




Ngan Huang

Assistant Professor of Cardiothoracic Surgery (Cardiothoracic Surgery Research)

 NIH Biosketch available Online

 Curriculum Vitae available Online

Bio

BIO

Ngan F. Huang is an Assistant Professor in the Department of Cardiothoracic Surgery at Stanford University and Principal Investigator at the Veterans Affairs Palo Alto Health Care System. Dr. Huang completed her BS in Chemical Engineering from the Massachusetts Institute of Technology, followed by a PhD in bioengineering from the University of California Berkeley & University of California San Francisco Joint Program in Bioengineering. Prior to joining the faculty, she was a postdoctoral scholar in the Division of Cardiovascular Medicine at Stanford University. Her laboratory investigates the interactions between stem cells and extracellular matrix microenvironment for engineering cardiovascular tissues to treat cardiovascular and musculoskeletal diseases. Dr. Huang has authored over 70 publications and patents, including reports in Nat Med, PNAS, and Nano Lett. She has received numerous honors, including a NIH K99/R00 Career Development Award, Fellow of the American Heart Association, a Young Investigator award from the Society for Vascular Medicine, a Young Investigator Award from the Tissue Engineering and Regenerative Medicine International Society-Americas, and a Rising Star award at the Cell & Molecular Bioengineering conference. Her research is funded by the NIH, Department of Defense, California Institute of Regenerative Medicine, and Department of Veteran Affairs.

ACADEMIC APPOINTMENTS

- Assistant Professor, Cardiothoracic Surgery
- Member, Bio-X
- Member, Cardiovascular Institute
- Member, Maternal & Child Health Research Institute (MCHRI)
- Faculty Fellow, Stanford ChEM-H

ADMINISTRATIVE APPOINTMENTS

- Instructor, School of Medicine, (2010-2012)
- Biomedical Engineer, Veterans Affairs Palo Alto Health Care System, (2012- present)
- Assistant Professor, Cardiothoracic Surgery, (2013- present)
- Steering Committee Member, Cardiovascular Institute, (2013- present)
- Faculty Fellow, Stanford McCormick and Gabilan Faculty Award, (2015-2016)

HONORS AND AWARDS

- Jay D. Coffman Young Investigator Award, 2nd Place Winner, American Heart Association Council on Peripheral Vascular Disease, (2017)
- Rising Star Award, Cellular and Molecular Bioengineering Annual Conference (2017)
- Young Innovator Award, journal of Cellular and Molecular Bioengineering (2017)
- Young Investigator Award, Tissue Engineering and Regenerative Medicine-Americas (2017)

- Fellow of the American Heart Association (FAHA), American Heart Association (2016)
- Robert W Hobson II MD Early Career Investigator Award, American Heart Association Council on Peripheral Vascular Disease (2012)
- Jay D. Coffman Young Investigator Award, First Place in Basic Science, Society for Vascular Medicine (2011)
- NRSA Postdoctoral Fellowship, NIH (2009-2010)
- Postdoctoral Fellowship, American Heart Association (2008-2009)
- K99/R00 Pathways to Independence, NIH (09/01/10-Present)
- National Scientist Development Grant, American Heart Association (06/01/10-08/31/10)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Editorial Board Member, Communications Biology (2018 - present)
- Editorial Board Member, Frontiers in Cardiovascular Science (2018 - present)
- Editorial Board Member, Scientific Reports (2018 - present)
- Fellow of the American Heart Association (FAHA), 2016 American Heart Association Council on Peripheral Vascular Disease (2016 - present)
- Membership Committee Chair, International Society of Applied Cardiovascular Biology (ISACB) (2018 - present)
- Vice Chair, Cardiac & Vascular Regeneration and Remodeling Thematic Working Interest Group, Tissue Engineering and Regenerative Medicine-Americas (TERMIS-Am) (2017 - present)
- Diversity Committee, American Heart Association, Council on Arteriosclerosis Thrombosis and Vascular Biology, Subcommittee on Education and Community Outreach, (2017 - present)
- Web representative, Tissue Engineering Special Interest Group, Society for Biomaterials (2017 - present)
- Cardiovascular Committee Member, New Organ Alliance Roadmap (2017 - present)
- International Committee Member, Biomedical Engineering Society (2016 - present)
- Early Career and Fellows in Training Committee member, American Heart Association, Council on Peripheral Vascular Disease, (2014 - present)

