

Jinho Kim, PhD

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CURRENT POSITION

Assistant Professor, Biomedical Engineering Dept., Stevens Institute of Technology 08/2018 – Present

EDUCATION

PhD, Mechanical Engineering, GPA: 3.83, Columbia University, New York, NY 10/2013
MPhil, Mechanical Engineering, GPA: 3.83, Columbia University, New York, NY 10/2012
MS, Mechanical Engineering, GPA: 3.96, Temple University, Philadelphia, PA 05/2009
BS, Mechanical Engineering, GPA: 3.87, *Highest honors*, Temple University, Philadelphia, PA 05/2007

GRANTS & FELLOWSHIPS

Columbia University SEAS Translational Fellows Program 04/2016 – 04/2017
Partial stipend support (\$15,000/year) for one year.
Raymond and Beverly Sackler Foundation Pilot Research Grant 09/2013 – 09/2015
Full stipend support (\$54,000/year) for two years.

AWARDS AND HONORS

Recipient, Travel Grant to GEM-ASEE Doctoral Engineering Research Showcase 2018
Finalist, Idea Pitch Competition organized by KITEE 2017
Awardee, Translational Fellows Award at Columbia University SEAS 2016
Recipient, Young Investigator Travel Grant to TERMIS Americas 2014 conference 2014
Finalist, Outstanding Poster Paper at MEMS 2013 conference 2013
Recipient, Pilot Research Grant by Raymond and Beverly Sackler Foundation 2013
Recipient, Student Travel Grant to MEMS 2012 conferences 2012
Recipient, Student Travel Grant to Transducers 2011 conference 2011
Recipient, Conference Travel Grant by Robert and Mary Haythornthwaite Foundation 2008
Finalist, 2007 Collegiate Inventors Competition organized by the USPTO 2007
Winner, Best Senior Design Project with Ridenour Prize at Temple University 2007
Recipient, Conference Travel Grant by Robert M. and Mary Haythornthwaite Foundation 2007
Awardee, President's Scholar Award at Temple University 2007
Awardee, Undergraduate Diamond Research Scholar at Temple University 2006

PROFESSIONAL EXPERIENCE

Associate Research Scientist, Biomedical Engineering Dept., Columbia University 09/2017 – 08/2018

- Development of image-guided technologies for regeneration of functional human lungs.
- Establishment of a fluid mechanics model for understanding transport of pulmonary liquid and surfactant.
- Development of microscopic systems for visualizing cells and molecules in deep tissues of animals.

Postdoctoral Research Scientist, Biomedical Engineering Dept., Columbia University 09/2013 – 09/2017

- Bioengineering of human lungs using cell replacement technologies.
- Development of a mathematical model for delivery of liquid-based drugs into selected lung regions.
- Creation of a computer-vision guided device for targeted drug delivery into pathologic sites in the lungs.

Research Assistant, Mechanical Engineering Dept., Columbia University 09/2009 – 07/2013

- Development of microfluidic devices for enrichment of target-binding nucleic acids.
- Generation of nano-biosensors for sensitive and rapid detection of biomarkers in biological samples.
- Development of a microchip for light- and temperature-induced migration of cells and microorganisms.

Research Assistant, Mechanical Engineering Dept., Temple University 09/2007 – 05/2009

- Formulation of mathematical equations for predicting transport behaviors of inhaled particles.
- Establishment of a heat-transfer model for estimating temperature distribution on the human face.
- Creation of an electro-mechanical actuator for energy-efficient control of airplane wing flaps.

