Specific Immune Tolerance. Controlled Release Society Annual Meeting (Virtual). June 29 - July 2, 2020.
- 180) Balmert, S.C., Carey, C.D., Erdos, G., Korkmaz, E., **Little, S.R.**, Falo, L.D. Engineering the Skin with Microneedle Arrays to Induce Immune Tolerance. Society for Investigative Dermatology Annual Meeting (Virtual). May 13 - 16, 2020.
 ***This abstract was also published: *Journal of Investigative Dermatology* 140(7):S11.
- 179) Schilling, A.L., Carcella, A.R., Wang, E.W, Lee, S., **Little, S.R.** “Promoting Sinonasal Cilia Regeneration with Sustained Retinoid Delivery.” Controlled Release Society Annual Meeting (Virtual). July 25 – 29, 2021.

- 178) Balmert, S.C., Carey, C.D., Erdos, G., Korkmaz, E., **Little, S.R.**, Falo, L.D. Microneedle Arrays Engineer the Skin Microenvironment to Promote Antigen-Specific Immune Tolerance. Microneedles 2020 Online Conference. November 10 - 11, 2020.
- 177) Yonet-Tanyeri, N., Falo, L.D., **Little, S.R.** A Comparative Study on Fabrication Methods for Microparticle-Based Drug Delivery Systems. American Association of Pharmaceutical Scientists PHARMSCI 360 Annual Meeting (Virtual). October 26-November 5, 2020.
- 176) Greene, A., Shehabeldin, M., Ratay, M., Sfeir, C., **Little, S.R.** Extended Release (Regulatory T Cell Inducing) Microsphere Formulation for the Treatment of Periodontal Disease. American Association of Pharmaceutical Scientists PHARMSCI 360 Annual Meeting (Virtual). October 26 - November 5, 2020.
- 175) Schilling, A.L., Wang, E.W., Lee, S. Little, S.R. Local Corticosteroid Delivery to the Paranasal Sinuses via a Thermoresponsive and Extended Release System. American Association of Pharmaceutical Scientists PHARMSCI 360 Annual Meeting (Virtual). October 26 - November 5, 2020.
- 174) Schilling, A.L., Moore, J., Kulahci, Y. **Little, S.R.**, Wang, E.W., Lee, S. Evaluating Inflammation in an Obstruction-based Chronic Rhinosinusitis Model in Rabbits. 66th Annual Meeting of the American Rhinologic Society, Virtual, Sept. 10, 2020
- 173) Greene, A., Shehabeldin, M., Ratay, M., Sfeir, C., **Little, S.R.** Treatment of Periodontal Disease through an Immunomodulatory (Regulatory T Cell Inducing) Microsphere Formulation. Controlled Release Society Annual Meeting. Las Vegas, NV (Virtual Meeting due to COVID19). June 30, 2020.
- 172) Bassin, E.J., Buckley, A.R., Piganelli, J.D., **Little S.R.** TRI-MP treatment for the prevention of collagen-induced arthritis. On-demand talk presented at: Controlled Release Society Annual Meeting. Las Vegas, NV (Virtual Meeting due to COVID19). June 30, 2020.
- 171) Yonet-Tanyeri, N., Falo, L.D., **Little, S.R.**, Microfluidic systems affect bioactivity of therapeutic agents. Controlled Release Society Annual Meeting. Las Vegas, NV (Virtual Meeting due to COVID19). June 30, 2020.
- 170) Schilling, A.L., Kulahci, Y., Moore, J., Wang, E.W, Lee, S. **Little, S.R.** Local, Sustained Steroid Delivery for Treatment of Chronic Rhinosinusitis. Controlled Release Society Annual Meeting. Las Vegas, NV (Virtual Meeting due to COVID19). June 29, 2020.
- 169) Balmert, S.C., Carey, C.D., Erdos, G., Korkmaz, E., **Little, S.R.**, Falo, L.D. Microneedle Arrays Engineer the Skin Microenvironment to Promote Antigen-Specific Immune Tolerance. Controlled Release Society Annual Meeting. Las Vegas, NV (Virtual Meeting due to COVID19). June 30, 2020.
- 168) Balmert, S.C., Carey, C.D., Erdos, G., Korkmaz, E., **Little, S.R.**, Falo, L.D. Engineering the Skin with Microneedle Arrays to Induce Immune Tolerance. Society for Investigative Dermatology Annual Meeting. Scottsdale, AZ (Virtual Meeting due to COVID19). May 2020.

- 167) Rodriguez, B., Lorentz, K., Gupta, P., Cunnane, E., Shehabeldin, M., Fedorchak, M., Weinbaum, J., **Little, S.R.**, Sfeir, C., Mandal, B., Vorp, D.A. In Vivo Response to Cytokine Encapsulated Microparticles in Vascular Grafts. Biomedical Engineering Society Conference. Philadelphia, PA, USA, October 19, 2019.
- 166) Balmert, S.C., Carey, C.D., Erdos, G., **Little, S.R.**, Falo, L.D. Microneedle Arrays Engineer the Skin Microenvironment to Promote Allergen Tolerance. Society for Investigative Dermatology Annual Meeting. Chicago, IL, May 2019.
- 165) Lorentz, K.L., Gupta, P., Cunnane, E.M., Shehabeldin, M., Fedorchak, M.V., Weinbaum, J.S., Sfeir, C.S., Mandal, B., **Little, S.R.**, Vorp, D.A. Cytokine mimicking microspheres-loaded silk scaffolds for vascular tissue engineering: In-vitro and in-vivo assessment (Poster Presentation), 18th Annual McGowan Institute Scientific Retreat. Pittsburgh, PA, March 11 - 12, 2019.
- 164) Lorentz, K.L., Gupta, P., Cunnane, E.M., Shehabeldin, M., Fedorchak, M.V., Weinbaum, J.S., Sfeir, C.S., Mandal, B., **Little, S.R.**, Vorp, D.A. Cytokine mimicking microspheres for use in porous scaffolds. (Oral Presentation), 18th Annual McGowan Institute Scientific Retreat. Pittsburgh, PA, March 11 - 12, 2019.
- 163) Acharya, A.P., Grene, A., **Little, S.R.**, Sezginel, K.B., Wilmer, C.E. Ultrahigh and Multiple Anti-Tuberculosis Drugs Loaded BioMOFs Clear Mycobacterium Tuberculosis Infection in Macrophages. Annual Meeting of the American Institution of Chemical Engineers. Pittsburgh, PA, October 2018.
- 162) Acharya, A.P., Sinha, M., Ratay, M.L., Ding, X., Balmert, S.C., Workman, C.J., Wang, Y., Vignali D.A.A., **Little, S.R.** Localized Multi-component Delivery Platform Generates Local and Systemic Anti-tumor Immunity. Next Generation Biomaterials – Biomaterials VI, Materials Science and Technology, Columbus, OH, October 2018.
- 161) Greene, A., Shehabeldin, M., Ratay, M., Sfeir, C., **Little, S.R.** Local Induction of Endogenous Regulatory T Cells for the Treatment of Periodontal Disease. Annual Meeting of the American Institution of Chemical Engineers. Pittsburgh, PA, October 2018.
- 160) Desai, S., Patel, S.K., Greene, A.C., MacPherson, J.S., Basha, I.T., Zou, Y., Rothstein, S.N., Sfeir, C.S., **Little, S.R.**, Rohan, L.C. Development of Quality Control and Biorelevant Dissolution Methods for PLGA Microparticles Used in Periodontitis. American Association of Pharmaceutical Scientists (AAPS) 10th Annual Pharmaceutical Sciences Research Symposium, West Virginia University, Morgantown, WV, July 27, 2018.
- 159) Patel, S., Greene, A., MacPherson, J., Basha, I., Desai, S., Zou, Y., Sfeir, C.S., Rothstein, S.N., **Little, S.R.**, Rohan, L.C. Design, Fabrication, and Evaluation of a Small Volume Biorelevant Dissolution Apparatus for Extended Release Periodontal Microparticles. Controlled Release Society Annual Meeting. New York, NY. July 22, 2018.
- 158) Balmert S.C., Carey C.D., Erdos G., **Little S.R.**, Falo L.D. Engineering the Skin Microenvironment to Promote Antigen Specific Tolerance. Tumor, Transplant, and Tolerance Retreat. Pittsburgh, PA. May 30, 2018.

