Vivek A. Kumar, Ph.D.

136 4th Ave, Newark, NJ, 07104
(678) 613-1386 | vak1000@gmail.com
kumarlab.njit.edu | bit.ly/VivekKumar | NangioTx.com | SAPHTx.com | pullup.io

ACADEMIC / RESEARCH POSITIONS

Assistant Professor, Department of Biomedical Engineering, New Jersey Institute of Technology (NJIT), 2016-present (primary)
Assistant Professor, Department of Chemical and Materials Engineering, (NJIT), 2016-present
Assistant Professor, Department of Biology, (NJIT), 2021-present
Assistant Professor, Department of Endodontics, Rutgers School of Dental Medicine, 2021-present
Assistant Professor, Department of Restorative Dentistry, Rutgers School of Dental Medicine, 2017-2021

EDUCATION | TRAINING

Georgia Institute of Technology – Atlanta, GA – 2011; PhD – Bioengineering (Bioartificial Tissue Engineering)
Northwestern University – Evanston, IL – 2006; BSc – Biomedical Engineering (Honors) (Tissue Engineering and Transport Processes)

Post-doctoral Fellow (NIH-NRSA), Department of Bioengineering and Chemistry, Rice University, Houston, TX, 2012-2016
(Advised by: Jeffrey Hartgerink, Ph.D. & Rena D'Souza, D.D.S., PhD.)
Post-doctoral Fellow, Department of Surgery, BIDMC and Wyss Institute, Harvard Medical School, Boston, MA, 2011-2012
(Advised by: Elliot Chaikof, M.D., Ph.D.)
Graduate Research Associate (AHA), Department of Surgery, Emory University Hospital, Atlanta, GA, 2006-2010
(Advised by: Elliot Chaikof, M.D., Ph.D.)
Undergraduate Research Assistant, Department of Biomedical Engineering, Northwestern University, Evanston, IL, 2004-2006
(Advised by: Guillermo Ameer, Sc.D.)

ACADEMIC SERVICE

ACS post-doc2faculty (P2F) mentor, 2021
University Entrepreneurship Committee, 2019-present
Materials Science and Engineering Committee, BME representative, 2019-present
Honors College Faculty Advisory Committee, 2019-present
CITLAR Library Committee, NJIT, 2019-present
NJIT Vision 2025 Research and Innovation Committee, 2019-present
New Faculty Development Seminar, Speaker/ Panelist, 2019-present
Endowed Honors Faculty Fellow, NJIT, 2018-present
Intellectual Property Committee, NJIT, 2018-present
Capstone Advisor (BME), NJIT, 2017-present
Capstone Advisor (CS), NJIT, 2017-present
Honors College, BS-MD Committee, NJIT, 2017-present
Pre-Health Committee, NJIT, 2017-present
Undergraduate Curriculum committee (BME), NJIT, 2016-present
- Revised Biomaterials and Pre-health tracks
NCE Career Day, NJIT, 2016-present
- Represented and presented BME to high school students
BME Industrial Advisory Board, BME Faculty representative, NJIT, 2016-present
BME Faculty Search Committee, 2016-2017, 2019-2020
BME Seminar Series Chair - NJIT, Spring 2017, Spring 2021

Non-Academic

President, Founder, SAPHTx, Inc., 2018-Present
President, Founder, Pullup Technologies, Inc., 2017-Present
Consultant, Matrx Pharmaceuticals, Inc, 2016-2017
Consultant, Sapience Therapeutics, Inc, 2016-2017
President, Founder, NangioTx, Inc, 2015-Present

PATENTS AND INVENTION DISCLOSURES **(primary or equal inventors only)**

1. **V. Kumar** et al. Targeted Nanoparticle for the Treatment of Traumatic Brain Injury and other CNS Diseases 63/180,814 (prov)
2. **V. Kumar** et al. Method for design and the discovery of anti-coronavirus drugs (prov)
3. **V. Kumar** et al. Designer peptide opsonins, Provisional Application No. 63/039,780, 2020 (non-prov)
4. **V. Kumar** et al. Injectable Self-Assembling Antibacterial Peptide Hydrogels, 2020 US 10,632,172 B2 (granted)
5. **V. Kumar** et al. Materials for dental pulp regeneration, Provisional Application No. 62/901,457. 2020 (prov)
6. **V. Kumar** et al. System and Method for Regeneration of Neurons, Provisional Application No. 62/910,003. 2019 (prov)
7. **V. Kumar** et al. Self-Assembling Peptides to Reduce Cholesterol, Provisional Application No. 62/765,157. 2018 (US non-prov)
8. **V. Kumar** et al. Protein Hydrogels for Treatment of Neovascular Disease, Provisional Application No. 62/685,468. 2018 (US non-prov)
9. **V. Kumar** et al. Self Assembly of a Polypeptide Hydrogel for Dental Pulp Regeneration, US Prov. 62/676,459. 2018 (abandoned at PCT)
10. **V. Kumar,** Maxine Strickland*, Powered toothbrush with evacuation technology, Provisional Application No. 62/53131. 2018 (PCT stage)
11. **V. Kumar,** et al. Parking spot reservation system and method, Provisional Application No. 15/957,607. 2018 (abandoned at PCT)
12. **V. Kumar**, Jeffrey Hartgerink. Multidomain peptides for promoting angiogenesis. US 9,562,762 B1. 2016 (granted)
13. **V. Kumar**, et al. Self-assembling drug delivery vehicles with ionically crosslinked drugs. US Prov. 62/045,053. 2014 (abandoned at PCT)
14. **V. Kumar**, et al. Self-assembling peptide for hemostasis. U.S. Utility App. 14/554,816. 2014 (abandoned at PCT)
15. **V. Kumar**, et al. Collagen based materials and uses thereto. US20140193477A1. 2010 (abandoned at PCT)

PEER REVIEWED PUBLICATIONS (*indicates corresponding authorship)