REFERRED JOURNAL PUBLICATIONS

1. Brandon A. Guenthart, John D. O'Neill, **Jinho Kim**, Kenmond Fung, Gordana Vunjak-Novakovic, "Cell Replacement in Human Lung Bioengineering", (2018), (Under review at **Journal of Heart and Lung Transplantation**).
2. Stephen P. Ma, Olaia F. Vila, **Jinho Kim**, LouJin Song, Danielle Huang, Harry Chiang, Kam Leong, Masayuki Yazawa, and Gordana Vunjak-Novakovic, "Spatiotemporal Control of Spiral Waves in Human Cardiac Cell Models through Optogenetics", (2018), (In revision at **Cell Stem Cells**).
3. Benjamin W. Lee, Bohao Liu, Koki Nakanishi, Aranzazu Villasante, Rebecca Williamson, Jordan Metz, **Jinho Kim**, Kristy Brown, Gilbert Di Paolo, Shunichi Homma, Peter A. Sims, Veli K. Topkara, and Gordana Vunjak-Novakovic, "Cell Free Approach to Cardiac Recovery by Extended Delivery of iPSC-Derived Cardiomyocyte Exosomes", **Nature Biomedical Engineering**, 2, 293-303, (2018). ***Editorial**, "Paved Ways Through Delivery Barriers", **Nature Biomedical Engineering** 2, 267-268, ***News and Views**, Todd R. Heallen and James F. Martin, "Heart Repair via Cardiomyocyte-Secreted Vesicles", **Nature Biomedical Engineering** 2, 267-268, (2018). ***Cover of the journal**.
4. **Jinho Kim**, Brandon Guenthart, John O'Neill, N. Valerio Dorrello, Matthew Bacchetta, Gordana Vunjak-Novakovic, "Controlled Delivery and Minimally Invasive Imaging of Stem Cells in the Lung", **Scientific Reports**, 7:13082, (2017).
5. Aranzazu Villasante, Katsuhisa Sakaguchi, **Jinho Kim**, Nai-Kong Cheung, Masamichi Nakayama, Hesam Parsa, Teruo Okano, Tatsuya Shimizu, and Gordana Vunjak-Novakovic, "Vascularized Tissue-Engineered Model for the Study of Drug Resistance in Neuroblastoma", **Theranostics**, 7:17, 4099-4117, (2017).
6. N. Valerio Dorrello, Brandon A. Guenthart, John D. O'Neill, **Jinho Kim**, Mauer Biscotti, Katherine Cunningham, Theresa Swayne, Holly M. Wobma, Matthew Bacchetta, and G. Vunjak-Novakovic, "Functional Vascularized Lung Grafts for Lung Bioengineering", **Science Advances**, 3(8), e1700521, (2017). *Highlighted in **Science** Vascularized grafts for lungs, 357(6354):883, (2017).
7. Brandon Guenthart, John D. O'Neill, **Jinho Kim**, Gordana Vunjak-Novakovic, and Matthew Bacchetta, "Advanced Theranostics in Ex-Vivo Lung Bioengineering", **The Journal of Heart and Lung Transplantation**, 36(4), S67-S68, (2017).
8. John O'Neill, Brandon Guenthart, **Jinho Kim**, Scott Chicotka, Dawn Queen, Kenmond Fung, Charles Marboe, Alexander Romanov, Sarah Huang, Ya-Wen Chen, Hans-Willem Snoeck, Matthew Bacchetta, and Gordana Vunjak-Novakovic, "Cross-Circulation for Extracorporeal Support and Recovery of the Lung", **Nature Biomedical Engineering**, 1:0037, (2017). ***News and Views**, Leonidas Tapias and Harald C Ott, "Lung Repair via Cross-Circulation", **Nature Biomedical Engineering** 1:0052, (2017).
9. **Jinho Kim**, Timothy Olsen, Jing Zhu, John Hilton, Kyung-Ae Yang, Renjun Pei, Milan Stojanovic, and Qiao Lin, "Integrated Microfluidic Isolation of Aptamers Using Electrophoretic Oligonucleotide Manipulation", **Scientific Reports**, 6:26139, (2016).
10. Timothy Olsen, Jing Zhu, **Jinho Kim**, Renjun Pei, Milan Stojanovic, and Qiao Lin, "An Integrated Microfluidic SELEX Approach Using Combined Electrokinetic and Hydrodynamic Manipulation", **Journal of Laboratory Automation**, 22(1): 63-72, (2016).
11. **Jinho Kim**, John O'Neill, and Gordana Vunjak-Novakovic, "Rapid Retraction of Microvolume Aqueous Plugs Traveling in a Wettable Capillary", **Applied Physics Letters**, 107(14), 144101-144104, (2015).
12. **Jinho Kim**, John O'Neill, N. Valerio Dorrello, Matthew Bacchetta, and Gordana Vunjak-Novakovic, "Targeted Delivery of Liquid Micro-Volumes into the Lung", **Proceedings of the National Academy of Sciences of the USA**, 112(37), 11530-11535, (2015). *Featured as Editor's Choice, **Science Translational Medicine**, Vol. 7, Issue 307, (2015).
13. John Hilton, Timothy Olsen, **Jinho Kim**, Jing Zhu, ThaiHuu Nguyen, Mihaela Barbu, Renjun Pei, Milan Stojanovic, and Qiao Lin, "Isolation of Thermally Sensitive Protein-Binding Oligonucleotides on a Microchip", **Microfluidics and Nanofluidics**, 19(4), 795-804, (2015).
14. Cheng Wang*, **Jinho Kim***, Jaeyoung Yang, Yibo Zhu, Gwan-Hyoung Lee, Sunwoo Lee, Jaeun Yu, Renjun Pei, Guohua Liu, Colin Nuckolls, James Hone, and Qiao Lin, "An Aptameric Graphene Nanosensor for Label-Free Detection of Small-Molecule Biomarkers", **Biosensors and Bioelectronics**, 71:222-229, (2015), *Equal contribution authors.
15. **Jinho Kim**, Timothy Olsen, Xuye Zhuang, Ji Luo, Jun Yao, Milan Stojanovic, and Qiao Lin, "Formation and Stimuli-Directed Migration of *D. discoideum* Slugs in Microchips", **Journal of Medical and Biological Engineering**, 33 (3), 263-268 (2013).

