

Donny Hanjaya-Putra

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Research ID: <http://www.researcherid.com/rid/P-1611-2017>

Education

2012 Ph.D., Chemical and Biomolecular Engineering, The Johns Hopkins University.
2007 B.S., Chemical and Biomolecular Engineering, University of Notre Dame.

Professional Experience

2017 – Present Assistant Professor.
Aerospace and Mechanical Engineering, University of Notre Dame.
Chemical and Biomolecular Engineering (concurrent), University of Notre Dame.

2012 – 2017 Postdoctoral Research Fellow.
The Wyss Institute for Biologically Inspired Engineering, Harvard University.
Advisor: Elliot L. Chaikof, M.D., Ph.D.

2007 – 2012 Graduate Research Assistant.
Institute for NanoBioTechnology, The Johns Hopkins University.
Advisor: Sharon Gerecht, Ph.D.

2005 – 2007 Undergraduate Research Assistant.
Center for Microfluidics and Medical Diagnostics, University of Notre Dame.
Advisor: Hsueh-Chia Chang, Ph.D.

Awards and Honors

2019 Career Development Award – American Heart Association

2018 Emerging Leaders in Biological Engineering – Journal of Biological Engineering.

2014 – 2017 JDRF Postdoctoral Research Fellowship – Juvenile Diabetes Research Foundation.

2012 Siebel Scholar Class of 2012 – awarded annually for academic excellence and demonstrated leadership to 85 top students from the world's leading graduate schools.

2011 U.S. New Investigator Travel Award – International Society of Thrombosis and Haemostasis (ISTH).

2011 ISSCR 9th Annual Meeting Travel Award – International Society for Stem Cell Research (ISSCR).

2010 Experimental Biology (EB) Travel Award – American Anatomist Association.

2010 GRO Travel Award – The Johns Hopkins University.

2009 Experimental Biology Travel Award – Glycosan Biosystem.

2007 Citation of Merit – University of Notre Dame.

2007 *Magna Cum Laude* – University of Notre Dame.

2006 Tau Beta Pi Engineering Honor Society Induction.

2002 – 2007 Dean's Honor List – University of Notre Dame.

Original Contributions: (*Contributed Equally)