1. D. Panchal, J. Kataria, K. Patel, K. Crowe, V. Pai, A. Azizogli, N. Kadian, S. Sanyal, A. Roy, J. Dodd-o, A. Acevedo-Jake, **V. Kumar*.** Peptide-Based Inhibitors for SARS-CoV-2 and SARS-CoV. **Advanced Therapeutics**, 2100104, 2021
2. K. Kim, A. Mahajan, K. Patel, S. Syed, A. Acevedo-Jake, **V. Kumar*.** Materials and Cytokines for the Healing of Diabetic Foot Ulcers. **Advanced Therapeutics**, 2100075, 2021
3. Z. Siddiqui, B. Sarkar, K. Kim, A. Kumar, R. Paul, A. Mahajan, J. Grasman, J. Yang, **V. Kumar***. Self-assembling Peptide Hydrogels Facilitate Vascularization in Two-Component Scaffolds. **Chemical Engineering Journal,** 422, 130145, 2021
4. Nano Carbon Doped Polyacrylamide Gel Electrolytes for High Performance Supercapacitors S. Azizighannad, Z. Wang, Z. Siddiqui, **V. Kumar**, S. Mitra*. **Molecules,** 26, 2631, 2021
5. Z. Siddiqui, B. Sarkar, K. Kim, N. Kadincesme, R. Paul, A. Kumar, Y. Kobayashi, A. Roy, M. Choudhury, J. Yang, E. Shimizu, **V. Kumar***. Angiogenic hydrogels for dental pulp revascularization. **Acta Biomaterialia**, 126, 109, 2021
6. B. Sarkar, X. Ma, A. Agas, Z. Siddiqui, P. Iglesias-Montoro, P. Nguyen, K. Kim, J. Haorah, **V. Kumar*.** In vivo Neuroprotective Effect of a Self-assembled Peptide Hydrogel. **Chemical Engineering Journal**, 408, 127295, 2021
7. C. Moore, Z. Siddiqui, G. Carney, Y. Naaldijk, K. Guiro, A. Ferrer, L. Sherman, M. Guvendiren. **V. Kumar**, P. Rameshwar*. A 3D Bioprinted Material that Recapitulates the Perivascular Bone Marrow Structure for Sustained Hematopoietic and Cancer Models. **Polymers**, 13, 480, 2021
8. E. Karamana, Z. Wang, K. Chen, Z. Siddiqui, Y. Cheng, S. Basuray, **V. Kumar**, S. Mitra. Functionalized Carbon Nanotube Doped Gel Electrolytes with Enhanced Mechanical and Electrical Properties for Battery Applications. **Mat Chem & Phys**, 124448, 2021
9. V. Harbour, C. Casillas, Z. Siddiqui, B. Sarkar, S. Sanyal, P. Nguyen, K. Kim, A. Roy, P. Iglesias-Montoro, S. Patel, F. Podlaski, P. Tolias, W. Windsor, **V. Kumar***. Regulation of Lipoprotein Homeostasis by Self-Assembling Peptides. **ACS Applied Bio Materials**, 3,8978, 2020
10. K. Crowe, Z. Siddiqui, V. Harbour, K. Kim, S. Syed, R. Paul, A. Roy, R. Naik, K. Mitchell, A. Mahajan, B. Sarkar, **V. Kumar***. Evaluation of injectable naloxone releasing hydrogels. **ACS Applied Bio Materials**, 3, 7858, 2020
11. B. Sarkar, Z. Siddiqui, K. Kim, P. Nguyen, X. Reyes, T. McGill, **V. Kumar*.** Implantable anti-angiogenic scaffolds for treatment of neovascular ocular pathologies. **Drug Delivery and Translational Research**, 10, 1191, 2020.
12. S. Shi, R. Vissapragada, J. Jaoude, C. Huang, A. Mittal, E. Liu, J. Zhong, **V. Kumar***. Evolving role of biomaterials in diagnostic and therapeutic radiation oncology. **Bioactive Materials**, 5, 223, 2020.
13. X. Ma, A. Agas, Z. Siddiqui, K. Kim, P. Iglesias-Montoro, J. Kalluru, **V. Kumar***, J. Haorah*. Angiogenic Peptide Hydrogels for Treatment of Traumatic Brain Injury. Bioactive Materials. **Bioactive Materials**, 5, 124, 2020**.**
14. K. Kim, Z. Siddiqui, M. Patel, B. Sarkar, **V. Kumar*.** A self-assembled peptide hydrogel for cytokine sequestration. **Journal of Materials Chemistry Part B**, 8, 945, 2020.
15. B. Sarkar, Z. Siddiqui, P. Nguyen, N. Dube, W. Fu, S. Park, S. Jaisinghani, R. Paul, S. Kozuch, D. Deng, P. Iglesias-Montoro, M. Li, D. Sabatino, D. Perlin, W. Zhang, J. Mondal, Jagannath, **V. Kumar***. Membrane Disrupting Nanofibrous Peptide Hydrogels. **ACS Biomaterials Science and Engineering**, 5, 4657, 2019
16. K. Petrak, R. Vissapragada, S. Shi, Z. Siddiqui, K. Kim, B. Sarkar, **V. Kumar***. Challenges in Translating from Bench to Bed-Side: Pro-Angiogenic Peptides for Ischemia Treatment. **Molecules**, 24, 1219, 2019
17. P. Nguyen, B. Sarkar, Z. Siddiqui, M. McGowan, P. Iglesias-Montoro, S. Rachapudi, S. Kim, W. Gao, E. Lee, **V. Kumar***. Self-assembly of an anti-angiogenic nanofibrous peptide hydrogel. **ACS Applied Bio Materials**, 1, 865, 2018
18. B. Sarkar, P. Nguyen, W. Gao, A. Dondapati, Z. Siddiqui, **V. Kumar***. Angiogenic Self-Assembling Peptide Scaffolds for Functional Tissue Regeneration. **Biomacromolecules**, 19, 3597, 2018
19. P. Nguyen, W. Gao, S. Patel, Z. Siddiqui, S. Weiner, E. Shimizu, B. Sarkar, **V. Kumar***. Self-Assembly of a dentinogenic peptide hydrogel. **ACS Omega**, 3, 5980, 2018
20. P. Hitscherich, P. Nguyen, A. Kannan, A. Chirayath, S. Anur, B. Sarkar, E. Lee, **V. Kumar***. Injectable self-assembling peptide hydrogels for tissue writing and embryonic stem cell culture. **Journal of Biomedical Nanotechnology**, 14, 802, 2018
21. S. Shi, P. Nguyen, H. Cabral, R. Diez-Barroso, P. Derry, S. Kanahara, **V. Kumar***. Development of peptide inhibitors of HIV transmission. **Bioactive Materials,** 1, 109, 2016
22. **V. Kumar**, Q. Liu, N. Wickremasinghe, Siyu Shi, T. Cornwright, Y. Deng, A. Azares, A. Jake, N. Agudo, S. Pan, D. Woodside, J. Willerson, R. Dixon and J. Hartgerink. Treatment of hind limb ischemia using angiogenic peptide nanofibers. **Biomaterials,** 98, 113, 2016
23. **V. Kumar***, B. Wang, and S. Kanahara. Rational design of fiber forming supramolecular structures. **Experimental Biology and Medicine,** 241, 899, 2016
24. **V. Kumar**, N. Wickremasinghe, S. Shi, J. Hartgerink. A nanofibrous snake venom based hemostat. **ACS Biomaterials Science and Engineering,** 1, 12, 1300, 2015
25. **V. Kumar**, B. Wang, S. Shi, I. Li, A. Jalan, B. Sarkar, N. Wickremasinghe and J. Hartgerink. Drug-triggered and crosslinked self-assembling nanofibrous hydrogels. **Journal of the American Chemical Society,** 137, 14, 4823, 2015
26. **V. Kumar**, N. Taylor, S. Shi, N. Wickremasinghe, R. D'Souza and J. Hartgerink. Self-assembling multidomain peptides modulate immune responses through biphasic release. **Biomaterials**, 52, 71, 2015
27. **V. Kumar**, N. Taylor, S. Shi, B. Wang, A. Jalan, M. Kang, N. Wickremasinghe and J. Hartgerink. Highly Angiogenic Peptide Nanofibers. **ACS Nano,** 9, 860, 2015
28. **V. Kumar**, R. Vissapragada, L. Hwang, M. Fusco, C. Ogilvy, A. Thomas. Cerebral AVMs and dural AVFs: Pathology and management. **Endovascular Today,** 14, 2, 2015
29. N. Wickremasinghe, **V. Kumar**, Siyu Shi and J. Hartgerink. Controlled angiogenesis in peptide nanofiber composite hydrogels. **ACS Biomaterials Science and Engineering,** 1, 845, 2015
30. R. Vissapragada, **V. Kumar**, O. Merchant, L. Hwang, M. Fusco, C. Ogilvy, A. Thomas. Material Requirements for Therapeutic Embolization of Intracranial Vascular Malformations. **Endovascular Today,** 14, 4, 2015.
31. L. Hwang, **V. Kumar**, R. Vissapragada, K. Lui, M. Fusco, C. Ogilvy, A. Thomas. Treatment Options for Cerebral AVMs and Dural AVFs **Endovascular Today,** 14, 3, 2015.
32. **V. Kumar**, N. Taylor, A. Jalan, L. Hwang, B. Wang and J. Hartgerink. A nanostructured collagen mimic for hemostasis. **Biomacromolecules**, 15, 4, 1484, 2014
33. **V. Kumar**, A. Martinez, J. Caves, N. Naik, C. Haller and E. Chaikof. Microablation of collagen-based substrates for tissue engineering. **Biomedical Materials,** 9,1, 1002, 2014
34. N. Wickremasinghe, **V. Kumar**, J. Hartgerink. Two step self-assembly of liposome-multidomain peptide nanofiber hydrogel for time-controlled release. **Biomacromolecules,** 15, 10, 3587, 2014
35. R. Vissapragada, M. Contreras, C. DaSilva, **V. Kumar,** A. Ochoa, A. Vasudevan, C. Ferran and A. Thomas. Bidirectional crosstalk between periventricular endothelial cells and neural progenitor cells promotes the formation of a neurovascular unit. ***Cover art.*** **Brain Research**, 1561, 8, 2014
36. **V. Kumar**, J. Caves, C. Haller, E. Dai, L. Liu, S. Grainger and E. Chaikof. Collagen-Based Substrates with Tunable Strength for Soft Tissue Engineering. Biomaterials Science, 1, 11, 1193, 2013
37. **V. Kumar**, J. Caves, C. Haller, E. Dai, L. Liu, S. Grainger and E. Chaikof. Acellular Vascular Grafts Generated from Collagen and Elastin Analogues. **Acta Biomaterialia,** 9, 3, 8067, 2013