16. **Jinho Kim**, John Hilton, Kyung-Ae Yang, Renjun Pei, Milan Stojanovic, and Qiao Lin, "Nucleic Acid Isolation and Enrichment on a Microchip", *Sensors and Actuators A: Physical*, 195, 183-190 (2013).
17. **Jinho Kim**, Herbert Ennis, ThaiHuu Nguyen, Xuye Zhuang, Ji Luo, Jun Yao, Richard Kessin, Milan Stojanovic, and Qiao Lin, "Light-Directed Migration of *D. discoideum* Slugs in Microfabricated Confinements", *Sensors and Actuators A: Physical*, 188, 312-319 (2012).
18. Parsaoran Hutapea, **Jinho Kim**, Andrew Guion, Charlie Hanna, and Noah Heulitt, "Development of a Smart Wing", *Aircraft Engineering and Aerospace Technology*, 80, 439-444 (2008).

BOOK CHAPTERS

1. **Jinho Kim**, Kelsey Kennedy, and Gordana Vunjak-Novakovic, "Bioreactors in Regenerative Medicine", *Principles of Regenerative Medicine*, 3rd Edition, Edited by Atala, Lanza, & Mikos (In press).

PATENTS & INVENTIONS

1. **Jinho Kim**, Gordana Vunjak-Novakovic, John O'Neill, and Matthew Bacchetta, "Method and Apparatus for Targeted Drug Delivery of Small Liquid Volumes into Selected Regions of the Lung", International Patent Application Submitted, (2018).
2. Holly Wobma, **Jinho Kim**, and Gordana Vunjak-Novakovic, "Smart Polymers for Protection, Stabilization, Modification and Simple Recovery of Adherent Cells", Invention Report Submitted, (2017).
3. Matthew Bacchetta, Brandon Guenthart, John O'Neill, **Jinho Kim**, and Gordana Vunjak-Novakovic, "Thermography and Evaluation of Thermal Recovery to Access, Monitor, and Characterize Organ Health", US Provisional Patent Application Submitted, (2017).
4. Matthew Bacchetta, Brandon Guenthart, **Jinho Kim**, John O'Neill, and Gordana Vunjak-Novakovic, "Biomechanically Compliant Therapeutic Lung Bio-Sealant: Loadable Lung Extracellular Matrix Hydrogel with Thermogel Patch", US Provisional Patent Application Submitted, (2017).
5. Qiao Lin, **Jinho Kim**, John Hilton, Jing Zhu, Milan Stojanovic, and Renjun Pei, "Isolation and Enrichment of Nucleic Acid on Microchip", International Patent Application, WO2013044217 A1 (2012).