1. Laura Alderfer, Alicia Wei, **Donny Hanjaya-Putra**, “Lymphatic Tissue Engineering.” Journal of Biological Engineering, 2018, (invited article as part of the *Emerging Leaders in Biological Engineering*).
2. **Donny Hanjaya-Putra**, Carolyn Haller, Xiaowei Wang, Erbin Dai, Bock Lim, Liyung Liu, Patrick Jaminet, Joy Yao, Amy Searle, Thomas Bonnard, Christoph E. Hagemeyer, Karlheinz Peter, Elliot L. Chaikof, “Platelet-Targeted Dual Pathway Antithrombotic Inhibits Thrombosis with Preserved Hemostasis,” JCI Insight, 2018 Aug 9; 3(15).
3. Nisarga Naik, **Donny Hanjaya-Putra**, Carolyn Haller, Mark G. Allen, Elliot L. Chaikof, “Rapid homogenous endothelialization of high aspect ratio microvascular networks.” Biomedical Microdevices, 2015 Aug; 17(4):83.
4. Venkata R. Krishnamurthy, Mohammed Y.R. Sardar, Yu Ying, Xuezheng Song, Carolyn Haller, Erbin Dai, Xiacong Wang, **Donny Hanjaya-Putra**, Lijun Sun, Vaslios Morikis, Scott I. Simon, Robert J. Woods, Richard D. Cummings, Elliot L. Chaikof, “Glycopeptide analogues of PSGL-I inhibit P-selectin vitro and in vivo.” Nature Communications, 2015 Mar 31: 6:6387.
5. Sravanti Kusuma, Yu-I Shen, **Donny Hanjaya-Putra**, Prashant Mali, Linzhao Cheng, Sharon Gerecht, “Self-Organized Vascular Networks from Human Pluripotent Stem Cells in a Synthetic Matrix,” Proc Natl Acad Sci U S A, 2013 Jul 30; 110(31): 12601-6.
6. **Donny Hanjaya-Putra**, Yu-I Shen, Abby Wilson, Sudhir Khetan, Karen Fox-Talbot, Charles Steenbergen, Jason A. Burdick, Sharon Gerecht, “Integration and Regression of Implanted Human Vascular Networks during Deep Wound Healing,” Stem Cell Translational Medicine, 2013 Apr; 2(4):297-306.
7. **Donny Hanjaya-Putra**, Kyle T. Wong, Kelsey Hirotsu, Sudhir Khetan, Jason A. Burdick, Sharon Gerecht, “Spatial Control of Cell-Mediated Degradation to Regulate Vasculogenesis and Angiogenesis in Hyaluronan Hydrogels,” Biomaterials, 2012, Sep; 33(26):6123-31.
8. Shyam B. Khatau, Sravanti Kusuma, **Donny Hanjaya-Putra**, Prashant Mali, Linzhao Cheng, Jerry S.H. Lee, Sharon Gerecht, Denis Wirtz, “The Differential Formation of the LINC-mediated Perinuclear Actin Cap in Pluripotent and Somatic Cells,” PLoS ONE, 2012, 7(5):e36689.
9. **Donny Hanjaya-Putra**, Vivek Bose, Yu-I Shen, Jane Yee, Sudhir Khetan, Karen Fox-Talbot, Charles Steenbergen, Jason A. Burdick, Sharon Gerecht, “Controlled Activation of Morphogenesis to Generate a Functional Human Microvasculature in a Synthetic Matrix,” Blood, 2011, Jul 21; 118(3):804-15; **Commentary in the same issue:** Edward K. Geissler and Peter Angele, “Innovative Blood Vessels Bring New Life,” Blood, 2011, Jul 21; 118 (3):488-90.
10. Derek Yee*, **Donny Hanjaya-Putra***, Vivek Bose, Eli Luong, Sharon Gerecht, “Hyaluronic Acid Hydrogels Support Cord-Like Structures from Endothelial Colony-Forming Cells,” Tissue Engineering: Part A, 2011 May; 17(9-10):1351-61.
11. Elaine Vo*, **Donny Hanjaya-Putra***, Yuanting Zha, Sravanti Kusuma, Sharon Gerecht, “Smooth-Muscle-Like Cells Derived from Human Embryonic Stem Cells Supports and Augment Cord-Like Structures *in vitro*,” Stem Cell Reviews and Reports, 2010 June; 6(2): 237-47.

12. **Donny Hanjaya-Putra**, Jane Yee, Doug Ceci, Rachel Truitt, Derek Yee, Sharon Gerecht, "Vascular Endothelial Growth Factor and Substrate Mechanics Regulate *in vitro* Tubulogenesis of Endothelial Progenitor Cells." Journal of Cellular and Molecular Medicine, 2010 Oct; 14(10):2436-47.
13. **Donny Hanjaya-Putra**, Sharon Gerecht, "Vascular Engineering Using Human Embryonic Stem Cells," Biotechnology Progress, 2009 Jan-Feb; 25(1):2-9.
14. **Donny Hanjaya-Putra**, Sharon Gerecht, "Mending the Failing Heart with a Vascularized Cardiac Patch," Cell Stem Cell, 2009 Dec 4; 5(6):575-576.

Book Chapters:

1. Erbil E. Abaci, **Donny Hanjaya-Putra**, Sharon Gerecht, "Hypoxia and Matrix Manipulation for Vascular Engineering," Biophysical Regulation of Vascular Differentiation and Assembly, 2011:127-165.
2. **Donny Hanjaya-Putra**, Maureen Wanjare, Sharon Gerecht, "Vascular Tissue Engineering," Biomaterials for Tissue Engineerings: A Review of the Past and Future Trend, 2011:89-109

Patents

1. **Donny Hanjaya-Putra**, Carolyn A. Haller, Elliot L. Chaikof, "Targeted Anti-FXa for Deep Vein Thrombosis." (pending).
2. **Donny Hanjaya-Putra**, Sharon Gerecht, "Hydrogel-Based Vascular Lineage Cell Growth and Uses," US 14/553,442. (2015).
3. **Donny Hanjaya-Putra**, Elaine Vo, Maureen Wanjare, Sharon Gerecht, "Smooth Muscle-Like Cells (SMLCs) Derived from Human Pluripotent Stem Cells," US 13/581,341. (2012).