- 157) Greene, A., Yoshizawa, S., Ratay, M., Sfeir, C., **Little, S.R.** Multi-Factor Microparticle Formulation for Local Induction of Regulatory Lymphocytes and Treatment of Periodontal Disease, Annual Meeting of the American Institution of Chemical Engineers. Minneapolis, MN, October 2017.
- 156) Bellotti, E., Fedorchak, M.V., **Little, S.R.** Development of an Engineered Thermoresponsive pNIPAAm Hydrogel for the Topical Retention of Controlled Release Ocular Therapeutics, Annual Meeting of the Controlled Release Society. Boston, MA, July 2017.
- 155) Ratay, M., Balmert, S., Acharaya, A., Greene, A., Meyyappan, T., **Little, S.R.** TRI Microspheres prevent key signs associated with Dry Eye Disease in an experimental inflammatory model, Controlled Release Society, 44th Annual Meeting & Exposition of the Controlled Release Society. Boston, MA, July 2017.
- 154) Fisher, J.D., Zhang, W., Schweizer, R., Dong, L., Aral, A., Zhang, Z., Komatsu, C., Erubas, V., Unadkat, J., Diaz-Perez, J., Solari, M., Gorantla, V.S., **Little, S.R.** Regulatory T Cell Enriching Microparticles for Promoting Vascularized Composite Allotransplant Survival, Controlled Release Society 2017 Annual Meeting. Boston, MA, July 2017.
- 153) Fuller, T., Acharya, A.P., Bhaskar, G., Yu, M., **Little, S.R.**, Tarin, T. Evaluation of E-cigarettes Users Urine for Known Bladder Carcinogens, Annual Meeting of the American Urological Association. Boston, MA, May 2017.
- 152) Ratay, M., Balmert, S., Acharaya, A., Greene, A., Meyyappan, T., **Little, S.R.** TRI Microspheres prevent key signs associated with Dry Eye Disease in an experimental inflammatory model, Bioengineering Day. University of Pittsburgh, Pittsburgh, PA, April 2017.
- 151) Patel, S.K., Greene, A.C., Rothstein, S., Zou, Y., Choi, S., Glowacki, A., Gottardi, R., Sfeir, C.S., **Little, S.R.**, Rohan, L.C. Application of USP 4 Dissolution Apparatus to Assess Dissolution of Microparticles for Periodontal Disease, American Associate of Pharmaceutical Scientists (AAPS) Annual Meeting. Denver, CO, November 2016.
- 150) Sondh, I.S., Nichols, D.A., Bayer, E.A., Gottardi, R., **Little S.R.** Development of a bioreactor aimed at designing spatial and temporal drug delivery profiles for bone regeneration protocols, Biomedical Engineering Society Annual Meeting. Minneapolis. MN, October 2016.
- 149) Sondh, I.S., Nichols, D.A., Bayer, E.A., Gottardi, R., **Little S.R.** Development of a bioreactor aimed at designing spatial and temporal drug delivery profiles for bone regeneration protocols, 2016 Summer Research Symposium. Duquesne University, Pittsburgh PA, August 2016.
- 148) Guaragno, M., Glowacki, A., Acharya, A., Polat, J., Fedorchak, M., **Little, S.R.** Biomimetic Drug Delivery of a Chemokine to recruit endogenous Regulatory T cells (Tregs) to abrogate Dry Eye Disease, Bioengineering Day. University of Pittsburgh, Pittsburgh, PA, April 2016.
- 147) Fisher, J.D., Schweizer, R., Unadkat, J.V., Fries, A., Komatsu, C., Oksuz, S., Solari, M.G., Davis, M., Gorantla, V.S., **Little, S.R.** Biomimetic Microparticles can Establish Dominant Tolerance in Vascularized Composite Allotransplantation via Endogenous Regulatory T Cell Enrichment, (Oral and Poster Presentation), 15th Annual McGowan Institute Retreat. Nemaquin Woodlands,

PA, March 2016.

- 146) Balmert, S.C., Carey, C.D., Faló, L.D., **Little, S.R.** Sustained Delivery of Treg-Inducing Factors to Skin Draining Lymph Nodes Suppresses Allergic Contact Dermatitis, US-Japan Symposium on Drug Delivery Systems. Lahaina, HI, December 2015.
- 145) Guaragno, M., Glowacki, A., Fedorchak, M., Polat, J., Acharaya, A., **Little, S.R.** Drug Delivery of a Chemokine to Recruit Endogenous Regulatory T-Cells (Tregs) in a Model of Dry Eye Disease. US-Japan Symposium on Drug Delivery Systems, Lahaina, HI, December 2015.
- 144) Pezzone, D., Krawiec, M., Josowitz, A., Fedorchak, M.V., D'Amore, A., Weinbaum, J., Wagner, W., **Little, S.R.**, Vorp, D. Seeding of Microspheres into A Porous Tubular Scaffold as A Tissue Engineered Vascular Graft. Biomedical Engineering Society (BMES) Annual Meeting, Tampa, FL, October, 2015.
- 143) Josowitz, J., Krawiec, M., Fedorchak, M.V., D'Amore, A., Weinbaum, J., Rubin, J., Wagner, W., **Little, S.R.** Vorp, D. Characterizing The Seeding Distribution of Microspheres in Tissue Engineered Vascular Grafts'. Biomedical Engineering Society (BMES) Annual Meeting, Tampa, FL, October, 2015.
- 142) Gottardi, R., Bianconi, P.A., Manner, P.G. Alexander, R.S. Tuan, R.S., **Little, S.R.** Prevention of Articular Cartilage Calcification by Controlled Release of Dorsomorphin. Penn Orthopaedics 2015 Cartilage Repair Symposium, Philadelphia, PA, May 2015.
- 141) Guaragno, M., Gottardi, R., Fedorchak, M., Tan, S., Di Maio, R., Conway, J., Kuksenok, O., Balazs, A.C., **Little, S.R.** Zero Dimensional Single-Walled Nanotubes as Synthetic Ion Channel. Bioengineering Day, University of Pittsburgh, Pa, April 2015.
- 140) Gottardi, R., Bianconi, P.A., Manner, P.A., Alexander, P.G., Tuan, R.S., **Little, S.R.** Prevention of Articular Cartilage Calcification by Controlled Release of Dorsomorphin. Penn Orthopedics 2015 Cartilage Repair Symposium, Philadelphia, PA, April 2015.
- 139) Fedorchak, M.V., Conner, I.P., Schuman, J.S., **Little, S.R.** Preclinical testing of a novel drug delivery system for glaucoma. Society for Biomaterials (SFB) Annual Meeting, Charlotte, NC, April 2015.
- 138) Lash, M.H., Jordan, J.J., McCarthy J.J., **Little, S.R.**, Particle-based Scaffolds with Macro- and Micro-Scale Hierarchy, McGowan Institute for Regenerative Medicine Annual Scientific Retreat, Nemecolin, PA, March 2015.
- 137) Fisher, J.D., Schweizer, R., Unadkat, V., Komatsu, C., Oksuz, S., Thomson A.W., Solari, M., Gorantla, V.S., **Little, S.R.** Regulatory T Cell Enriching Microspheres Can Establish Dominant Tolerance in Vascularized Composite Tissue Allotransplants. McGowan Institute for Regenerative Medicine Annual Retreat, Nemaconlin Woodlands PA, March 2015.
- 136) Bayer, E., Fedorchak, M.V., Roy, A., Kumta, P., **Little, S. R.** Sequential Growth Factor Delivery for Bone Tissue Regeneration, McGowan Institute for Regenerative Medicine Annual Scientific Retreat, Nemaconlin, PA, March 2015.
- 135) Guaragno, M., Gottardi, R., Fedorchack, M., Tan, S., Balazs, A.C., **Little, S.R.** Zero-dimensional Single-Walled Nanotubes as Synthetic Ion Channels. McGowan Institute for Regenerative