38. Z. Qu, S. Muthukrishnan, M. Urlam, C. Haller, S. Jordan, **V. Kumar**, U. Marzec, Y. Elkasabi, J. Lahann, S. Hanson, E. Chaikof. A biologically active surface enzyme assembly that attenuated thrombus formation. **Advanced Functional Materials,** 21, 24, 4746, 2011
39. N. Naik, **V. Kumar**, E. Chaikof and M. Allen. MEMS-assisted spatially homogeneous endothelialization of a high length-to-depth aspect ratio microvascular network. **IEEE Eng Med Bio Soc.**, 8, 290, 2011
40. **V. Kumar**, L. Brewster, J. Caves, E. Chaikof. Tissue Engineering of blood vessels: current status, requirements and future challenges. **Cardiovascular Engineering and Technology,** 2, 3, 137, 2011
41. J. Caves, W. Cui, J. Wen, **V. Kumar**, A. Martinez, E. Chaikof. Elastin-like protein matrix reinforced with collagen microfibers for soft tissue repair. **Biomaterials**, 32, 23, 5371, 2011
42. J. Wilson, W. Cui, V. Kozlovskaya, E. Kharlampieva, D. Pan, Z. Qu, V. Krishnamurthy, J. Mets, **V. Kumar**, J. Wen, Y. Song, V. Tsukruk, and E. Chaikof. Cell Surface Engineering with Polyelectrolyte Multilayer Thin Films. **Journal of the American Chemical Society**, 133, 18, 7054, 2011
43. J. Caves[%], **V. Kumar**[%], A. Martinez, J. Kim, C. Ripberger, C. Haller, E. Chaikof. The use of microfiber composites of elastin-like protein matrix reinforced with synthetic collagen in the design of vascular grafts. (% co-first authorship) **Biomaterials,** 31, 7175, 2010.
44. J. Caves, **V. Kumar**, W. Xu, N. Naik, M. Allen, E. Chaikof. Microcrimped collagen fiber-elastin composites. **Advanced Materials** 24, 2041, 2010. Research Highlights, **Nature Materials** 9, 285, 2010
45. J. Caves, **V. Kumar**, J. Wen, W. Cui, A. Martinez, R. Apkarian, J. Coats, K. Berland, E. Chaikof. Fibrillogenesis in continuously spun synthetic collagen fiber. **Journal of Biomedical Materials Research Part B. Applied Biomaterials**, 93b, 24, 2009
46. N. Naik, J. Caves, **V. Kumar**, E. Chaikof, M. Allen. A template-based fabrication technique for spatially-designed polymer micro/nanofiber composites. **Transducers**, 21, 1869, 2009
47. A. Webb, **V. Kumar** and G. Ameer**.** Biodegradable poly(diol citrate) nanocomposite elastomers for soft tissue engineering. **Journal of Materials Chemistry,** 17, 900, 2007