REFEREED CONFERENCE PUBLICATIONS

1. **Jinho Kim**, John O'Neill, Brandon Guenthart, N. Valerio Dorrello, Matthew Bacchetta, and Gordana Vunjak-Novakovic, "Minimally Invasive In Situ Imaging of Intra-Tracheally Administered Therapeutic Stem Cells in the Lung", Optics in the Life Sciences 2017, San Diego, CA, USA (Apr. 2017)
2. Brandon Guenthart, John O'Neill, **Jinho Kim**, Kenmond Fung, Sarah X.L. Huang, Hans-Willem Snoeck, Gordana Vunjak-Novakovic, and Matthew Bacchetta, "Cell Replacement Therapy in Human Lung Bioengineering", 2017 AATS, Boston, MA, USA (Apr. 2017).
3. **Jinho Kim**, John O'Neill, N. Valerio Dorrello, Matthew Bacchetta, and Gordana Vunjak-Novakovic, "Delivery of Liquid Micro-Volumes into Targeted Regions of the Lung", MicroTAS 2015, Gyeongju, South Korea (Oct. 2015).
4. **Jinho Kim**, John O'Neill, and Gordana Vunjak-Novakovic, "Spontaneous Surface Tension-Induced Displacement of a Liquid Plug in a Capillary Tube", MicroTAS 2015, Gyeongju, Korea (Oct. 2015).
5. Cheng Wang, **Jinho Kim**, Jing Zhu, Renjun Pei, Guohua Liu, James Hone, Milan Stojanovic, and Qiao Lin, "Graphene Nanosensor for Detection of Small Molecules", 2014 IEEE 27th International Conference on Micro Electro Mechanical Systems, 1075-1078, San Francisco, USA (Jan. 2014).
6. **Jinho Kim**, John Hilton, Kyung-Ae Yang, Renjun Pei, Milan Stojanovic, and Qiao Lin, "An Electrokinetically Controlled Microchip for Studying Binding Interactions of Nucleic Acids with Cells", The 17th International Conference on Solid-State Sensors, Actuators and Microsystems, 1190-1193, Barcelona, Spain (Jun. 2013).
7. Qiao Lin, **Jinho Kim**, Jing Zhu, Jaeyoung Yang, John Hilton, ThaiHuu Nguyen, Renjun Pei, Kyung-Ae Yang, and Milan Stojanovic, "Integrating Aptamers and Microfluidics for Biological Manipulation and Sensing", 2013 8th IEEE International Conference on Nano/Micro Engineered and Molecular Systems, 1245-1248, Suzhou, China (Apr. 2013).
8. **Jinho Kim**, John Hilton, Kyung-Ae Yang, Renjun Pei, Jing Zhu, Milan Stojanovic, and Qiao Lin, "Electrokinetically Integrated Microfluidic Isolation and Amplification of Biomolecule- and Cell-Binding Nucleic Acids", 2013 IEEE 26th International Conference on Micro Electro Mechanical Systems, 1007-1010, Taipei, Taiwan (Jan. 2013), (**Nominated as an Outstanding Poster Paper**).

9. **Jinho Kim**, John Hilton, Kyung-Ae Yang, Renjun Pei, Milan Stojanovic, and Qiao Lin, “Electrokinetically Integrated Isolation and Amplification of Protein-binding Nucleic Acids on a Microchip”, The 16th International Conference on Miniaturized Systems for Chemistry and Life Sciences, 118-120, Okinawa, Japan (Oct. 2012).
10. **Jinho Kim**, John Hilton, Kyung-Ae Yang, Renjun Pei, Milan Stojanovic, and Qiao Lin, “A Microchip for Nucleic Acid Isolation and Enrichment”, 2012 IEEE 25th International Conference on Micro Electro Mechanical Systems, 765-768, Paris, France (Feb. 2012).
11. John Hilton, **Jinho Kim**, ThaiHuu Nguyen, Mihaela Barbu, Renjun Pei, Milan Stojanovic, and Qiao Lin, “Isolation of Thermally Sensitive Aptamers on a Microchip”, 2012 IEEE 25th International Conference on Micro Electro Mechanical Systems, 100-103, Paris, France (Feb. 2012).
12. **Jinho Kim**, Herbert Ennis, ThaiHuu Nguyen, Richard Kessin, Milan Stojanovic, and Qiao Lin, “Light-Directed Migration of *D. discoideum* Slugs in Microchannels”, The 16th International Conference on Solid-State Sensors, Actuators and Microsystems 2011, 322-325, Beijing, China (Jun. 2011).
13. **Jinho Kim** and Jim S. Chen, “Effect of Inhaling Patterns on Aerosol Drug Delivery: CFD Simulation”, ASME International Mechanical Engineering Congress & Exposition 2008, 83-91, Boston, MA (Nov. 2008).
14. Jim S. Chen and **Jinho Kim**, “Micro Particle Transport and Deposition in Human Upper Airways”, ASME International Mechanical Engineering Congress & Exposition 2007, 271-280, Seattle, WA (Nov. 2007).