Medicine Scientific Retreat, Farmington, PA, March 2015.

- 134) Fedorchak, M.V., Conner, I.P., Schuman, J.S., **Little, S.R.** Update on the Monthly Eye Drop for glaucoma. McGowan Institute for Regenerative Medicine (MIRM) Annual Retreat, March 2015, Farmington, PA.
- 133) Garlet, G.P., **Little, S.R.**, MyD88 mediates inflammatory and healing/regenerative responses to classic biomaterials (Ti): evidences for DAMPs as host response triggers. Hilton Head Regenerative Medicine Workshop, Hilton Head SC, March 13-16, 2015.
- 132) Fedorchak, M.V., Conner, I.P., Schuman, J.S., **Little, S.R.** The Monthly Eye Drop: Development of a novel controlled release system for glaucoma. Association for Ocular Pharmacology and Therapeutics (AOPT) Biennial Meeting, Charleston, SC, February 2015.
- 131) Lash, M.H., Jordan, J.J., Fedorchak, M.V., **Little, S.R.**, McCarthy J.J., Fabrication of (Non-) Colloidal Crystals with Customizable Hierarchy, AIChE Annual Meeting, Atlanta, GA, November 2014.
- 130) Lash, M.H., Fedorchak, M.V., McCarthy, J.J., **Little, S.R.**, Fabrication of (Non-)Colloidal Crystals for Hierarchically-Ordered Materials Development, Presented at AIChE Annual Meeting, Atlanta, GA, November 2014.
- 129) Fisher, J.D., Schweizer, R., Unadkat, V., Komatsu, C., Oksuz, S., Thomson A.W., Solari, M., Gorantla, V.S., **Little, S.R.** Biomimetic Microparticles can Establish Dominant Tolerance in Vascularized Composite Allotransplant via Endogenous Regulatory T Cell Enrichment. 4th Biennial Meeting of the American Society of Reconstructive Transplantation, Chicago IL, November 21-22, 2014.
- 128) Lash, M.H., Fedorchak, M.V., McCarthy, J.J., **Little, S. R.**, Fabrication and Characterization of (Non-)Colloidal Crystals with Customizable Hierarchy (poster), AIChE Annual Meeting, Atlanta GA, October 2014.
- 127) Glowacki, A.G., Yoshizawa, S., Khanwilkar, P., Green, C., Sfeir, C., **Little, S.R.**, Treating the root cause of gum disease. Pennsylvania Bio, Philadelphia, PA, October 13-14th 2014.
- 126) Lash, M.H., Fedorchak, M.V., McCarthy, J.J., **Little, S. R.**, Fabrication of (Non-)Colloidal Crystals for Hierarchically-ordered Materials Development, AIChE Annual Meeting, Atlanta GA, October 2014.
- 125) Patil, M.A., Gottardi, R., Ulici, V., **Little, S.R.**, Tuan, R.S. Three-Dimensional Cell Culture Effects on Chondrogenesis of Kartogenin-Treated hMSCs. BMES Annual Meeting, San Antonio, TX, October 2014.
- 124) Bianconi, P.A., Gottardi, R., Ulici, V., Tuan, R.S., **Little, S.R.** Preventing Articular Cartilage Calcification by the Controlled Release of Dorsomorphin. Biomedical Engineering Society Annual Meeting, San Antonio, TX, October 2014.
- 123) Fisher, J.D., Schweizer, R., Unadkat, V., Komatsu, C., Oksuz, S., Solari, M., Gorantla, V.S., **Little, S.R.** Enrichment of Suppressive Lymphocytes via Biomimetic Constructs Promotes Immune Tolerance in Vascularized Composite Allotransplantation. 31st Annual Meeting of The Northeastern Society of Plastic Surgeons. Providence RI, September 12-14, 2014.