PEER REVIEWED ABSTRACTS AND CONFERENCE PRESENTATIONS

1. S. Ramasamy, Z. Siddiqui, A. Roy, R. Kumar, A. Kolloli, T. Chang, **V. Kumar**, S. Subbian. SARS-CoV-2 spike binding peptides: A potential therapeutic approach for COVID-19. (**Virtual Immunology**, 2021)
2. S. Ramasamy, R. Kumar, Z. Siddiqui, A. Roy, S. Sanyal, A. Kolloli, T. Chang, **V. Kumar**, S. Subbian. Design and evaluation of novel SARS-CoV-2 spike binding peptides: A potential therapeutic approach for COVID-19. (**Theobald Smith Winter Symposium**, 2021)
3. A. Acevedo-Jake, S. Sanyal, S. Shi, Z. Siddiqui, **V. Kumar**. Efficacy of pro- and anti-angiogenic peptide hydrogels to treat age-related macular degeneration. (**NEBEC**, 2021)
4. S. Sanyal, V. Harbour, Z. Siddiqui, B. Sarkar, A. Acevedo-Jake, V. Kumar. Self-Assembling Peptides to Mitigate Familial Hypercholesterolemia. (**NEBEC**, 2021)
5. A. Roy, S. Sanyal, Z. Siddiqui, A. Acevedo-Jake, S. Syed, S. Ramasamy, J. Dodd-o, R. Dave, S. Subbian, **V. Kumar**. Opsonization of SARS-CoV-2 through Self Assembling Peptide Hydrogel. (**NEBEC**, 2021)
6. J. Kataria, K. Patel, L. Mahadeo, A. Acevedo-Jake, **V. Kumar**. Preliminary Evaluation of Dry Cupping for Improvement in Exercise Endurance. (**NEBEC**, 2021)
7. A. Adil, R. Fiore, S. Gannamani, A. Griffith, K. Hang, K. Crowe, **V. Kumar**. Toothbrush with Onboard Suction and Waste Storage for Evacuation of Aspirates.
8. D. Panchal, J. DeLorenzo, Z. Siddiqui, A. Acevedo-Jake, P. Elguera, I. Patel, G. Haspel, A. Varkouhi, **V. Kumar**. Cationic Peptides for Nucleic Acid Delivery. (**NEBEC**, 2021)
9. A. Mahajan, K. Severi, **V. Kumar**. Neuroregeneration in Zebrafish through Self-Assembling Peptide Hydrogels. (**NEBEC**, 2021)
10. R. Sajankila, M. Futterman, A. Acevedo-Jake, A. Mahajan, P. Elguera, **V. Kumar**. A Not-so-Terrifying Introduction to Physics at the High School Level. (**NEBEC**, 2021)
11. Park G, Tarafder S, Alex A, Lee E, Siddiqui Z, **Kumar V**, Lee C. Controlled Delivery Of Oxo-M And 4-PPBP Via Multidomain Peptides For In Situ Tendon Regeneration. Poster. (**Orthopedic Research Society**, 2020)
12. Sarkar B, Ma X, Iglesias-Montoro P, Siddiqui Z, Agas A, Kim K, Haorah J, **Kumar V**. Enhanced *In Vivo* Neuronal Survival after Traumatic Brain Injury Facilitated By an Injectable Self-Assembled Peptide Hydrogel. (**AIChE**, 2019)
13. Nguyen P, Sarkar B, Siddiqui Z, Kim K, Mathew A, **V. Kumar**. Novel Drug Delivery System using Anti-Angiogenic Peptides for Glioblastoma Multiforme. Poster. (**Northeast Bioengineering Conference**, 2019).
14. Ma X, Sarkar B, Iglesias-Montoro P, Siddiqui Z, **Kumar V**, Haorah J. Vascular pathology mediated traumatic brain injury and the regenerative treatment using peptide hydrogel. Podium. **(Society for Neuroscience**, 2019)
15. Moore CA, Siddiqui Z, Carney GJ, **Kumar VA**, Rameshwar P. Development of novel hydrogel for 3D bioprinting applications that recapitulates the native bone marrow microenvironment. Poster. (**New Jersey Commission on Cancer Research 3rd Annual Symposium**, 2019)
16. Moore CA, Siddiqui Z, Carney GJ, **Kumar VA**, Rameshwar P. Development of novel hydrogel for 3D bioprinting applications that recapitulates the native bone marrow microenvironment. Poster. (**26th Annual Rutgers Graduate Student Association Symposium**, 2019)
17. Siddiqui Z, Kim K, Naik R, Mitchell K, Sarkar B, **Kumar V**. Sustained Release of Naloxone Through Self-assembling Peptide Hydrogels for Long-term Management of Opioid Addiction. Poster. (**Biomedical Engineering Society**, 2019).
18. Kim K, Siddiqui Z, Patel M, Sarkar B, Nguyen P, **Kumar V**. Self-assembling Peptides Scaffolds For Inflammatory Response Modulation. Poster. (**Biomedical Engineering Society**, 2019).
19. Ma X, Sarkar B, Agas A, Igelesias-Monotoro P, Siddiqui Z, Kim K, Haorah J, **Kumar V**. Injectable Self-assembled Hydrogel for Neuroprotection *in vivo* after Traumatic Brain Injury. Poster. (**Biomedical Engineering Society**, 2019).
20. Ma X, Sarkar B, Igelesias-Monotoro P, Siddiqui Z, **Kumar V**, Haorah J. Injectable Self-assembling Peptide Hydrogel for Angiogenesis after Traumatic Brain Injury. Poster. (Biomedical Engineering Society, 2019).
21. Sarkar B, Siddiqui Z, Kim K, Paul R, Kumar A, Weiner S, Shimizu E, **Kumar V**. Regeneration of Pulpal Vasculature in a Canine Model Guided by an Injectable Self-assembled Hydrogel. Poster. (Biomedical Engineering Society, 2019).
22. Davidoff E, Siddiqui Z, **Kumar V**, Sy J. Self-Healing Hydrogels for Improving Brain Implant Biocompatibility. Poster. (**Biomedical Engineering Society**, 2019).
23. Sarkar B, Siddiqui Z, Kim K, **Kumar V**. Targeting Regeneration of Injured Neuronal Microenvironment by Injectable Self-assembled Hydrogels. Poster. (**Biomedical Engineering Society**, 2019).
24. Pepper M, Sarkar B, Siddiqui Z, Kim K, Yang J, **Kumar V**. Functional Hydrogels for Modification of Porous Scaffolds. Poster. (**Biomedical Engineering Society,** 2019).
25. Sarkar B, Ma X, Iglesias-Montoro P, Siddiqui Z, Kim K, Agas A, Nguyen P, Haorah J, **Kumar V**. Injectable neuroprotective peptide hydrogels. Podium & Press Conference. (**ACS**, 2019)
26. Siddiqui Z, Sarkar B, Kim K, Paul R, Kumar A, Yang J, **Kumar V**. Nanofibrous peptide hydrogels for modulating angiogenic responses of implanted polymeric scaffolds. Podium. (**ACS**, 2019)