PROFESSIONAL EDUCATION

- Doctor of Philosophy, University of CA Berkeley , Bioengineering (2006)
- Master of Science, University of CA Berkeley , Bioengineering (2005)
- Bachelor of Science, MIT , Chemical Engineering (2002)

PATENTS

- Ji Su, Ngan Huang. "United States Patent 7,252,884 Carbon Nanotube/fiber Reinforced Three Dimensionally Ordered Nano Scale Porous Carbon and the Process", NASA

LINKS

- Huang Lab Website: <http://huanglab.stanford.edu/>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

Dr. Huang's laboratory aims to understand the chemical and mechanical interactions between extracellular matrix (ECM) proteins and pluripotent stem cells that regulate vascular and myogenic function. The fundamental insights of cell-matrix interactions are applied towards stem cell-based therapies with respect to improving cell survival and regenerative capacity, as well as engineered vascularized tissues for therapeutic transplantation. Current projects focus on various aspects of mechanical and physical factors on tissue regeneration. Examples include:

1) Cellular Biomechanics for in High Through Chemical Screening: To develop new technology for high-throughput quantitative assessment of vascular endothelial cell biomechanics for cardiovascular drug screening. We hypothesize that cellular biomechanics can be a predictive biomarker of endothelial health.

2) Engineered Matrix Microarrays to Enhance the Regenerative Potential of iPSC-Derived Endothelial Cells: We propose to develop a combinatorial family of engineered ECMs (eECMs) with independently tunable biochemical and biomechanical cues, including stiffness and stress relaxation rate for high-throughput, matrix array studies of induced pluripotent stem cell-derived endothelial cell (iPSC-EC) survival and angiogenic potential. The optimally designed eECMs will then be coinjected with iPSC-EC for treatment of peripheral arterial disease in a mouse model of hindlimb ischemia (Sponsor: NIH).

3) iPSC-Derived Smooth Muscle Progenitors for Treatment of Abdominal Aortic Aneurysm: We propose to deliver human induced pluripotent stem cell-derived smooth muscle progenitors to the site of abdominal aortic aneurysm will replenish smooth muscle cells, enhance elastin production, and abrogate wall dilatation in a murine model (Sponsor: CIRM).

4) Vascularized Cardiac Patch with Physiological Orientation for Myocardial Repair: The aims are to engineer a vascularized aligned iPSC-derived CM (cardiomyocyte) patch and elucidating the molecular mechanisms of ECM-mediated nitric oxide signaling in enhancing iPSC-CM survival and phenotype; and to determine the therapeutic effect of a vascularized aligned iPSC-derived CM patch for treatment of myocardial infarction (Sponsor: Dept of Veteran Affairs).

Dr. Huang's laboratory research is funded by the National Institutes of Health, Department of Defense, California Institute for Regenerative Medicine, and the Department of Veteran Affairs.