- 122) Bodnar, C.A., Beckman, E.J., McCarthy, J.J., **Little, S.R.** Work in Progress: A Vision for the First "Product Innovation Sequence" for Chemical Engineers. ASEE Annual Meeting, Indianapolis, IN, June 2014.
- 121) Fisher, J.D., Schweizer, R., Unadkat, V., Komatsu, C., Oksuz, S., Solari, M., Gorantla, V.S., **Little, S.R.** Tumor Inspired Microparticle Formulations for Preventing Vascularized Composite Allotransplant Rejection. University of Pittsburgh Department of Plastic Surgery Resident Research Day, Pittsburgh PA, June 27th, 2014.
- 120) Fisher, J.D., Unadkat J.V., Schweizer, R., Komatsu, C., Oksuz, S., Solari, M., Gorantla V.S., **Little, S.R.** Emulating Nature's Genius: Engineered Biomimetic Formulations for Suppressing Rejection in Vascularized Composite Allotransplantation. Ohio Valley Society of Plastic Surgeons 57th Annual Meeting, Greenbrer WV, June 5-7, 2014.
- 119) Bayer, E., Blanchard, E., Fedorchak, M., Roy, A., Kumta, P., **Little, S.R.** Choeographing Regeneration with BoneSCRIPT. University of Pittsburgh Department of Pathology Research Day. Pittsburgh, PA, May 2014.
- 118) Fisher, J.D., Schweizer, R., Unadkat J.V., Fries, A., Komatsu, C., Oksuz, S., Solari, M.G., Davis, M., Gorantla, V.S., **Little, S.R.** Establishing Dominant Tolerance in Vascularized Composite Allotransplantation via Biomimetic Lymphocyte Enriching Microparticles. 60^h Annual Scientific Meeting of the Robert H. Ivy Society of Plastic Surgeons, Bedford PA, May 17th, 2014.
- 117) Guaragno, M., Gottardi, R., Fedorchak., M., Roy., A., Kumta., P., **Little, S.R.** Fluorescently Labeled Single-Walled Carbon Nanotubes for Synthetic Ion Channels. Department of Bioengineering Day, University of Pittsburgh, Pa, April 2014
- 116) Lash, M.H., Jordan, J.C., McCarthy, J.J., Fedorchak, M.V., **Little, S. R.**, Self-Assembly of Binary Colloidal Crystals for the Production of Inverted Crystalline Scaffolds (poster), McGowan Institute for Regenerative Medicine Annual Retreat, Farmington, PA, March 2014.
- 115) Gottardi, R., Bianconi, P., Manner, P., Alexander, P., Tuan, R.S., **Little, S.R.**, Prevention of Articular Cartilage Hypertrophy by Controlled Release of Dorsomorphin, McGowan Institute for Regenerative Medicine Annual Scientific Retreat, Nemaocolin, PA, March 2014.
- 114) Mahoney, C., Fedorchak, M. V., Rothstein, S., **Little, S. R.** Engineering Antigen Delivery Kinetics in Microparticle-based Vaccines for the Development of Protective Immunity, McGowan Institute of Regenerative Medicine Annual Scientific Retreat, Nemaocolin, PA, March 2014.
- 112) Bayer, E., Blanchard, E., Fedorchak, M., Roy, A., Kumta, P., **Little, S.R.** Choeographing Regeneration with BoneSCRIPT. McGowan Institute for Regenerative Medicine annual meeting. Farmington, PA, March 2014.
- 113) Glowacki, A. J., Yoshizawa, S., Jhunhunwala, S., Vieira, A. E., Garlet, G. P., Sfeir, C., **Little, S. R.** Treating periodontal disease by targeting immune dysfunction. McGowan Institute for Regenerative Medicine Annual Scientific Retreat, Nemaocolin, PA, March 2014.
- 112) Guaragno, M., Gottardi, R., Fedorchack, M., Tan, S., Balazs, A., **Little. S.R.** Fluorescent Single-Walled Nanotubes for Synthetic Ion Channels, McGowan Institute for Regenerative Medicine Annual Scientific Retreat, Nemaocolin, PA, March 2014.
- 111) Lash, M.H., **Little, S. R.**, McCarthy J. J. Artificial Thermalization of Non-Brownian Microparticles for the Fabrication of Close-Packed Colloidal Crystals, AIChE Annual Meeting, San Francisco, CA, November 2013.

- 110) Patil, M., Gottardi, R., Velankar, S.S., **Little, S.R.** Carbon Nanotube Thin Film via Interfacial Film Climbing: A Potential Platform for Cell Growth. BMES Annual Meeting, Seattle, WA, September 2013.
- 109) Gottardi, R., Hwang, M.P., Simson, M., Manner, P.A., Tan, J., Alexander, P.G., **Little, S.R.**, Tuan, R.S. Autologous Stem Cell Recruitment for Articular Cartilage Regeneration. TERMIS-AM: Annual Conference, Las Vegas, NV, July 2013.
- 108) Bayer E, DeSantis D, Blanchard E, Fedorchak M, Roy A, Kumta P, **Little S.R.** Composite Micro-CaP Scaffold for Bone Regeneration. University of Pittsburgh Department of Pathology Research Day. Pittsburgh, PA, May 2013.
- 107) Gottardi, R., Simson, M., Manner, P., Tan, J., Alexander, P., Tuan, R.S., **Little S.R.** Autologous Stem Cell Recruitment for Articular Cartilage Regeneration, McGowan Institute for Regenerative Medicine Annual Scientific Retreat, Nemacon, PA, April 2013.
- 106) Lash, M.H., McCarthy J. J., **Little, S.R.**, Fabrication of Highly Ordered and Close Packed Colloidal Crystals from Large Microparticles for Biomedical Applications (poster), McGowan Institute for Regenerative Medicine Annual Retreat, Farmington, PA, March 2013.
- 105) Bayer E, DeSantis D, Blanchard E, Fedorchak M, Roy A, Kumta P, **Little S.R.** Composite Micro-CaP Scaffold for Bone Regeneration. McGowan Institute for Regenerative Medicine annual meeting. Farmington, PA, March 2013.
- 104) Balmert S.C., Vu JR, Jhunjhunwala S., Raimondi G., Thomson A.W., Falo L.D., **Little S.R.** Suppression of Local Inflammation with Engineered Treg-Inducing Microparticle Systems. McGowan Institute for Regenerative Medicine Annual Scientific Retreat, Farmington, PA, March 2013.
- 103) Glowacki, A. J., Yoshizawa, S., Jhunjhunwala, S., Vieira, A. E., Garlet, G. P., Sfeir, C., **Little, S. R.** Preclinical evaluation of regulatory lymphocyte recruiting microparticles for the prevention of periodontitis. McGowan Institute for Regenerative Medicine Annual Scientific Retreat, Farmington, PA, March 2013.
- 102) Hong, Y., Fu, H., **Little, S.R.**, Wagner, W.R. Developing an Enzymatically-Triggered, Rapidly Degradable Polyurethane Hollow Fiber Membrane. BMES Annual Meeting, Atlanta, GA, October 2012.
- 101) Patil, M., Gottardi, R., Velankar, S.S., **Little, S.R.** Interfacial Interactions of Zero-Dimensional Carbon Nanotubes and Their Application as Thin Films: A Potential Platform for Cell Growth. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 100) Zmolek, A., Balmert, S.C., Glowacki, A.J., Rothstein, S., Wokpetah, J., **Little, S.R.** Analyzing the Release Kinetics of 'Sticky' Peptides from PLGA (Poly(lactic-co-glycolic acid) Microspheres. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 99) Mealy, J.E., Fedorchak, M.V., **Little, S.R.** Development of a Controlled Release Ocular Insert for Brimonidine Tartrate. AIChE Undergraduate Student Poster Session, Pittsburgh, PA, October 2012.
- 98) Li, S., Lash, M.H., **Little, S.R.**, McCarthy, J.J. Dissipative Particle Dynamics Simulation of Sonication-Mediated Particle Interactions. AIChE Annual Meeting, Pittsburgh, PA, October 2012.