27. Siddiqui Z, Naik R, Mitchell K, **Kumar V**. Release of Naloxone for Long-term Management of Opioid Addiction. Podium. **(Northeast Bioengineering Conference**, 2019).
28. Moore CA, Guiro K, **Kumar VA**, Arinzeh TL, Rameshwar P. 3D bioprinted model of perivascular bone marrow to investigate early breast cancer dormancy. (**New Jersey Commission on Cancer Research 3rd Annual Symposium**, 2018)
29. Moore CA, Guiro K, Ayer S, **Kumar VA**, Arinzeh TL, Rameshwar P. Bioprinted model of perivascular bone marrow to investigate breast cancer dormancy. Poster. (**25th Annual Rutgers Graduate Student Association Symposium**, 2018)
30. Moore CA, Guiro K, Ayer S, **Kumar VA**, Arinzeh TL, Rameshwar P**.** 3D bioprinted model of bone marrow perivascular niche to investigate breast cancer dormancy. Poster. (**Cancer Stem Cell Conference**, 2018)
31. Nguyen P, Gao W, Sarkar B, Siddiqui Z, Patel S, Shimizu E, Weiner S, **Kumar VA**. Dentinogenic Peptide Hydrogels for Pulpal Regeneration. Podium. (**Materials Research Society**, 2018)
32. Sarkar B, Park S, Nguyen PK, Deng D, Fu W, Siddiqui Z, Jaisinghani, S, Paul, R, Zhang, W, Li, M, Perlin, DS, **Kumar, VA.** Rational design of Antimicrobial Peptide Nanofibers. Poster. (**Materials Research Society**, 2018)
33. Siddiqui Z, Nguyen PK, Sarkar B, Sabatino D, **Kumar VA.** Photo-responsive Peptide Hydrogels for Tailored Drug Delivery. Podium. (**Materials Research Society**, 2018)
34. Siddiqui Z, McGowan M, Nguyen PK, Iglesias-Montoro P, Sarkar B., **Kumar VA.** Programmable modulation of cellular viability using self-assembled peptide nanofibers. Podium. (**Biomedical Engineering Society**, 2018)
35. Sarkar B, Nguyen, PK, Jaisinghani S, Paul R, Siddiqui Z., McGowan M, Iglesias-Montoro P, **Kumar VA.** Self-assembled Antibacterial Peptide Nanofibers Inspired by LL-37. Poster. (**Biomedical Engineering Society**, 2018)
36. Sarkar B, Nguyen PK, Harbour V, Iglesias-Montoro P, **Kumar, VA.** Biomimetic peptide hydrogels for modulating lipoprotein homeostasis. Podium. (**ACS**, 2018)
37. Nguyen PK, Gao W, Patel S, Sarkar B, Shimizu E, Weiner S, **Kumar VA**. Dentinogenic self-assembling peptide hydrogels for pulpal tissue regeneration. Podium & Press conference. (**ACS**, 2018)
38. Nguyen PK, Chirayath AG, Sarkar B, **Kumar VA**. Proangiogenic Peptide Scaffolds for Myocardium Regeneration. Poster. (**Society for Biomaterials**, 2018)
39. Sarkar B, Jaisinghani S, Nguyen PK, **Kumar VA**. Broad Spectrum Antibiotic Self-Assembling Peptides. Poster (**Society for Biomaterials**, 2018)
40. Nguyen PK, Iglesias-Montoro P, Sarkar B, **Kumar VA**. Injectable Biomimetic Hydrogels for Neuroprotection and Regeneration. Podium presentation. (**Materials Research Society**, 2018)
41. Iglesias-Montoro P, Harbour VH, Nguyen PK, Sarkar B, **Kumar VA**. Lipid Lowering Self-Assembling Peptide Hydrogels. Podium presentation. (**Materials Research Society**, 2018)
42. Sarkar B, Rachapudi S, Nguyen PK, Kumar VA. Injectable Antiangiogenic Therapy for Posterior Segment Diseases. Podium presentation. (**Materials Research Society**, 2018)
43. Nguyen PK, Gao W, Patel SD, Weiner S, **Kumar VA**. Dental Pulp Regeneration Using Novel Self-Assembling Peptides. Podium presentation. (**Biomedical Engineering Society**, 2017)
44. Nguyen PK, Premkumar R, Kumar VA. Enhancing Decellularized Vascular Grafts Using Self-Assembling Multidomain Peptides. Podium presentation. (**Biomedical Engineering Society**, 2017)
45. Nguyen PK, Gao W, Patel SD, Shimizu E, Weiner S, Kumar VA. Multidomain Peptides for Dental Pulp Regeneration. Poster. (**Gordon Research Conference: Biomaterials & Tissue Engineering**, 2017)
46. **V. Kumar**, N. Wickremasinghe, Q. Liu, S. Shi, A. Azares, R. Dixon, J. Hartgerink. Biodistribution and therapeutic efficacy of highly angiogenic peptides. Podium presentation. (**Biomedical Engineering Society**, 2015)
47. **V. Kumar**, N. Taylor, A. Jalan, B. Wong, S. Shi, J. Hartgerink. Proangiogenic multidomain peptide hydrogels. Podium presentation. (**Materials Research Society Spring Meeting**, 2014).
48. **V. Kumar**, S. Shi, N. Taylor and J. Hartgerink. In vitro and in vivo evaluation of proangiogenic multidomain peptides. Poster. (**Advances in Tissue Engineering**, 2014).
49. **V. Kumar**, B. Wang, I. Li, A. Jalan, S. Shi, J. Hartgerink. Self-assembling drug delivery vehicles direct angiogenesis and immune signals. Poster. **(Biomedical Engineering Society**, 2014)
50. **V. Kumar**, N. Taylor and J. Hartgerink. Biomimetic engineering and evaluation of multidomain peptide hydrogels capable of promoting tissue healing. Podium presentation. (**Materials Research Society Spring Meeting**, 2014).
51. **V. Kumar**, N. Taylor, J. Colombo, L. Hwang and J. Hartgerink. Nanofibrous Multidomain Peptide Hydrogels Modulate Immune Response and Promote Resolution of Inflammation. Outstanding Poster. (**Gordon Research Conference: Biomaterials / Tissue Engineering**, 2013).
52. **V. Kumar**, N. Taylor, J. Colombo and J. Hartgerink. Monocyte/ Macrophage Response to Nanofibrous Multidomain Peptide Hydrogels. Poster. (**MD Anderson Cancer Center APSS Conference**, 2013)**.**
53. **V. Kumar**, N. Taylor and J. Hartgerink. Facile engineering of multidomain peptide hydrogels for therapeutic angiogenesis. Poster. (**Advances in Tissue Engineering**, 2013).
54. N. Taylor, **V. Kumar** and J. Hartgerink. Multidomain peptide hydrogels and their use in differentiating monocytes. Poster. (**Advances in Tissue Engineering**, 2013).
55. J. Colombo, **V. Kumar**, M. Kang, L. Hwang, J. Hartgerink, R. D'Souza. Cell based assays in self assembling multi-domain peptide hydrogels. Poster. **(IADR – Pulp Biology and Regeneration Group**, 2013).
56. **V. Kumar**, J. Caves, E. Chaikof. Anisotropically defined collagen: a novel substrate for tissue engineering. Plastic surgery section. Poster. **(Harvard Medical School Surgery Research Symposium**, 2012).
57. **V. Kumar**, A. Martinez, J. Caves, J. Dingus, S. Jain and E. Chaikof. Generation of mechanically robust collagen-based biomaterials with defined laser ablated patterns for soft tissue engineering. Poster. **(Tissue Engineering and Regenerative Medicine - TERMIS**, 2011).
58. **V. Kumar**, J. Caves, S. Norred, M. Collins and E. Chaikof. Fabrication and Characterization of Large Scale Structurally and Mechanically Anisotropic Nanofibrous Collagen Matrices for Soft Tissue Engineering. Poster. (**Gordon Research Conference: Biomaterials / Tissue Engineering**, 2011).
59. Z. Qu, S. Muthukrishnan, M. Urlam, C. Haller, **V. Kumar**, U. Marzec, S. Hanson, J. Lahann, and E. Chaikof. Engineering an Actively Thromboresistant Blood-contacting Interface. Poster. (**Gordon Research Conference: Biomaterials / Tissue Engineering**, 2011).
60. N. Naik, **V. Kumar**, E. Chaikof and M. Allen. MEMS-assisted spatially homogeneous endothelialization of a high length-to-depth aspect ratio microvascular network. Poster. (**IEEE EMBS Conference**, 2011)
61. Z. Qu, S. Muthukrishnan, M. Urlam, C. Haller, **V. Kumar**, U. Marzec, S. Hanson, J. Lahann, and E. Chaikof. Engineering an Actively Thromboresistant Blood-contacting Interface. Poster. (**Biomedical Engineering Society**, 2010)
62. J. Caves, W. Cui, J. Wen, **V. Kumar**, A. W. Martinez, and E. Chaikof. Synthetic collagen fiber and elastin-like protein composites for abdominal wall repair. Podium presentation. (**Biomedical Engineering Society**, 2010)
63. J. Caves, **V. Kumar**, W. Xu W, N. Naik, M. Allen, E. Chaikof. Microcrimped Collagen Scaffolds Mimic The Mechanical Response Of Valve Leaflet Biomaterials. Poster. (**International Society for Cardiovascular Applied Biology**, 2010)
64. J. Caves, ***V. Kumar**, J. Kim, W. Li, C. Haller and E. Chaikof. Design of vascular grafts from protein polymers reinforced with defined collagen fiber architectures. ***Presenter**, Podium presentation. (**BMES**, 2009).