Teaching

COURSES

2018-19

- Cardiovascular and Pulmonary Sciences Seminar: MED 223 (Aut, Win)
- Stem Cells in Cardiovascular Regenerative Medicine: CTS 225 (Spr)

2017-18

- Cardiovascular and Pulmonary Sciences Seminar: MED 223 (Aut, Win)

STANFORD ADVISEES

Postdoctoral Faculty Sponsor

Alex Ho Pang Chan, Esra Karaca, Mahdis Shayan, Maedeh Zamani

Doctoral Dissertation Advisor (AC)

Frank Charbonier

Postdoctoral Research Mentor

Esra Karaca

Publications

PUBLICATIONS

- **Treatment of volumetric muscle loss in mice using nanofibrillar scaffolds enhances vascular organization and integration** *COMMUNICATIONS BIOLOGY*
Nakayama, K. H., Quarta, M., Paine, P., Alcazar, C., Karakikes, I., Garcia, V., Abilez, O. J., Calvo, N. S., Simmons, C. S., Rando, T. A., Huang, N. F.
2019; 2
- **Engineering Biomimetic Materials for Skeletal Muscle Repair and Regeneration** *ADVANCED HEALTHCARE MATERIALS*
Nakayama, K. H., Shayan, M., Huang, N. F.

2019; 8 (5)

- **Engineering Biomimetic Materials for Skeletal Muscle Repair and Regeneration.** *Advanced healthcare materials*
Nakayama, K. H., Shayan, M., Huang, N. F.
2019; e1801168
- **Endothelial Cell Mechanotransduction in the Dynamic Vascular Environment** *ADVANCED BIOSYSTEMS*
Charbonier, F. W., Zamani, M., Huang, N. F.
2019; 3 (2)
- **Treatment of volumetric muscle loss in mice using nanofibrillar scaffolds enhances vascular organization and integration.** *Communications biology*
Nakayama, K. H., Quarta, M., Paine, P., Alcazar, C., Karakikes, I., Garcia, V., Abilez, O. J., Calvo, N. S., Simmons, C. S., Rando, T. A., Huang, N. F.
2019; 2: 170
- **Small Molecule Derived From Carboxyethylpyrrole Protein Adducts Promotes Angiogenesis in a Mouse Model of Peripheral Arterial Disease.** *Journal of the American Heart Association*
Hou, L., Yang, G., Tang, S., Alcazar, C., Joshi, P., Strassberg, Z., Kim, M., Kawamura, M., Woo, Y. J., Shrager, J., Ding, S., Huang, N. F.
2018; 7 (18): e009234
- **Rehabilitative exercise and spatially patterned nanofibrillar scaffolds enhance vascularization and innervation following volumetric muscle loss** *NPJ REGENERATIVE MEDICINE*
Nakayama, K. H., Alcazar, C., Yang, G., Quarta, M., Paine, P., Doan, L., Davies, A., Rando, T. A., Huang, N. F.