- 97) Cugini, A., Fedorchak, M.V., **Little, S.R.** Developing a Hydrogel Based Ocular Insert for the Treatment of Glaucoma. Science 2012, Pittsburgh, PA, October 2012.
- 96) Patil, M., Gottardi, R., Velankar, S.S., **Little, S.R.** Interfacial Interactions of Zero-Dimensional Carbon Nanotubes and Their Application as Thin Films: A Potential Platform for Cell Growth. Science 2012, Pittsburgh, PA, October 2012.
- 95) Howell, A., Balmert, S.C., Lash, M.H., Glowacki, A.J., **Little, S.R.** Patchy Particles: Inducing Surface Anisotropy for a Biomimetic Immune Synapse. Science 2012, Pittsburgh, PA, October 2012.
- 94) Gottardi, R., Stolz, M., Raiteri, R., Dueggelin, M., Lozito, T., Alexander, P., **Little, S.R.** Tuan, R.S. Cartilage Degeneration and Repair – Seeing and Operating at the Nanoscale. Science 2012, Pittsburgh, PA, October 2012.
- 93) Zmolek, A., Balmert, S.C., Glowacki, A.J., Rothstein, S., Wokpetah, J., **Little, S.R.** Analyzing the Release Kinetics of ‘Sticky’ Peptides from PLGA (Poly(lactic-co-glycolic) acid) Microspheres. Science 2012, Pittsburgh, PA, October 2012.
- 92) Blanchard, E., DeSantis, D., Gottardi, R., and **Little, S.R.** Developing a Controlled, Sequential Delivery System of Alginate Microparticles for the Release of Positively Charged Growth Factors. Science 2012, Pittsburgh, PA, October 2012.
- 91) Glowacki, A.J., Yoshizawa, S., Sfeir, C.S., Zack, J., **Little, S.R.** Translation of Periodontal Treatments that Restore Immunological Homeostasis. University of Pittsburgh First Look Technology Showcase, Pittsburgh, PA, October 2012.
- 90) Glowacki, A.J., Yoshizawa, S., Jhunjhunwala, S., Garlet, G.P., Sfeir, C.S., **Little, S.R.** Preclinical Evaluation of Treg Recruiting Microparticles for the Treatment of Periodontitis. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 89) Knab, T.D., Rothstein, S.N., **Little, S.R.**, Parker, R.S. System Identification and Frequency Response Techniques for the Design of Controlled Release Drug Delivery Systems. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 88) Lash, M.H., Kamalssanan, K., Li, S., McCarthy J.J., **Little, S.R.** Fabrication of Highly Ordered and Close Packed Colloidal Crystals from Large Microparticles. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 87) Fedorchak, M.V., Wingard, J.B., Medina, C.A., Albeiruti, E., Schuman, J.S., **Little, S.R.** 28-Day Ocular Delivery of Brimonidine Tartrate from Rationally Designed, Degradable Microparticles in a Rabbit Model. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 86) Rothstein, S.N., **Little, S.R.** Critical Quality Attributes (CQAs) of Biodegradable Polymer Matrices and Particles: Impact of a Recent Mathematical Model. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 85) Wu, T., Ngobi, L.M., Rothstein, S.N., Yutzy, S., Wiener, E., Parker, R.S., **Little, S.R.** Magnetic Resonance Imaging as a Powerful Tool for Visualizing Controlled Release from Biodegradable Microparticles. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 84) Fisher, J.D., Jhunjhunwala, S., Thomson, A.T., Unadkat, J.V., **Little, S.R.** Biomimetic Sustained Release Formulations for Suppressing Composite Tissue Transplant Rejection. Society for Biomaterials Annual Conference, New Orleans LA, October 2012.

- 83) Fisher, J.D., Jhunjhunwala, S., Thomson, A.T., Unadkat, J.V., **Little, S.R.** Biomimetic Sustained Release Systems for Regulating Inflammation in Composite Tissue Transplant Rejection. AIChE Annual Conference, Pittsburgh, PA, October 2012.
- 82) Kamalasan, K., Gottardi, R., Tan, S., Chen, Y., Godugu, B., Rothstein, S.N., Balazs, A.C., Star, A., **Little, S.R.** "Zero Dimensional" Single Walled Carbon Nanotubes. AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 81) Balmert, S.C., Jhunjhunwala, S., Raimondi, G., Vu, J.R., Thomson, A.W., Falo, L.D., **Little, S.R.** Controlled Release Systems to Increase Local Numbers of Regulatory T Cells and Suppress Contact Hypersensitivity. Society for Biomaterials 2012 Fall Symposium, New Orleans, LA, October 2012.
- 80) Balmert, S.C., Jhunjhunwala, S., Raimondi, G., Vu, J., Falo, L., Thomson, A.W., **Little, S.R.** Sustained Release Systems to Locally Expand Regulatory T Cell Populations and Suppress Inflammation, AIChE Annual Meeting, Pittsburgh, PA, October 2012.
- 79) Hong, Y., **Little, S.R.**, Wagner, W.R. Developing an Enzymatically-Trigged, Rapidly Degradable Polyurethane Hollow Fiber Membrane. Biomedical Engineering Society Annual Fall Meeting, Atlanta, GA, October 2012.
- 78) Raimondi, G., Jhunjhunwala, S., Nichols, E.E., Thomson, A.W., **Little, S.R.** All-trans Retinoic Acid and Rapamycin Synergize with Transforming Growth Factor- β 1 to Induce Regulatory T Cells but Confer Distinct *In Vivo* Migratory Capacities. Joint Annual Meeting of the International Cytokines Society and International Society for Interferon and Cytokine Research, Geneva, Switzerland, September 2012.
- 77) Yoshizawa, S., Glowacki, A.J., **Little, S.R.**, Sfeir, C.S. Preclinical Evaluation of Treatments for Periodontitis that Recruit Regulatory T-cells. International Association for Dental Research, Iguacu Falls, Brazil, June 2012.
- 76) Fedorchak, M.V., Wingard, J.B., Medina, C.A., Albeiruti, E., Schuman, J.S., **Little, S.R.** 28-day Ocular Delivery of Brimonidine Tartrate from Rationally Designed Degradable Microparticles in a Rabbit Model. Association for Research in Vision and Ophthalmology Annual Meeting, Ft. Lauderdale, FL, May 2012.
- *Selected as an ARVO "Emerging Trends and Hot Topics"*
- 75) Zmolek, A., Balmert, S.C., Glowacki, A.J., Rothstein, S., Wokpetah, J., **Little, S.R.** Defining the Role of Peptide Charge on Release Kinetics from PLGA (Poly(lactic-co-glycolic) acid) Microspheres. AIChE Regional Conferences 2012, Hoboken, NJ, April 2012.
- 74) Zmolek, A., Balmert, S.C., Glowacki, A.J., Rothstein, S.N., Wokpetah, J., **Little, S.R.** Defining the Role of Peptide Charge on Release Kinetics from PLGA (Poly(lactic-co-glycolic) acid) Microspheres. URC-PA: Undergraduate Research at the Capitol, Harrisburg, PA, March 2012.
- 73) Fedorchak, M.V., Wingard, J.B., Medina, C.A., Albeiruti, E., Schuman, J.S., **Little, S.R.** Combating Blindness with Convenient and Comfortable Glaucoma Treatments. McGowan Institute for Regenerative Medicine Scientific Retreat, Farmington, PA, March 2012.
- 72) Lash M.H., Kamalasanan K., McCarthy J.J., **Little S.R.** Engineering Particles to Rationally Assemble Using Surface Anisotropy-Based Information. McGowan Institute for Regenerative Medicine Scientific Retreat, Farmington, PA, March 2012.
- 71) Fisher, J.D., Jhunjhunwala, S., Thomson A.T., **Little, S.R.** Biomimetic Sustained Release

Formulations for Suppressing Composite Tissue Transplant Rejection Via Naïve, Regulatory T Cells. McGowan Institute for Regenerative Medicine Scientific Retreat, Farmington, PA, March 2012.