65. J. Caves, **V. Kumar**, J. Kim, W. Li, C. Haller, and E. Chaikof. Design and fabrication of vascular grafts from protein polymer fiber composites. Poster presentation. (**Gordon Research Conference: Biomaterials / Tissue Engineering**, 2009).
66. Naik, J. Caves, **V. Kumar**, E. Chaikof, M. Allen. A template-based fabrication technique for spatially-designed polymer micro/nanofiber composites. (**Tranducers** 2009).
67. A. Webb, **V. Kumar**, G. Ameer. Poly(diol citrate) nanocomposites with enhanced mechanical properties for soft tissue engineering. Poster. (**SFB**, 2007).
68. A. Webb, **V. Kumar** and G. Ameer. Novel elastomeric nanocomposites with enhanced mechanical properties. Poster. (**BMES**, 2006).
69. **V. Kumar** and G. Ameer. PLLA-PDC/POC nanocomposites for tissue engineering. Podium presentation (**Harold B. Gotaas Award**, 2006).

INVITED TALKS

1. Ideating entrepreneurship, NJIT Alumni presentation, 05/21
2. Self-assembling hydrogels and tissue mimics, e-Seminar Series on Translational Biomedical Engineering, 05/21
3. Rationalized peptide design towards engineered therapeutics, ASU CIVV-oholics seminar, 04/21
4. Engineered Peptide Assemblies for drug design, UTDallas, 04/21
5. A SAPH as Drugs and Tissue Mimics, U. Arkansas BME Seminar Series, 03/21
6. SAPH Design for biomaterials drug engineering, Brown BME seminar series, 01/21
7. SAPH Biomaterial drugs, AiChE, Regenerative Engineering Society Symposium, 12/20
8. A SAPH Engineered Platform for Biomaterial Drugs, UMass ChBE, 10/20
9. Tunable gels for customizable tissue engineering, UNH BME, 10/20
10. Peptide gels to guide tissue growth, UPenn School of Dentistry 09/20
11. Hydrogels for tissue regeneration, Penn School of Veterinary Medicine, 03/20
12. Engineering self-assembling medicines, Rowan University, 11/19
13. Injectable neuroprotective peptide hydrogels, ACS National Meeting, Press Conference, 08/19
14. How to start your start up - MD&M (Medical Device and Materials annual conference) Javits Center, 06/19
15. That's Fibrillar, dude… Surfing the World of Self-assembling Nanotubules Diabetic Foot Conference (DFCon), 10/18
16. Short peptide biomaterial-drugs, Seton Hall, 09/18
17. Dentinogenic self-assembling peptide hydrogels for pulpal tissue regeneration, ACS National Meeting, Press Conference, 08/18
18. Self-Assembled Peptide-Based Drugs and Biomaterials, Stevens Institute of Technology, 03/18
19. Injectable dental materials for tissue regeneration, Rutgers School of Dental Medicine, 10/17
20. Self-assembled peptide drugs and biomaterials, Rutgers University, BME, 10/17
21. Biomaterials for Drug Discovery, Delivery and Development, Enterprise Development Center, 12/16
22. Developing materials and drugs for cardiovascular and peripheral vascular disease, Vascular and CT surgery rounds, Rutgers Department of Surgery, 12/16
23. Engineering multi-functional Biomaterials, NJIT Dean of Engineering Annual Dinner, Guest Speaker, 12/16
24. Turning ideas into proposals, Department of Biomedical Engineering, NJIT, 11/16
25. Biomedical Engineering: Biomaterials, Bioinstrumentation and Biomechanics, High school NJIT campus visit, NJIT, 10/16
26. Proteins and Bio-materials, BME 101, NJIT, 08/16
27. Self-assembling peptides: drug discovery, development and delivery, Albert Einstein School of Medicine, 05/16
28. Naturally derived and peptide based biomaterials. Departments of Biomedical Engineering and Chemical Engineering, University of Virginia. 01/16
29. Developing biomaterials to tune in vivo responses. Department of Biomedical Engineering, New Jersey Institute of Technology. 12/15
30. Peptide mimics for angiogenesis, drug delivery and inflammation modulation. Center for Translational Research on Inflammatory Disease, Michael E. DeBakey Veteran's Affairs Medical Center. 12/14.
31. Evolving biomaterials to tune the body's response. Department of Chemical Engineering, University of Utah. 09/14
32. Multidomain peptides for tissue healing. Advances in Collaborative Bioscience, Rice University. 09/14
33. Science, Research and Medicine. The Turner School. 05/14
34. Peptide self-assemblies for angiogenesis and immune modulation. Texas Heart Institute. 12/13
35. Development of Immunomodulatory and angiogenic multi-domain peptides for therapeutic tissue regeneration. Baylor College of Medicine. 11/13
36. Peptide scaffolds to tame inflammation. BRC Ideas that go viral, Rice University. 08/13
37. Biomimetic materials for cardiovascular and soft tissue engineering. Rice University. 07/1212
38. Design and Evaluation of Arterial Grafts and Biomaterials for Cancer Research. MD Anderson Cancer Center. 05/12
39. Design and Evaluation of Biomimetic Arterial Grafts. Methodist Hospital. 05/12
40. PLLA-PDC/POC nanocomposites for tissue engineering. Harold B. Gotaas Research Award. 06/06

PAST AND PRESENT FUNDING

Faculty Seed Grant Detecting Biodeg of Inj Neuroprotective Biomaterials	Kumar (PI) $7500	06/21-05/22
NSF STTR 2032392 STTR Phase I:Designer peptide opsonins against COVID-19	Kumar (Sub-lead)	12/20-11/22
NIH NCATS UL1TR003017 Angiogenic hydrogels for cardiac repair	Kumar (MPI) $100,000	03/21-02/22
NSF 2041092 Powered Toothbrush with Evacuation Technology	Kumar (Co-PI) $50,000	09/20-09/21
NIH NIDCR R01 Bioactive Scaffold for TMJ Disc Regeneration	Kumar (Co-I) $3,482,969	10/20-10/25
NIH NEI R15EY029504 – S1 Diversity supplement for post-doc for below grant	Kumar (PI) $122,627	04/20-04/22
NIH NEI R15EY029504 Treatment of neovascular posterior segment diseases	Kumar (PI) $386,000	04/19-04/22

NSF 1903617 I-Corps: Injectable gel for treating diabetic retinopathy	Kumar (PI) $50,000	01/19-06/20
TechAdvance Development of an electric toothbrush with evacuation	Kumar (PI) $94,000	06/19-12/20
NIH NIDDK R43DK121599-01 Angiogenic hydrogels for diabetic ulcer wound healing	Kumar (President) $225,000	09/19-09/20
i-Corps (mini-site program) 8 of my students to date.	Kumar (academic lead) $2000 each	Ongoing
NJIT Undergraduate Research and innovation (P2) 18 of my students to date.	Kumar (mentor) $3000 each	Ongoing
NJIT Undergraduate Research and innovation (P1) 8 of my students to date.	Kumar (mentor) $500 each	Ongoing