CONFERENCE ABSTRACTS

1. Gordana Vunjak-Novakovic, Bohao Liu, John O’Neill, **Jinho Kim**, Kacey Ronaldson-Bouchard, “Bioengineered Stem Cell Niches”, 2018 TERMIS World Congress, Kyoto, Japan (Sept. 2018).
2. **Jinho Kim**, Brandon Guenthart, John O’Neill, Stephen Ma, Matthew Bacchetta, and Gordana Vunjak-Novakovic, “An Autonomous Bronchoscope for Drug Delivery into Target Regions in the Lungs”, 2017 TERMIS Americas, Charlotte, NC (Dec. 2017).
3. Aranzazu Villasante, Katsuhisa Sakaguchi, **Jinho Kim**, Nai-Kong Cheung, Masamichi Nakayama, Hesam Parsa, Teruo Okano, Tatsuya Shimizu, and Gordana Vunjak-Novakovic, “Perfusable Tissue-Engineered Model of Neuroblastoma for Studying Drug Resistance”, 2017 TERMIS Americas, Charlotte, NC (Dec. 2017).
4. Aranzazu Villasante, Katsuhisa Sakaguchi, **Jinho Kim**, Nai-Kong Cheung, Masamichi Nakayama, Hesam Parsa, Teruo Okano, Tatsuya Shimizu, and Gordana Vunjak-Novakovic, “Vascularized Tissue-Engineered Model for Studying Drug Resistance in Neuroblastoma”, 2017 BMES Annual Meeting, Phoenix, AZ (Oct. 2017).
5. Stephen Ma, Olaia Vila, **Jinho Kim**, Harry Chiang, Masayuki Yazawa, and Gordana Vunjak-Novakovic, “Spatiotemporal Control of Human Cardiac Tissue Using an Optogenetic Platform”, 2017 BMES Annual Meeting, Phoenix, AZ (Oct. 2017).
6. **Jinho Kim**, Brandon Guenthart, John O’Neill, Stephen P. Ma, Meera Cheerharan, Matthew Bacchetta, and Gordana Vunjak-Novakovic, “Machine-Vision Guided Spatially Targeted Drug Delivery in the Lungs”, 2017 BMES Annual Meeting, Phoenix, AZ (Oct. 2017).
7. **Jinho Kim**, John O’Neill, Brandon Guenthart, Matthew Bacchetta, and Gordana Vunjak-Novakovic, “Minimally Invasive Delivery and Imaging of Therapeutic Stem Cells in the Lung”, 2017 BMES/FDA Frontiers in Medical Devices Conference, Washington, DC (May 2017).
8. Stephen P. Ma, Olaia F. Vila, **Jinho Kim**, Harry Chiang, Eugenia C. White, Christopher Y. Shen, Masayuki Yazawa, and Gordana Vunjak-Novakovic, “Directing Differentiation of Human Embryonic Stem Cells into Distinct Populations of Neural Cells”, NYSTEM, New York, NY (May 2017).
9. **Jinho Kim**, John O’Neill, N. Valerio Dorrello, Brandon Guenthart, Matthew Bacchetta, and Gordana Vunjak-Novakovic, “Controlled Delivery of Therapeutic Cells and Microparticles into Target Lung Airways”, 2016 BMES Annual Meeting, Minneapolis, MN (Oct. 2016).
10. Brandon Guenthart, **Jinho Kim**, John O’Neill, N. Valerio Dorrello, Matthew Bacchetta, and Gordana Vunjak-Novakovic, “A Stem Cell-Seeded Porous Hydrogel Patch for Treatment of Alveolar Air Leaks”, 2016 BMES Annual Meeting, Minneapolis, MN (Oct. 2016).
11. **Jinho Kim**, John O’Neill, N. Valerio Dorrello, Matthew Bacchetta, and Gordana Vunjak-Novakovic, “Targeted Delivery of Liquid Microvolumes into the Lungs”, 2015 TERMIS World Congress, Boston, MA (Sept. 2015).