- 70) Balmert S.C., Jhunjunwala S., Raimondi G., Dons E., Nichols E.E., Thomson A.W., **Little S.R.** Biomimetic Microparticle Systems to Promote Local Immune Tolerance, McGowan Institute for Regenerative Medicine Scientific Retreat. Farmington, PA, March 2012.
- 69) Raimondi, G., Jhunjunwala, S., Brandisher, G., Thomson, A.W., **Little, S.R.** Biomimetic Controlled Release of CCL22 for *In Vivo* Recruitment of Regulatory T Cells and Prolongation of Allograft Survival. American Transplant Congress, Philadelphia, PA, May 2011.
- 68) Kamalasanan, K., Jhunjunwala, S., Swanson, A., Wu, J., Gao, D., **Little, S.R.** Synthetic Cells with Ordered Protein Patches. PINCE Research Fair, Pittsburgh, PA, May 2011.
- 67) Jhunjunwala, S., Raimondi, G., Nichols, E., Thorne, S., Thomson, A.W., **Little, S.R.** Biomimetic Sustained Release Formulation for Modeling Local Immune Responses. Materials Research Society, San Francisco, CA, April 2011.
- 66) Kamalasanan, K., **Little, S.R.** Synthetic Cells with Ordered Protein Patches. Society for Biomaterials Annual Meeting, Orlando, FL, April 2011.
- 65) Jhunjunwala, S., Raimondi, G., Nichols, E., Thorne, S.H., Thomson, A.W., **Little, S.R.** Controlled Release Formulations for Increasing Local Numbers of Regulatory T Cells. Society for Biomaterials Annual Meeting, Orlando, FL, April 2011.
- 64) Glowacki, A.J., Jhunjunwala, S., Garlet, G., Sfeir, C.S., **Little, S.R.** Recruiting Regulatory T-cells to Treat Periodontitis and Promote Regeneration. AADR Annual Meeting, San Diego, CA, March 2011.
- 63) Glowacki, A.J., Jhunjunwala, S., Garlet, G., Sfeir, C.S., **Little, S.R.** Recruiting Regulatory T-cells to Treat Periodontitis and Promote Regeneration. McGowan Institute for Regenerative Medicine, Farmington, PA, March 2011.
- 62) Tengood, J., Federspiel, W.J., **Little, S.R.** Release of Angiogenic Growth Factors from Porous Hollow Fiber Membranes. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2011.
- 61) Wu, T., Ngobi, L., Rothstein, S.N., Parker, R., **Little, S.R.** A Compartmental Model of Controlled Release that Accounts for Multiple Barriers to Micro-Needle-Based Transdermal Drug Delivery. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2011.
- 60) Ngobi, L., Rothstein, S.N., **Little, S.R.**, Parker, R. Exploring New Techniques for “Fingerprinting” the Barriers to Controlled Release *In Vivo*. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2011.
- 59) Balmert S.C., Jhunjunwala S., **Little S.R.** Biomimetic Microparticle-Based System to Induce Local Immune Tolerance *In Vivo*. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2011.
- 58) Hwang, M.P., **Little, S.R.** Controlled Delivery of CCL5 Induces MC3T3-Osteoblastic Chemotaxis and Survival. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2011.
- 57) Ma, Z., Hong, Y., Nelson, D.M., Tengood, J., **Little, S.R.**, Wagner, W.R. Biodegradable

- Poly(urethane urea) (PUU) Elastomers with Diverse Properties for Biomedical Applications. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2011.
- 56) Rothstein, S., **Little, S.R.** Augmenting Biologics with Cost-Effective Controlled Release Formulations. AIChE Annual Meeting, Salt Lake City, UT, November 2010.
 - 55) Glowacki, A.J., Jhunjunwala, S., Garlet, G., Sfeir, C.S., **Little, S.R.** Treating Periodontal Disease through the Recruitment of Regulatory Lymphocytes. AIChE, Salt Lake City, UT, November 2010.
 - 54) Dutt, M., Nayhouse, M., Kuksenok, O., **Little, S.R.** Design of Synthetic Vehicles through Self-Assembly of End-Functionalized Nanotubes and Lipids. AIChE Annual Meeting, Salt Lake City, UT, November 2010.
 - 53) Dutt, M., Kuksenok, O., **Little, S.R.**, Balazs, A.C. Forming Trans-Membrane Channels Using End-Functionalized Nanotubes. AIChE Annual Meeting, Salt Lake City, UT, November 2010.
 - 52) Glowacki, A.J., Jhunjunwala, S., Gustavo, G., Sfeir, C.S., **Little, S.R.** Treating Periodontal Disease through Recruitment of Regulatory Lymphocytes. AIChE Annual Meeting, Salt Lake City, UT, November 2010.
 - 51) Rothstein, S.N., **Little, S.R.** Rationally Designed Controlled Release Therapeutics. AIChE Annual Meeting, Salt Lake City, UT, November 2010.
 - 50) Kamalasanan, K., **Little, S.R.** Self-Assembly of Quantum Single Walled Carbon Nanotubes. AIChE Annual Meeting, Salt Lake City, UT, November 2010.
 - 49) Kamalasanan, K., **Little, S.R.** Anisotropic Protein Patterned Microspheres. AIChE Annual Meeting, Salt Lake City, UT, November 2010.
 - 48) Jhunjunwala, S., Raimondi, G., Hall, S., Thorne, S.H., Thomson, A.W., **Little, S.R.** Bio-inspired Controlled Release for Regulatory T Cell Recruitment *In Vivo*. The American Association of Immunologist, Immunology 2010, Baltimore, MD, May 2010.
 - 47) Fierro, J.A., Ramirez, V., Silvia, C., Ruiz, P., Gleisner, A., Morales, J., Jhunjunwala, S., **Little, S.R.**, Bono, M.R., Roseblatt, M. Transference of Phagosomes in an Allogeneic Immunization Protocol Down Regulates the Production of anti-MHC Antibodies and T Cell Mediated Alloreactivity. American Transplant Congress, San Diego, CA, May 2010.
 - 46) Tengood, J., Russell, A.J., **Little, S.R.** Sequential Delivery of VEGF and S1P for Angiogenesis. Society for Biomaterials Annual Meeting, Seattle, WA, April 21st – 24th, 2010.
 - 45) **Little, S.R.** Regenerating Periodontal Structures Through Recruitment of Regulatory Lymphocytes. ICRE Annual Meeting, Washington DC, April 2010.
 - 44) Balazs, A.C., Dutt, M., Kuksenok, O., **Little, S.R.** Modeling the Interactions Between Amphiphilic Nanotubes and Lipid Bilayers. Materials Research Society Spring Meeting, San Francisco, CA, April 2010.
 - 43) **Little S.R.** Biomimetic Drug Delivery. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2010.
 - 42) Hwang, M.P., **Little, S.R.** Controlled Delivery of Platelet-Derived Growth Factor Induces MC3T3-E1-Osteoblastic Cell Proliferation and Chemotaxis. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2010.