Completed Research Support

New Jersey Health Foundation Antiangiogenic peptide efficacy	Kumar (PI) $44,000	06/19-01/20
NJIT Faculty seed grant "Development of Cytocompatible, Injectable Hydrogel Matrices for Soft Tissue Repair".	Kumar (PI)	09/16-09/17
NJIT startup funds	Kumar (PI)	08/16-06/19
MacDonald Foundation, 15RDM001 "Multidomain peptides for therapeutic regeneration of myocardial tissue post infarct."	Kumar (Co-PI)	01/15-01/16
NIH/NIDCR, F32 DE023696-01A1 "Multidomain peptides for inflammation and angiogenic mediated tissue regeneration."	Kumar (PI)	09/13-08/16
AHA (10PRE 3060026) "Biomimetic arterial grafts with mesenchymal stem cell based media equivalents.	Kumar (PI)	07/10-03/12

STUDY SECTION AND REVIEWER ACTIVITIES

Editorial board:

- Bioactive Materials
- Frontiers in Dentistry

Journals:

- Biomaterials
- ACS Omega
- Theranostics
- Materials Design
- Acta Biomaterialia
- Science Advances
- Bioactive Materials
- Tissue Engineering
- Biomacromolecules
- Polymer International
- Molecular Therapeutics
- ACS Applied Biomaterials
- Public Library of Science One
- Chemical Engineering Journal
- Advanced Healthcare Materials
- Journal of AIDS and HIV Infections
- ACS Applied Materials and Interfaces
- Journal of Biomedical Materials Research
- Drug Delivery and Translational Research
- ACS Biomaterials Science and Engineering

Conferences:

- Biomedical Engineering Society (reviewer)
- Materials Research Society (2019 - session chair)
- Northeast Bioengineering Conference (session chair 2017)
- Society for Biomaterials (reviewer)
- AiChE - Regenerative Engineering Society Symposium (session chair 2020)

Funding organizations:

- NIH (VIBT) panel - 2019-present
- NSF SBIR/STTR panel - 2016-present
- NJIT Faculty seed grant - 2019

- Oak Ridge Associated Universities grants panel - 2018
- US-Israel Binational Science Foundation (BSF) - 2020-present
- King Abdullah University of Science and Technology, CRG program - 2020-present

AWARDS AND ACHIEVEMENTS

- Member, National Academy of Inventors, 2021
- SFB Meeting 1st Place Cardiovascular Biomaterials SIG Poster Award, 2018
- Mid Atlantic BioAngels – Winner of "Best of the Best", 2016
- Mid Atlantic BioAngels – Winner of 1st Pitch competition, 2016
- Massachusetts Medical Device Development – Finalist, 2016
- Mass Challenge – Finalist, 2016
- OPEN, NangioTx, Inc – Winner of start-up pitch competition ($10,000), 2015
- TMC_x Bioventures, NangioTx, Inc – Winner of start-up pitch competition ($10,000), 2015
- Materials Research Society - Symposium Travel Award, 2014
- Gordon Research Conference - Biomaterials & Tissue Engineering Outstanding Poster, 2013
- Harold B. Gotaas Award - Outstanding Research, Northwestern University, 2006
- Undergraduate Research Honors - Research and Academic Accomplishment, Northwestern University, 2006
- Top prize in engineering design competition, Northwestern University, 2004

TEACHING EXPERIENCE

Professor:

- Introduction to Biomaterials, BME 304, Undergraduate level: Fall 2020
- Engineering Better Medicines, H-BME 450, Undergraduate level: Spring 2019, Spring 2020, Spring 2021
- Advanced Synthesis and Characterization of Biomaterials, BME 655, Graduate level: Fall 2018, Fall 2019, Spring 2021
- Advanced Biomaterials, BME 420, Undergraduate level: Fall 2017, Spring 2018, Spring 2019, Spring 2020, Spring 2021
- Biomedical Translation and Entrepreneurship, BME 698, Graduate level: Spring 2017

Lecturer / Teaching Assistant:

- Biofluid mechanics, Fall 2008 and Lecturer, Georgia Institute of Technology, Fall 2009 & 2010
- Problem Based Learning, Georgia Institute of Technology, Spring 2010
- Engineering and Design, Georgia Institute of Technology, Spring 2009

SKILLS

- Fluent in written and conversational German

MENTORED STUDENTS

Post-Doctoral Fellows:

1. Peter Nguyen Ph.D., Self-assembling peptides for tissue engineering, NJIT, 2016-2019, Currently PM at Regeneron
2. Biplab Sarkar, Ph.D., Drug delivery and smart polymers, NJIT, 2017-2020, currently apply to Faculty positions
3. Stephen Rodgers, Ph.D., Becton Dickinson, 2017-2018
4. Maria Nikmanesh, Ph.D., Cytocompatibility analysis of MDP, 2018 summer
5. Amanda Acevedo-Jake, Ph.D., Understanding self-assembly and its impact on ocular disease, 2020-present

Doctoral Fellows:

1. Ka-Kyung Kim, MA, Tuning inflammatory phenotypes, towards PhD, NJIT, 2018-present
2. Zain Siddiqui, MS, Caging functional domains on peptide, towards PhD, NJIT, 2019-present
3. Victoria Harbour, MS, NSF GRFP, Cholesterol Lowering peptides, MS, NJIT, 2019-2020, currently at Stanford Medical School.
4. Kaytlyn Crowe, MS, NSF I-Corps funded, Advanced medical devices for oral healthcare, MS, NJIT, 2020-2021
5. Abhishek Roy, BS, Determining the in vivo tracking of peptides, towards PhD, 2020-present

Undergraduates at NJIT:

1. Akhil Dondapati, Engineered scaffolds for neural regeneration, BS-MD, NJIT, current a medical students at NJMS, 2016-2017
2. Henry Cabral, Hydrogel-based HIV vasccines, BS-MS, NJIT, 2016-2017
3. Karen Mandarina, Hemostats and anti-coagulant peptides, BS, NJIT, 2016-2018
4. William Gao, Dental pulp tissue engineering, BS-DDS, NJIT, 2016-2019
5. Anthony Chiryath, Hydrogel stem cell carriers, BS-MD, NJIT, 2016- 2018
6. Rohit Premkumar, Tissue engineered vascular grafts, NSF i-Corps entrepreneurial lead, NJIT, 2016- 2019
7. Sruti Rachapudi, Ocular drug delivery for diabetic retinopathy, BS-MD, NSF i-Corps entrepreneurial lead, NJIT, 2016- 2019
8. Sheryl Jacob, Engineering and delivery stem cell derived islets for diabetes, BS-MD, NJIT, 2016- 2018
9. Patricia Iglesias, Immunotherapeutics for treatment of cancers, BS, NJIT, 2016- 2019
10. Ghiday Lamptey, Beta sheets to treat Alzheimer's, BS NJIT, 2017-2018
11. Aloisio Campanha, Non-invasive tissue regeneration, BS, 2017-2018
12. Jasper Davey, Pullup App, BS, NJIT, 2017-2018
13. Ankur Raval, Pullup App, BS, NJIT, 2017
14. Chad Charles, Pullup App, BS, NJIT, 2017
15. Christopher Magesty, Pullup App, BS, NJIT, 2017-2019
16. Vinicius Frigatti, Pullup App, BS, NJIT, 2017-present
17. Victoria Harbour, PCSK-9 mimics for cholesterol mitigation, BS, NJIT, 2017-2019
18. Shivani Jaisinghani, Antibacterial peptides, BS, NJIT, 2017-2019
19. Saloni Patel, Dental pulp tissue engineering, BS, NJIT, 2017-2019
20. Ashley Fitzsimmons, Rapid STD screen, BS, NJIT, 2017-2018
21. Bernadette Huynh, Rapid STD screen, BS, NJIT, 2017-2018
22. Sadie Gann, Rapid STD screen, BS, NJIT, 2017-2018
23. Allesandro Howells, Rapid STD screen, BS, NJIT, 2017-2018
24. Salam Hashmi, Alzheimer's binding of peptides, 2017-2018
25. Ines Vujkovac, Computational modelling of peptide binding, 2017-2018