2018; 3: 16
- **Near-Infrared Iib Fluorescence Imaging of Vascular Regeneration with Dynamic Tissue Perfusion Measurement and High Spatial Resolution** *ADVANCED FUNCTIONAL MATERIALS*
Ma, Z., Zhang, M., Yue, J., Alcazar, C., Zhong, Y., Doyle, T. C., Dai, H., Huang, N. F.
2018; 28 (36)
- **Protein-engineered hydrogels enhance the survival of induced pluripotent stem cell-derived endothelial cells for treatment of peripheral arterial disease** *BIOMATERIALS SCIENCE*
Foster, A. A., Dewi, R. E., Cai, L., Hou, L., Strassberg, Z., Alcazar, C. A., Heilshorn, S. C., Huang, N. F.
2018; 6 (3): 614–22
- **Aligned Nanofibrillar Scaffolds for Controlled Delivery of Modified mRNA.** *Tissue engineering. Part A*
Zaitseva, T., Alcazar, C., Zamani, M., Hou, L., Sawamura, S., Yakubov, E., Hopkins, M., Woo, Y. J., Paukshto, M., Huang, N. F.
2018
- **Big bottlenecks in cardiovascular tissue engineering.** *Communications biology*
Huang, N. F., Serpooshan, V., Morris, V. B., Sayed, N., Pardon, G., Abilez, O. J., Nakayama, K. H., Pruitt, B. L., Wu, S. M., Yoon, Y., Zhang, J., Wu, J. C.
2018; 1: 199
- **Big bottlenecks in cardiovascular tissue engineering** *COMMUNICATIONS BIOLOGY*
Huang, N. F., Serpooshan, V., Morris, V. B., Sayed, N., Pardon, G., Abilez, O. J., Nakayama, K. H., Pruitt, B. L., Wu, S. M., Yoon, Y., Zhang, J., Wu, J. C.
2018; 1
- **Multicellular Interactions in 3D Engineered Myocardial Tissue.** *Frontiers in cardiovascular medicine*
Zamani, M., Karaca, E., Huang, N. F.
2018; 5: 147
- **Microfibrous Scaffolds Enhance Endothelial Differentiation and Organization of Induced Pluripotent Stem Cells** *CELLULAR AND MOLECULAR BIOENGINEERING*
Kim, J. J., Hou, L., Yang, G., Mezak, N. P., Wanjare, M., Joubert, L. M., Huang, N. F.
2017; 10 (5): 417–32
- **Delivery of Hepatocyte Growth Factor mRNA From Nanofibrillar Scaffolds for Treatment of Peripheral Arterial Disease**
Huang, N. F., Hou, L., Alcazar, C., Strassberg, Z., Hopkins, M., Zaitseva, T., Yakubov, E., Paukshto, M. V.
LIPPINCOTT WILLIAMS & WILKINS.2017
- **Combinatorial Extracellular Matrix Microenvironments for Probing Endothelial Differentiation of Human Pluripotent Stem Cells**
Hou, L., Kim, J. J., Wanjare, M. J., Patlolla, B., Coller, J., Natu, V., Hastie, T., Huang, N. F.