- 41) Hofer, H., Sfeir, C.S., **Little, S.R.** Biomaterial-Associated Osteogenesis *In Vitro*. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2010.
- 40) Glowacki, A.J., Jhunjunwala, S., Gustavo, G.P., Sfeir, C.S., **Little, S.R.**, Treating Periodontitis Through Recruitment of Regulatory Lymphocytes. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2010.
- 39) Tengood, J., Russell, A.J., **Little, S.R.** Sequential Delivery of Angiogenic Growth Factors. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2010.
- 38) Jhunjunwala, S., Raimondi, G., Hall, S., Thorne, S., Thomson, A.W., **Little, S.R.** Bio-inspired controlled release for the recruitment of regulatory T cells. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2010.
- 37) Rothstein, S. N., **Little SR.** Customizing Timed Release Formulations: a Visual Whitepaper for ChroKnow Solutions. McGowan Institute for Regenerative Medicine Retreat, Farmington, PA, March 2010.
- 36) **Little, S.R.** Controlling Controlled Release from Biodegradable Systems, US-Japan Symposium on Drug Delivery Systems. Lahaina, HI, December 2009.
- 35) Rothstein, S.N., **Little S.R.** Engineering Sustained Release in Therapeutics. Biotech 2009, Mid-Atlantic Region Biosciences Annual Meeting, Philadelphia, PA, November 2009.
- 34) Rothstein, S.N., **Little, S.R.** *In Vivo* Evaluation of Rationally Designed Single Injection Vaccine. Disease Therapies, AIChE Annual Meeting, Nashville, TN, November 2009.
- 33) Rothstein, S.N., **Little, S.R.** Engineering Efficacious Controlled Release Therapeutics, Meet the Faculty Candidate. AIChE Annual Meeting, Nashville, TN, November 2009.
- 32) Kamalasanan, K., **Little, S.R.** Modeling the Interactions of Amphiphilic Nanotubes and Lipid Bilayers. Self-Assembled Biomaterials, AIChE Annual Meeting, Nashville, TN, November 2009.
- 31) Rothstein, S. N., **Little S.R.** Engineering Sustained Release in Therapeutics. University of Pittsburgh Science Technology Showcase, Pittsburgh, PA, October 2010.
- 30) Roy, A., Jhunjunwala, S., **Little, S.R.**, Kumta, P. Calcium Phosphate-Poly(lactic-co-glycolic) Acid Composite Cements for Bone Regeneration. Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.
- 29) Tengood, J., Russell, A.J., **Little, S.R.** Temporal Delivery of Angiogenic Growth Factors. Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.
- 28) Hofer, H., Sfeir, C.S., **Little, S.R.** Biocompatibility of a Gene Delivery Vehicle for Bone Tissue Engineering. Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.
- 27) Glowacki, A.J., Jhunjunwala, S., Garlet, G., Sfeir, C.S., **Little, S.R.** Regenerating Periodontal Structures Through Recruitment of Regulatory Lymphocytes. Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.
- 26) Karunanidhi, A., **Little, S.R.** Evaluation of PDGF-BB for Osteo-Angiogenic Effects Using 3D-Speroidial Co-culture Model. Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.
- 25) Kamalasanan, K., **Little, S.R.** Dual Protein Patterning of Microspheres for Therapeutics,

Biosensor, and Photonic Applications. Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.

- 24) Jhunjhunwala, S., Hall, S., Raimondi, G., Thorne, S., Garlet, G., Thomson, A.W., **Little, S.R.** Developing Controlled Release Formulations for Regulatory T-cell Recruitment. Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.
- 23) Rothstein, S.N., **Little, S.R.** Translation of *In Silico* Controlled Release Predictions into Rationally Designed Therapeutic Formulations. Biomedical Engineering Society Annual Meeting, Pittsburgh, PA, October 2009.
- 22) Jhunjhunwala, S., Raimondi, G., Thomson, A.W., **Little, S.R.** Controlled Release for Recruitment of Regulatory T cells. Keystone Regulatory T-cell Conference, Keystone, CO, March 2009.
- 21) Yadav, S., van Vlerken, L., **Little, S.R.**, Langer, R., Amiji, M. Multifunctional Nanosystems for MDR-1 Gene Silencing and Chemotherapy Administration to Overcome Drug Resistance. Bio International Convention, Boston, MA, May 8, 2008.
- 20) Tengood, J., Russell, A.J., Wagner, W.R., **Little, S.R.** Sequential Delivery of Growth Factors to Improve Angiogenesis. 8th World Biomaterials Congress, Amsterdam, The Netherlands, May 28 - June 1, 2008.
- 19) **Little, S.R.** Non-Viral Delivery of Genetic Vaccines to Dendritic Cells. Drug and Nucleic Acid Delivery Symposium, Pittsburgh, PA, June 2, 2008.
- 18) Gleisner, A., Ureta, G., Moore, C., Morales, J., Roseblatt, M., Bono, M.R., Morelli, A., Jhunjhunwala, S., **Little, S.R.**, Fierro, A. Phagosomes Derived from Dendritic Cells Down-regulate Adaptive Immune Responses *In Vivo*. American Society for Transplantation, Toronto, Ontario, Canada, May - June 2008.
- 17) Jhunjhunwala, S., Raimondi, G., Thomson, A.W., **Little, S.R.** Delivery of Rapamycin to Dendritic Cells Using Degradable Microparticles. Experimental Biology, San Diego, CA, April 2008.
- 16) Tengood, J., **Little, S.R.** Dissolvable, Synthetic Vasculature. BMES Annual Meeting, Los Angeles, CA, September 2007.
- 15) Rothstein, S.N., Federspiel, W.J., **Little, S.R.** Predictive Model for Release from a Polymeric Microparticle. AIChE Annual Meeting, San Francisco, CA, November 2006.
- 14) **Little, S.R.** High-Throughput Fabrication of Polymeric Microparticles. AIChE Annual Meeting, San Francisco, CA, November 2006.
- 13) **Little, S.R.**, Anderson D.G., Langer R. High-Throughput Fabrication of Polymeric Microparticles. US-Japan Symposium on Drug Delivery Systems, Lahaina, HI, December 2005.
- 12) Wood, K.C., **Little, S.R.**, Langer, R., Hammond, P.T. A New Family of Hierarchically Self-Assembling Linear-Dendritic Hybrid Polymers for Targeted Gene Delivery. US-Japan Symposium on Drug Delivery Systems, Lahaina, HI, December 2005.
- 11) Fuller, J., **Little, S.R.**, Zugates, G.T., Langer, R. Immune Targeted Delivery for Tumor Therapy. US-Japan Symposium on Drug Delivery Systems, Lahaina, HI, December 2005.
- 10) Zugates, G.T., Anderson, D.G., **Little, S.R.**, Langer, R. Synthesis of Functionalized Poly(Beta-Amino Ester)s for Targeted Gene Delivery. US-Japan Symposium on Drug Delivery Systems, Lahaina, HI, December 2005.