12. **Jinho Kim**, John O'Neill, N. Valerio Dorrello, Matthew Bacchetta, and Gordana Vunjak-Novakovic, "Deposition of Liquid Film onto Target Airway Surfaces of the Lung", 2015 BMES Annual Meeting, Tampa, FL (Oct. 2015).
13. **Jinho Kim**, John O'Neill, and Gordana Vunjak-Novakovic, "Instantaneous Surface Tension-Induced Displacement of a Small-Volume Liquid in a Capillary", 2015 BMES Annual Meeting, Tampa, FL (Oct. 2015).

INVITED PRESENTATIONS

1. **Resolving the Donor Lung Shortage**, Cornell University, Ithaca, NY (Apr. 2018).
2. **A Multidisciplinary Regenerative Medicine Approach to Resolving the Donor Lung Shortage**, Drexel University, Philadelphia, PA (Feb. 2018).
3. **Image-Guided Ex Vivo Lung Regeneration**, Stevens Institute of Technology, Hoboken, NJ (Dec. 2017).
4. **Tissue Engineering Human Lung**, Korean Biologists at Columbia University, New York, NY (Dec. 2017).
5. **Visually Assisted Lung Regeneration**, Children's Hospital of Philadelphia, Philadelphia, PA (Nov. 2017).
6. **Minimally Invasive Delivery and Imaging of Therapeutic Stem Cells in the Lung**, 2017 BMES/FDA Frontiers in Medical Devices Conference, Washington, DC (May 2017).
7. **Image-Guided Lung Regeneration**, The City College of New York, New York, NY (Mar. 2017).
8. **Synthetic Artificial Organs vs. Bioartificial Organs**, Columbia University, New York, NY (Mar. 2017).
9. **Concise Review: Bioartificial Organs**, The City College of New York, New York, NY (Mar. 2017).
10. **Controlled Delivery and Minimally Invasive Imaging of Therapeutic Cells in the Lungs**, 2016 Columbia University Postdoc Research Symposium, New York, NY, USA, (Oct. 2016).
11. **Controlled Delivery and In Situ Imaging of Therapeutic Cells in the Lungs**, 2016 BMES Annual Meeting, Minneapolis, MN, USA, (Oct. 2016).
12. **Artificial Organs: Where are we now?**, The City College of New York, New York, NY (Mar. 2016).
13. **Delivery of Liquid Micro-Volumes into Targeted Regions of the Lung**, MicroTAS 2015, Gyeongju, South Korea, (Oct. 2015).
14. **Spontaneous Surface Tension-Induced Displacement of a Liquid Plug in a Capillary Tube**, MicroTAS 2015, Gyeongju, Korea, (Oct. 2015).
15. **Targeted Delivery of Liquid Micro-Volumes into the Lungs**, 2015 TERMIS World Congress, Boston, MA, USA, (Sept. 2015).
16. **Targeted Delivery of Liquid Micro-Volumes into the Lung**, The 10th Stem Cells, Cell Therapies, and Bioengineering in Lung Biology and Lung Diseases Conference, Burlington, Vermont, USA, (July 2015).
17. **Manipulation of Biological Samples for Biomedical Applications**, Yonsei University, Seoul, South Korea, (Jan. 2015). (Invited oral presentation).
18. **Microfluidic and Computational Approaches for Enhancing Generation of Target-binding Nucleic Acids**, Brookhaven National Laboratory, Upton, NY, USA, (Jan. 2013). (Invited oral presentation).
19. **Electrokinetically Integrated Isolation and Amplification of Protein-binding Nucleic Acids on a Microchip**, MicroTAS 2012, Okinawa, Japan, (Oct. 2012).
20. **A Microchip for Nucleic Acid Isolation and Enrichment**, MEMS 2012, Paris, France, (Feb. 2012).
21. **Light-Directed Migration of D. discoideum Slugs in Microchannels**, Transducers 2011, Beijing, China, (Jun. 2011).
22. **Fly by Heat-Smart Wing: to create an airfoil with flaps controlled by SMA actuation**, Greater Philadelphia AIAA/ASME mini-symposium, Philadelphia, PA, USA, (Dec. 2007).
23. **Effect of Inhalation Patterns on Aerosol Drug Delivery in Human Upper Airways**, Greater Philadelphia AIAA/ASME mini-symposium, Philadelphia, PA, USA, (Dec. 2007).
24. **Microparticle Transport and Deposition in Human Upper Airways**, ASME IMECE 2007, Seattle, WA, USA, (Nov. 2007).