FEDERATION AMER SOC EXP BIOL.2017

- **Regulation of the microenvironment for cardiac tissue engineering.** *Regenerative medicine*
Wanjare, M., Huang, N. F.
2017; 12 (2): 187-201
- **A comparison of the pro-angiogenic potential of human induced pluripotent stem cell derived endothelial cells and induced endothelial cells in a murine model of peripheral arterial disease.** *International journal of cardiology*
Clayton, Z. E., Yuen, G. S., Sadeghipour, S., Hywood, J. D., Wong, J. W., Huang, N. F., Ng, M. K., Cooke, J. P., Patel, S.
2017
- **Boosting the down-shifting luminescence of rare-earth nanocrystals for biological imaging beyond 1500 nm.** *Nature communications*
Zhong, Y., Ma, Z., Zhu, S., Yue, J., Zhang, M., Antaris, A. L., Yuan, J., Cui, R., Wan, H., Zhou, Y., Wang, W., Huang, N. F., Luo, et al
2017; 8 (1): 737
- **Anisotropic microfibrinous scaffolds enhance the organization and function of cardiomyocytes derived from induced pluripotent stem cells.** *Biomaterials science*
Wanjare, M., Hou, L., Nakayama, K. H., Kim, J. J., Mezak, N. P., Abilez, O. J., Tzatzalos, E., Wu, J. C., Huang, N. F.
2017; 5 (8): 1567-78
- **Induced Pluripotent Stem Cell-Derived Endothelial Cells in Insulin Resistance and Metabolic Syndrome.** *Arteriosclerosis, thrombosis, and vascular biology*
Carcamo-Orive, I., Huang, N. F., Quertermous, T., Knowles, J. W.
2017; 37 (11): 2038-42
- **Combinatorial Extracellular Matrix Microenvironments for Probing Endothelial Differentiation of Human Pluripotent Stem Cells.** *Scientific reports*
Hou, L., Kim, J. J., Wanjare, M., Patlolla, B., Collier, J., Natu, V., Hastie, T. J., Huang, N. F.
2017; 7 (1): 6551
- **In Vivo Study of Human Endothelial-Pericyte Interaction Using the Matrix Gel Plug Assay in Mouse.** *Journal of visualized experiments : JOVE*
Yuan, K., Orcholski, M. E., Huang, N. F., de Jesus Perez, V. A.
2016
- **In Vivo Study of Human Endothelial- Pericyte Interaction Using the Matrix Gel Plug Assay in Mouse** *JOVE-JOURNAL OF VISUALIZED EXPERIMENTS*
Yuan, K., Orcholski, M. E., Huang, N. F., Perez, V.
2016
- **Combinatorial extracellular matrix microenvironments promote survival and phenotype of human induced pluripotent stem cell-derived endothelial cells in hypoxia** *ACTA BIOMATERIALIA*
Hou, L., Collier, J., Natu, V., Hastie, T. J., Huang, N. F.
2016; 44: 188-199
- **Combinatorial extracellular matrix microenvironments promote survival and phenotype of human induced pluripotent stem cell-derived endothelial cells in hypoxia.** *Acta biomaterialia*
Hou, L., Collier, J., Natu, V., Hastie, T. J., Huang, N. F.
2016; 44: 188-199
- **Aligned nanofibrillar collagen scaffolds - Guiding lymphangiogenesis for treatment of acquired lymphedema.** *Biomaterials*
Hadamitzky, C., Zaitseva, T. S., Bazalova-Carter, M., Paukshto, M. V., Hou, L., Strassberg, Z., Ferguson, J., Matsuura, Y., Dash, R., Yang, P. C., Kretchetov, S., Vogt, P. M., Rockson, et al
2016; 102: 259-267
- **Vascularization of three-dimensional engineered tissues for regenerative medicine applications.** *Acta biomaterialia*
Kim, J. J., Hou, L., Huang, N. F.
2016; 41: 17-26
- **Distilling complexity to advance cardiac tissue engineering** *SCIENCE TRANSLATIONAL MEDICINE*
Ogle, B. M., Bursac, N., Domian, I., Huang, N. F., Menasche, P., Murry, C. E., Pruitt, B., Radisic, M., Wu, J. C., Wu, S. M., Zhang, J., Zimmermann, W., Vunjak-Novakovic, et al
2016; 8 (342)
- **Targeted delivery of human iPS-ECs overexpressing IL-8 receptors inhibits neointimal and inflammatory responses to vascular injury in the rat.** *American journal of physiology. Heart and circulatory physiology*