- 9) **Little, S.R.**, Lynn, D.M., Ge, Q., Anderson, D.G., Puram, S.V., Chen, J., Eisen, H.N., Langer, R. Novel Microparticles Enhance the Potency of Non-Viral Genetic Vaccines. Basic Aspects of Tumor Immunology, Keystone, CO, March 2005.
- 8) Fuller, J., **Little, S.R.**, Wang, Y., Zugates, G.T., Langer, R. Non-viral Polymer Delivery Systems for Immune Modulation. Basic Aspects of Tumor Immunology, Keystone, CO, March 2005.
- 7) Zugates, G.T., **Little, S.R.**, Fuller, J., Langer, R. Controlled Release of CCL22 from Biodegradable Microparticles as a Model of Tumor Induced Chemotaxis of Regulatory T-cells. Basic Aspects of Tumor Immunology, Keystone, CO, March 2005.
- 6) **Little, S.R.**, Lynn, D.M., Ge, Q., Anderson, D.G., Puram, S.V., Chen, J., Eisen, H.N., Langer, R. Novel Microparticles Enhance the Potency of Non-Viral Genetic Vaccines. Cancer Immunotherapeutics Conference, Boston, MA, September 2004.
- 5) Choleris E., **Little, S.R.**, Mong, J.A., Langer, R., Pfaff, D.W. Antisense DNA against Oxytocin Receptor mRNA from Microspheres in the Medial Amygdale Blocked Social Recognition in Female Mice. Annual Meeting of the Society for Neuroscience, New Orleans, LA, November 2003.
- 4) **Little, S.R.**, Lynn, D.M., Ge, Q., Anderson, D.G., Puram, S.V., Chen, J., Eisen, H.N., Langer, R. Novel Microparticles Enhance the Potency of Non-Viral Genetic Vaccines. US-Japan Symposium on Drug Delivery Systems, Lahaina, HI, December 2003.
- 3) **Little, S.R.**, Anderson, D.G., Lynn, D.M., Puram, S.V., Langer, R. Formulation of Poly-Beta Amino Ester Microparticles for the Delivery of Genetic Vaccines. MIT Bioprocessing and Engineering Center Industry Conference, Cambridge, MA, October 2003.
- 2) **Little, S.R.**, Lynn, D.M., Langer, R. Poly-Beta Amino Ester Microparticles for Genetic Vaccine Delivery. MIT Bioprocessing and Engineering Center Industry Conference, Cambridge, MA, October 2002.
- 1) **Little, S.R.**, Lynn, D.M., Langer, R. Functional, Non-Viral Genetic Vaccine Vectors. MIT Bioprocessing and Engineering Center Industry Conference, Cambridge, MA, October 2001.

PROFESSIONAL ORGANIZATIONS (WITH SELECT LEADERSHIP ROLES)

- American Institute for Medical and Biological Engineering (AIMBE)
- American Association for the Advancement of Science (AAAS)
- American Association of Pharmaceutical Scientists (AAPS)
 - *Selected as a Member of the Awards Committee, 2022-2024*
- American Chemical Society (ACS)
- American Institute of Chemical Engineers (AIChE)
 - *Co-Organizer* of the Symposium on “Polymers for Immunology and Immunotherapy” for the 2011 Spring Meeting
 - *Organizer* of the Multi-Session (4) Drug Delivery Program at the 2009 Annual Meeting in Nashville, TN

- Primary Organizer of the Topical Conference on “Biomedical Applications of Chemical Engineering” for the 2012 Annual Meeting, Pittsburgh, PA.
 - *Thirteen (13) sessions, 84 scientific talks, 18 invited speakers, Plenary by Nicholas Peppas (UT Austin)*
- American Society for Engineering Education (ASEE)
- Association for Research in Vision and Ophthalmology (ARVO)
- BioMedical Engineering Society (BMES)
 - *Organizer of the Session on “Biomaterial Immunoengineering” for the 2012 Annual Meeting, Atlanta, GA*
- Controlled Release Society (CRS)
 - *Member, President’s Task Force for Connectivity, 2016*
 - Appointed Representative to the Board of Directors for Focus Groups
 - *Led the effort in 2017/2018 to establish Focus Groups in the CRS in the areas of: Biomimetic Drug Delivery, Nanomedicine and Nanoscale Drug Delivery, Ophthalmic Drug Delivery, Oral Drug Delivery and Gene Delivery and Gene Editing*
 - CRS Young Investigator Award Winner, 2018
 - Elected to the Board of Directors (Director-At-Large), 2018-2021
 - Elected by the Board of Directors to Chair the Programming Committee for the 2020 Annual Meeting
- Council for Chemical Research (CCR)
- Hilton Head Regenerative Medicine Alliance (Georgia Tech & University of Pittsburgh)
 - *Organizing Committee for the 2013 Meeting – Technologies Enabling Novel Therapies*
- International Association for Dental Research (IADR)
- Materials Research Society (MRS)
 - *Co-Organizer of the Symposium on “Biomimetic Engineering of Particles” for 2011 Spring Meeting*
 - *Was later turned into a full issue of *Advanced Materials* with each speaker contributing a manuscript (Editor: Lorna Stimson).*
- Society for Biomaterials (SFB)
 - Elected to the Board of Directors (SIG Representative), 2013 - 2015
 - Society for Biomaterials Young Investigator Award Winner, 2012
 - *Member, Web Redesign Task Force, 2011-2012*
 - Elected Chair, Drug Delivery Special Interest Group, 2011

- *Organizer* of the Panel for Bridging Academic and Industry Gaps for 2011 National Meeting
- *Elected Vice-Chair*, Drug Delivery Special Interest Group, 2010
- *Organizer* of the Panel for Translation of Nano-Medicine for 2009 National Meeting
- *Organizer* of the Symposium on Micro and Nano Particulate Delivery for 2008 National Meeting
- Society for Leukocyte Biology (SLB)
- Tissue Engineering and Regenerative Medicine International Society (TERMIS)

REVIEWER FOR JOURNALS:

AAPS Journal

Advanced Functional Materials

Advanced Healthcare Materials

Advanced Materials

ACS Applied Materials and Interfaces

ACS Nano

Acta Biomaterialia

Angewandte Chemie

Archives of Oral Biology

Arnold and Mabel Beckman Foundation

Biomacromolecules

Biomaterials

Biomaterials Science

Biomedical Materials

Biotechnology and Bioengineering

BMC Cancer

Cell Reports, Medicine

Chemical Communications

Chemical Product and Process Modeling

Cogent Medicine

Colloids and Surfaces B: Biointerfaces

Drug Design, Development and Therapy
Drug Development and Industrial Pharmacy
Environmental Science and Pollution Research
European Journal of Pharmaceutics and Biopharmaceutics
Experimental Dermatology
Expert Opinion on Drug Delivery
Gene Therapy
Gordon Research Conference Proposals
Integrative Biology
International Journal of Pharmaceutics
Journal of Applied Polymer Science
Journal of Biomedical Materials Research: Part A
Journal of Controlled Release
Journal of Dental Research
Journal of Drug Delivery Science and Technology
Journal of Drug Targeting
Journal of Liquid Chromatography & Related Technologies
Journal of Molecular Medicine
Journal of Pharmaceutical Science
Journal of the American Chemical Society
Journal of Tissue Engineering and Regenerative Medicine
Journal of Tissue Science and Engineering
Macromolecular Rapid Communications
Mini Reviews in Medicinal Chemistry
Molecular Pharmaceutics
Molecular Therapy
Nanobiomedicine
Nanomedicine
Nanomedicine: Nanotechnology, Biology, and Medicine
National Institutes of Health (NIH)
National Science Foundation (NSF)

National Science Centre, Poland (NCN)
Nature Materials
Nature Methods
Nature Scientific Reports
Ocular Immunology and Inflammation
Oncotarget
Pharmaceutical Research
Proceedings of the National Academy of Sciences
Recent Patents on Drug Delivery Formulation
Rejuvenation Research
Science, Advances
Science, Translational Medicine
Small
Trends in Biotechnology
Vaccines