TEACHING EXPERIENCE

Guest Lecturer , Biomedical Engineering Dept., Columbia University	03/2017
Course: Bioreactor Systems	
Guest Lecturer , Biomedical Engineering Dept., CCNY	03/2016, 03/2017
Course: Translational Challenges in Diagnostics, Devices and Therapeutics	
Teaching Assistant , Biomedical Engineering Dept., Columbia University	09/2014 – 12/2015
Courses: Biological Transport and Rate Processes	

Teaching Assistant, Mechanical Engineering Dept., Columbia University

09/2009 – 05/2010

Courses: Fluid Mechanics, Advanced Thermodynamics, BioMEMS

Teaching Assistant, Mechanical Engineering Dept., Temple University

09/2007 – 05/2009

Courses: Fluid Mechanics, Thermodynamics, Dynamics, Heat and Mass Transfer

MENTORING EXPERIENCE

Postdoctoral researchers

Kelsey Kennedy (Columbia University, NY, 2017 – Present)

Ahmed Hozain (Columbia University Medical Center, NY, 2017 – Present)

Brandon Guenthart (Columbia University Medical Center, NY, 2015 – 2017)

Graduate students

Meghan Pinezich (Columbia University, NY, 2017 – Present)

Stephen Ma (Columbia University, NY, 2015 – 2017)

Holly Wobma (Columbia University, NY, 2016 – 2017)

John O'Neill (Columbia University, NY, 2013 – 2017)

Undergraduate students

Serena Chan (University of Michigan, MI, 2017)

Diane Kim (Columbia University, NY, 2013)

Yoo Chan Chang (Columbia University, NY, 2012)

Akiva Kevin Ennis (University of Pennsylvania, PA, 2011)

Boyu Fan (Caltech, CA, 2012)

Douglas Onyango (Columbia University, NY, 2011)

High school students

Serena Chan (Stuyvesant High School, NY, 2016)

Julius Frost (Bryn Athyn High School, PA, 2015)

Rosie Deng (White Plains High School, NJ, 2011)

Tony Yuan (Sayreville Wall Memorial High School, NJ, 2011)

Zhao Liu (Central High School of Philadelphia, PA, 2006)

International visiting students

Cheng Wang (Nankai University, China, 2011 – 2013)

Hao Sun (Harbin Institute of Technology, China, 2011 – 2013)

JOURNAL & ABSTRACT REVIEWS

Scientific Reports

Sensors and Actuators A: Physical

ACS Biomaterials Science & Engineering

2018 BMES conference

Analytical Chemistry

IEEE Transactions on Biomedical Engineering

Microarrays

ASME IMECE conference

PROFESSIONAL ACTIVITIES

Organization member

Biomedical Engineering Society (BMES)

American Society of Mechanical Engineers (ASME)

Korean-American Scientists and Engineers Association (KSEA)

Competition judge

First Round judge of 2018 Collegiate Inventors Competition

Seminar organizer

2018 Summer Workshop for TERC (Tissue Engineering Resource Center)