- Giordano, S., Zhao, X., Xing, D., Hage, F., Oparil, S., Cooke, J. P., Lee, J., Nakayama, K. H., Huang, N. F., Chen, Y.
2016; 310 (6): H705-15
- **Stem cell-based therapies to promote angiogenesis in ischemic cardiovascular disease** *AMERICAN JOURNAL OF PHYSIOLOGY-HEART AND CIRCULATORY PHYSIOLOGY*
Hou, L., Kim, J. J., Woo, Y. J., Huang, N. F.
2016; 310 (4): H455-H465
 - **Nanoscale Patterning of Extracellular Matrix Alters Endothelial Function under Shear Stress** *NANO LETTERS*
Nakayama, K. H., Surya, V. N., Gole, M., Walker, T. W., Yang, W., Lai, E. S., Ostrowski, M. A., Fuller, G. G., Dunn, A. R., Huang, N. F.
2016; 16 (1): 410-419
 - **Polymer-DNA Nanoparticle-Induced CXCR4 Overexpression Improves Stem Cell Engraftment and Tissue Regeneration in a Mouse Hindlimb Ischemia Model** *THERANOSTICS*
Deveza, L., Choi, J., Lee, J., Huang, N., Cooke, J., Yang, F.
2016; 6 (8): 1176-1189
 - **Nanoscale Patterning of Extracellular Matrix Alters Endothelial Function under Shear Stress.** *Nano letters*
Nakayama, K. H., Surya, V. N., Gole, M., Walker, T. W., Yang, W., Lai, E. S., Ostrowski, M. A., Fuller, G. G., Dunn, A. R., Huang, N. F.
2016; 16 (1): 410-19
 - **Aligned-Braided Nanofibrillar Scaffold with Endothelial Cells Enhances Arteriogenesis.** *ACS nano*
Nakayama, K. H., Hong, G., Lee, J. C., Patel, J., Edwards, B., Zaitseva, T. S., Pauksho, M. V., Dai, H., Cooke, J. P., Woo, Y. J., Huang, N. F.
2015; 9 (7): 6900-6908
 - **Bilayered vascular graft derived from human induced pluripotent stem cells with biomimetic structure and function** *REGENERATIVE MEDICINE*
Nakayama, K. H., Joshi, P. A., Lai, E. S., Gujar, P., Joubert, L., Chen, B., Huang, N. F.
2015; 10 (6): 745-755
 - **Activation of the Wnt/Planar Cell Polarity Pathway Is Required for Pericyte Recruitment during Pulmonary Angiogenesis.** *American journal of pathology*
Yuan, K., Orcholski, M. E., Panaroni, C., Shuffle, E. M., Huang, N. F., Jiang, X., Tian, W., Vladar, E. K., Wang, L., Nicolls, M. R., Wu, J. Y., de Jesus Perez, V. A.
2015; 185 (1): 69-84
 - **Activation of the Wnt/Planar Cell Polarity Pathway Is Required for Pericyte Recruitment during Pulmonary Angiogenesis** *AMERICAN JOURNAL OF PATHOLOGY*
Yuan, K., Orcholski, M. E., Panaroni, C., Shuffle, E. M., Huang, N. F., Jiang, X., Tian, W., Vladar, E. K., Wang, L., Nicolls, M. R., Wu, J. Y., Perez, V. A.
2015; 185 (1): 69-84
 - **Manganese-Enhanced Magnetic Resonance Imaging Enables In Vivo Confirmation of Peri-Infarct Restoration Following Stem Cell Therapy in a Porcine Ischemia-Reperfusion Model.** *Journal of the American Heart Association*
Dash, R., Kim, P. J., Matsuura, Y., Ikeno, F., Metzler, S., Huang, N. F., Lyons, J. K., Nguyen, P. K., Ge, X., Wong Po Foo, C., McConnell, M. V., Wu, J. C., Yeung, et al
2015; 4 (7)
 - **Targeted Delivery of Rat Aortic Endothelial Cells (RAECs) Overexpressing Interleukin-8 (IL8) Receptors Inhibits Neointimal and Inflammatory Responses to Endoluminal Injury of Carotid Artery and Acute Pulmonary Hypertension (PAH) in Rats**
Giordano, S., Zhao, X., Xing, D., Hage, F., Oparil, S., Townes, T., Sun, C., Wu, L. N., Cooke, J. P., Lee, J., Nakayama, K., Huang, N. F., Chen, et al
ELSEVIER SCIENCE INC.2014: S44-S45
 - **Avidity-controlled hydrogels for injectable co-delivery of induced pluripotent stem cell-derived endothelial cells and growth factors.** *Journal of controlled release*
Mulyasmita, W., Cai, L., Dewi, R. E., Jha, A., Ullmann, S. D., Luong, R. H., Huang, N. F., Heilshorn, S. C.
2014; 191: 71-81
 - **Avidity-controlled hydrogels for injectable co-delivery of induced pluripotent stem cell-derived endothelial cells and growth factors.** *Journal of controlled release*
Mulyasmita, W., Cai, L., Dewi, R. E., Jha, A., Ullmann, S. D., Luong, R. H., Huang, N. F., Heilshorn, S. C.
2014; 191: 71-81
 - **Role of extracellular matrix signaling cues in modulating cell fate commitment for cardiovascular tissue engineering.** *Advanced healthcare materials*
Nakayama, K. H., Hou, L., Huang, N. F.