26. Harsh Vyas, Optimizing ELISA for PCSK-9 binding, BS, NJIT, 2018-2019
27. Ruhi Naik, Drug release from peptide hydrogels, BS, NJIT, 2018-2019
28. Kayla Mitchell, Optimizing small molecule release from hydrogels, BS, NJIT, 2018-2019
29. Ayesha Ali, Salivary calcification of MDP for neo-cementum regeneration, BS, NJIT, 2017-2019
30. Natalie Kozan, Rheometric analysis of peptide hydrogels, NJIT, 2018-2019
31. Arjun Kumar, Optimizing decellularization of blood vessels, BS, NJIT, 2018-present
32. Manali Patel, Culture and polarization of THP-1 leukocytes, BS, NJIT, 2018-2020
33. Xavier Reyers, Modelling in Blender, BS, NJIT, 2018-2019
34. Anna Mathew, Optimization of peptide synthesis, BS-MD, NJIT, 2018-present
35. Sreya Sanyal, Cholesterol metabolism, BS, NJIT, 2018-present
36. Waleed Mujib, Evaluating cellular infiltration of implants, NJIT, 2018-2019
37. Reshma Paul, Evaluation of anti-microbial effect of peptide, BS, NJIT, 2018-2020
38. Julia DeLorenzo, Stablization of vaccines, BS, NJIT, 2019-present
39. Akash Dontamsetty, Purification of molecular drug, BS, NJIT, 2019
40. Shareef Syed, Stability of peptide conjugates, BS, NJIT, 2019-present
41. Nurten Kadincesme, Pulp regeneration in rats, BS, NJIT, 2019-present
42. Kamiya Patel, Developing SAPH vaporizable materials, BS, NJIT, 2019-present
43. Jeena Kataria, Optimizing small molecule oral delivery of thixotropic polymers, BS, NJIT, 2019-present
44. Aryan Mahajan, Angiogenesis in Zebrafish, BS, NJIT, 2019-present
45. Disha Panchal, Delivery of RNA from hydrogels, BS, NJIT, 2019-present
46. Paolo Elguera, Intracellular CRISPR, BS, NJIT, 2019-present
47. Ramita Sajankila, Transintestinal cholesterol efflux, BS, NJIT, 2020-present
48. Dana Hindi, Gels for wound healing, BS, NJIT, 2020-present
49. Abdul Azizogli, Drugs to treat COVID, BS, NJIT, 2020-present
50. Varun Pai, Small molecule COVID therapeutics, BS, NJIT, 2020-present
51. Lucian Mahadeo, Molecular design of drugs, BS, NJIT, 2020-present
52. Oliver Gu, Studying the VEGF-QK axis, BS, NJIT, 2020-present

High School students:
1. Aman Mittal, Dental pulp regeneration (student mentor Saloni Patel), summer 2017, 2018
2. Vinod Rangaprasad, Neural regeneration (student mentor Patricia Iglesias-Montoro), summer 2017
3. Maria Pepper, Small molecule release from hydrogels, summer 2018
4. Heera Bandi, fabrication of electric toothbrushs, summer 2019

Prior to NJIT (<06/2016):
Graduate:
1. Jim Zhong, Elastin mimetic project, Emory University, currently Asst. Prof. Radiation Oncology, Emory University, 2009-2010
2. Thomas Ruffin, Collagen fiber project, Florida State University, pediatrician at Orlando Regional Medical Center, 2009-2010
3. Keon-Young Park, Cellularization of composites project, Emory University MD-PhD program, 2010
4. Navindee Wickremasinghe, Biocompatibility of synthetic peptide scaffolds, Rice University, 2012-present
5. I-Che Li, Encapsulation and delivery of small molecules in hydrophobic peptide cores, 2013-present
6. Yu Xiao, Synthetic mimics to promote neural regeneration, Rice University, 2015-present

Undergraduate:
1. Joseph Mets, Venous valve project, Georgia Institute of Technology, President's Scholar, current surgical resident at Brigham and Women's (HMS), 2008-2010
2. Jeong Kim, Collagen fibers for tissue engineering, Georgia Institute of Technology, URS program, President's Scholar, currently a post-doc at Hanyang University, 2008-2010
3. Carrie Ripberger, Collagen fibrillogenesis, Georgia Institute of Technology, URS program, Director of Marketing at Emulate, 2008-2009
4. Megan Collins, Collagen alignment, Emory University, currently internal medicine resident at U Minnesota, 2009-2010
5. Sarah Norred, Collagen alignment, Georgia Institute of Technology, currently a PhD student the Oak Ridge National Lab, 2009-2010
6. Dana Greisman, Collagen mat development, Emory University, currently working at the Hospital for Sick Children, 2009-2010
7. Rohini Swamy, Collagen mat characterization, Emory University, 2010-2011
8. Kimberly Frutoz, Cellularization of novel biomaterials project, UCB PhD student, University of California Los Angeles, 2011-2012
9. Supriya Jain, Novel mechanically reinforced biomaterials, Team lead at Parthenon-EY, Boston University, 2011-2012
10. John Dingus, Vascular graft evaluation and design, Harvard University, currently a graduate student at Harvard University, 2011-2012
11. Lyahn Hwang, Hemocompatibility of multi-domain peptides, Rice University, currently a plastics resident at Montefiore, 2012-2013
12. Nichole Taylor, Immunogenicity of multi-domain peptides, Rice University, currently a OBGYN resident at UT Southwestern Medical Center, 2012-2014
13. Jiating Jiang, Evaluation of matrix mimetic polymers for therapeutic angiogenesis, Rice University, currently a medical student at Baylor College of Medicine, 2013-2014
14. Maire Gavangan, Peptide synthesis, purification and quality control, currently a PhD student at University of Washington, 2013-2014
15. Benjamin Wang, Design of synthetic collagen mimetics for tissue engineering, currently a medical student at UT Southwestern Medical School, Rice University, 2013-2016
16. Siyu Shi, Use of multidomain peptides for aneurysm filling, currently a medical student at Stanford University, 2013-2016
17. Ryan Cox, Intellectual property analysis of peptide mimics, Rice University, 2015-2016

THESES

V. Kumar. Design and Evaluation of Scaffolds for Arterial Grafts using Extracellular Matrix Based Materials. Ph.D Thesis.
Advisor: Elliot Chaikof M.D., Ph.D. Department of Biomedical Engineering, Georgia Institute of Technology. 2011
V. Kumar. PLLA-PDC/POC Nanocomposites for Tissue Engineering. B.Sc Thesis.
Advisor: Guillermo Ameer Sc.D. Department of Biomedical Engineering, Northwestern University. 2006