2014; 3 (5): 628-641

- **Near-infrared II fluorescence for imaging hindlimb vessel regeneration with dynamic tissue perfusion measurement.** *Circulation. Cardiovascular imaging*
Hong, G., Lee, J. C., Jha, A., Diao, S., Nakayama, K. H., Hou, L., Doyle, T. C., Robinson, J. T., Antaris, A. L., Dai, H., Cooke, J. P., Huang, N. F.
2014; 7 (3): 517-525
- **Extracellular matrix-mediated endothelial differentiation of human induced pluripotent stem cells**
Hou, L., Huang, N.
FEDERATION AMER SOC EXP BIOL.2014
- **Microvascular Endothelial Cells Migrate Upstream and Align Against the Shear Stress Field Created by Impinging Flow** *BIOPHYSICAL JOURNAL*
Ostrowski, M. A., Huang, N. F., Walker, T. W., Verwijlen, T., Poplawski, C., Khoo, A. S., Cooke, J. P., Fuller, G. G., Dunn, A. R.
2014; 106 (2): 366-374
- **Characterization of a Fluorescent Probe for Imaging Nitric Oxide** *JOURNAL OF VASCULAR RESEARCH*
Ghebremariam, Y. T., Huang, N. F., Karnbharnpati, S., Volz, K. S., Joshi, G. G., Anslyn, E. V., Cooke, J. P.
2014; 51 (1): 68-79
- **Hindlimb ischemia** *MANUAL OF RESEARCH TECHNIQUES IN CARDIOVASCULAR MEDICINE*
Lee, J. C., Huang, N. F., Cooke, J. P., Ardehali, H., Bolli, R., Losordo, D. W.
2014: 177-86
- **Multi-cellular interactions sustain long-term contractility of human pluripotent stem cell-derived cardiomyocytes.** *American journal of translational research*
Burrige, P. W., Metzler, S. A., Nakayama, K. H., Abilez, O. J., Simmons, C. S., Bruce, M. A., Matsuura, Y., Kim, P., Wu, J. C., Butte, M., Huang, N. F., Yang, P. C.
2014; 6 (6): 724-735
- **Effects of Dimethylarginine Dimethylaminohydrolase-1 Overexpression on the Response of the Pulmonary Vasculature to Hypoxia** *AMERICAN JOURNAL OF RESPIRATORY CELL AND MOLECULAR BIOLOGY*
Bakr, A., Pak, O., Taye, A., Hamada, F., Hemeida, R., Janssen, W., Gierhardt, M., Ghofrani, H. A., Seeger, W., Grimminger, F., Schermuly, R. T., Witzenth, M., Brandes, et al
2013; 49 (3): 491-500
- **Conversion of Human Fibroblasts to Functional Endothelial Cells by Defined Factors** *ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY*
Li, J., Huang, N. F., Zou, J., Laurent, T. J., Lee, J. C., Okogbaa, J., Cooke, J. P., Ding, S.
2013; 33 (6): 1366-?
- **The modulation of endothelial cell morphology, function, and survival using anisotropic nanofibrillar collagen scaffolds** *BIOMATERIALS*
Huang, N. F., Okogbaa, J., Lee, J. C., Jha, A., Zaitseva, T. S., Paukshto, M. V., Sun, J. S., Punjya, N., Fuller, G. G., Cooke, J. P.
2013; 34 (16): 4038-4047
- **Spatial patterning of endothelium modulates cell morphology, adhesiveness and transcriptional signature** *BIOMATERIALS*
Huang, N. F., Lai, E. S., Ribeiro, A. J., Pan, S., Pruitt, B. L., Fuller, G. G., Cooke, J. P.
2013; 34 (12): 2928-2937
- **Human induced pluripotent stem cell-derived endothelial cells exhibit functional heterogeneity.** *American journal of translational research*
Rufaihah, A. J., Huang, N. F., Kim, J., Herold, J., Volz, K. S., Park, T. S., Lee, J. C., Zambidis, E. T., Reijo-Pera, R., Cooke, J. P.
2013; 5 (1): 21-35
- **Human induced pluripotent stem cell-derived endothelial cells exhibit functional heterogeneity.** *American journal of translational research*
Rufaihah, A. J., Huang, N. F., Kim, J., Herold, J., Volz, K. S., Park, T. S., Lee, J. C., Zambidis, E. T., Reijo-Pera, R., Cooke, J. P.
2013; 5 (1): 21-35
- **Chemotaxis of human induced pluripotent stem cell-derived endothelial cells.** *American journal of translational research*
Huang, N. F., Dewi, R. E., Okogbaa, J., Lee, J. C., Jalilrufaihah, A., Heilshorn, S. C., Cooke, J. P.
2013; 5 (5): 510-520
- **Multifunctional in vivo vascular imaging using near-infrared II fluorescence** *NATURE MEDICINE*
Hong, G., Lee, J. C., Robinson, J. T., Raaz, U., Xie, L., Huang, N. F., Cooke, J. P., Dai, H.
2012; 18 (12): 1841-?

- **Endothelial Cells Derived From Nuclear Reprogramming** *CIRCULATION RESEARCH*
Wong, W. T., Huang, N. F., Botham, C. M., Sayed, N., Cooke, J. P.
2012; 111 (10): 1363-1375
- **Aligned nanofibrillar collagen regulates endothelial organization and migration** *REGENERATIVE MEDICINE*
Lai, E. S., Huang, N. F., Cooke, J. P., Fuller, G. G.
2012; 7 (5): 649-661
- **Bioluminescence Imaging of Stem Cell-Based Therapeutics for Vascular Regeneration** *THERANOSTICS*
Huang, N. F., Okogbaa, J., Babakhanyan, A., Cooke, J. P.
2012; 2 (4): 346-354
- **Endothelial Cells Derived From Human iPSCs Increase Capillary Density and Improve Perfusion in a Mouse Model of Peripheral Arterial Disease** *ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY*
Rufaihah, A. J., Huang, N. F., Jame, S., Lee, J. C., Nguyen, H. N., Byers, B., De, A., Okogbaa, J., Rollins, M., Reijo-Pera, R., Gambhir, S. S., Cooke, J. P.
2011; 31 (11): E72-U44
- **Regulation of the Matrix Microenvironment for Stem Cell Engineering and Regenerative Medicine** *ANNALS OF BIOMEDICAL ENGINEERING*
Huang, N. F., Li, S.
2011; 39 (4): 1201-1214
- **Proteomic identification of biomarkers of vascular injury.** *American journal of translational research*
Huang, N. F., Kurpinski, K., fang, q., Lee, R. J., Li, S.
2011; 3 (2): 139-148
- **A matrix micropatterning platform for cell localization and stem cell fate determination** *ACTA BIOMATERIALIA*
Huang, N. F., Patlolla, B., Abilez, O., Sharma, H., Rajadas, J., Beygui, R. E., Zarins, C. K., Cooke, J. P.
2010; 6 (12): 4614-4621
- **Role of Nitric Oxide Signaling in Endothelial Differentiation of Embryonic Stem Cells** *STEM CELLS AND DEVELOPMENT*
Huang, N. F., Fleissner, F., Sun, J., Cooke, J. P.
2010; 19 (10): 1617-1625
- **Embryonic Stem Cell-Derived Endothelial Cells Engraft Into the Ischemic Hindlimb and Restore Perfusion** *ARTERIOSCLEROSIS THROMBOSIS AND VASCULAR BIOLOGY*
Huang, N. F., Niyama, H., Peter, C., De, A., Natkunam, Y., Fleissner, F., Li, Z., Rollins, M. D., Wu, J. C., Gambhir, S. S., Cooke, J. P.
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