National and International Conferences

Oral Presentations:

1. **Donny Hanjaya-Putra**, "Controlling Vascular Morphogenesis in Tumor Microenvironments," Harper Cancer Research Institute, Jan 28, 2019, (*invited lecture*).
2. Loan Bui, **Donny Hanjaya-Putra**, "Microfluidics Hydrogels-Based Platform to Study Breast Cancer Cell and Lymphatic Capillary Interaction, American Institute of Physics (AIP), Notre Dame, I.N., July 23-24, 2018.
3. **Donny Hanjaya-Putra**, Erbin Dai, Carolyn Haller, Christoph E. Hagemeyer, Karlheinz Peter, Elliot L. Chaikof, "Targeted Anti-Thrombotic Prophylaxis for Deep Vein Thrombosis" Biomedical Engineering Society (BMES) Annual Meeting, Phoenix, A.Z., October, 11-14, 2017.
4. **Donny Hanjaya-Putra**, Erbin Dai, Carolyn Haller, Christoph E. Hagemeyer, Peter Karlheinz, Elliot L. Chaikof, "Targeted Anticoagulation Therapy for the Prevention of Venous Thrombosis." American Institute of Chemical Engineers (AIChE) Annual Meeting, San Francisco, C.A., November 13-18, 2016.
5. **Donny Hanjaya-Putra**, Charles Steenbergen, Jason A. Burdick, Sharon Gerecht, "Functionality and Durability of Engineered Human Vascular Networks from Endothelial Progenitor Cells in a Deep Thermal Wound." International Society of Stem Cell Research (ISSCR) 11th Annual Meeting, Boston, M.A., June 12-15, 2013.

6. **Donny Hanjaya-Putra**, Vivek Bose, Sudhir Khetan, Jason A. Burdick, Sharon Gerecht, "Controlling Morphogenesis of Endothelial Progenitors to Generate Functional Microvasculature in a Synthetic Matrix." International Society of Stem Cell Research (ISSCR) 9th Annual Meeting, Toronto, Canada, June 15-18, 2011.
7. **Donny Hanjaya-Putra**, Sudhir Khetan, Jason A. Burdick, Sharon Gerecht, "Controllable and Robust Morphogenesis of Functional Vascular Network Assembly within Synthetic Environment." Experimental Biology (EB), Washington D.C., April 9-13, 2011.
8. **Donny Hanjaya-Putra**, Rachel Truitt, Jane Yee, Doug Ceci, Derek Yee, Sharon Gerecht, "Angiogenesis by Endothelial Progenitor Cells is co-regulated by Vascular Endothelial Growth Factor and Matrix Stiffness, Experimental Biology (EB), New Orleans, L.A., April 18-22, 2009.

Poster Presentations:

1. Loan Bui, **Donny Hanjaya-Putra**, "Interplay of Lymphatic Vasculature and Breast Cancer on Lymphatic Invasion," Biomedical Engineering Society (BMES) Annual Meeting, Atlanta, G.A., October 17-20, 2018.
2. Laura Alderfer, David B. Go, Hsueh-Chia Chang, **Donny Hanjaya-Putra**, "Early Prediction of Preeclampsia using Maternal Exosomal miRNAs Secreted by Endothelial Colony-Forming Cells, American Institute of Physics (AIP), Notre Dame, I.N., July 23-24, 2018.
3. **Donny Hanjaya-Putra**, Erbin Dai, Carolyn Haller, Christoph E. Hagemeyer, Karlheinz Peter, Elliot L. Chaikof, "Targeted Factor Xa Inhibition for the Prevention of Venous Thrombosis." Biomedical Engineering Society (BMES) Annual Meeting, Minneapolis, M.N., October 5-8, 2016.
4. Venkata R. Krishnamurthy, Mohammed Y.R. Sardar, Carolyn Haller, **Donny Hanjaya-Putra**, Richard D. Cummings, Elliot L. Chaikof, "PSGL-I Glycomimetic Inhibits P-Selectin in vitro and in vivo." Harvard Medical School Surgery Research Day, Boston, M.A., May 9, 2015.
5. Nisarga Naik, **Donny Hanjaya-Putra**, Carolyn Haller, Mark G. Allen, Elliot L. Chaikof, "Biodegradable Polymer for Spatially Homogenous and Rapid Endothelialization of a High Aspect Ratio Microvascular Construct." Harvard Medical School Surgery Research Day, Boston, M.A., May 10, 2014.
6. Nisarga Naik, **Donny Hanjaya-Putra**, Carolyn Haller, Mark G. Allen, Elliot L. Chaikof, "Spatially Homogenous and Rapid Endothelialization of a High Aspect Ratio Microvascular Construct." Harvard Medical School Surgery Research Day, Boston, M.A., May 11, 2013.
7. **Donny Hanjaya-Putra**, Vivek Bose, Sudhir Khetan, Jason A. Burdick, Sharon Gerecht, "Controlled Activation of Morphogenesis to Generate a Functional Human Microvasculature in a Synthetic Matrix." XXIII Congress of the International Society on Thrombosis and Haemostasis (ISTH), Kyoto, Japan, July 23-28, 2011.
8. **Donny Hanjaya-Putra**, Derek Yee, Jane Yee, Sharon Gerecht, "Tunable Matrix to Study and Generate Vascular Networks from Endothelial Colony-Forming Cells, New York Stem Cell Foundation (NYSCF) 5th Annual Translational Stem Cell Research Conference, New York City, N.Y., October 12-13, 2010.
9. **Donny Hanjaya-Putra**, Elaine Vo, Sudhir Khetan, Jane Yee, Yuanting Zha, Vivek Bose, Sravanti Kusuma, Jason A. Burdick, Sharon Gerecht, "Controllable and Robust Vascular Differentiation and Assembly Within Synthetic Environment." International Society for Stem Cell Research (ISSCR) 8th Annual Meeting, San Francisco, C.A., June 16-19, 2010.

Service to the Profession

Invited Ad Hoc Reviewer:

- PloS ONE, Scientific Reports.
- Cell Tissue Organs.
- BMC Technology.
- Journal of Visualized Experiments.
- Stem Cell Translational Medicine.
- Journal Biomedical Materials Research.
- Cardiovascular Research.
- Annals of Biomedical Engineering.
- Cellular and Molecular Life Sciences.
- Journal of Vascular Research
- Acta Biomaterialia
- Biomicrofluidics

Invited Grant Reviewer:

- I-CTSI Core Pilot Grant Review Panel (May 2018)
- I-CTSI Surgical Device Review Panel (June 2018)
- Peer Reviewed Medical Research Program of the Congressionally Directed Medical Research Program (CDMRP, July 2018)
- ACS-HCRI Grant Review Panel (Dec 2018)

Scientific Organizations:

- American Institute of Chemical Engineering (AIChE).
- Biomedical Engineering Society (BMES).
- International Society of Stem Cell Research (ISSCR).
- International Society for Thrombosis and Haemostasis (ISTH).
- American Heart Association (AHA).

Teaching and Advising

University of Notre Dame

- AME 50571 Biomaterials (undergraduate and graduate elective course)
 - 12 students (Spring 2018)
 - 35 students (Fall 2018)
- AME 50571 Stem Cell Engineering (graduate course)
 - 7 students (Spring 2019)

Post-doctoral Scholars

- Dr. Loan Bui, Post-doctoral Scholar, 01/2018-present
- Dr. Zeinab Ramshani, Post-doctoral Scholar, 05/2018-present
- Dr. Fei Fan, Post-doctoral Scholar, 03/2019-present

Graduate Students

Ph.D.

- Laura Alderfer (anticipated 2022)
- Alicia Wei (anticipated 2023)

Undergraduate Students – Notre Dame

- Elizabeth Russo, Aerospace and Mechanical Engineering (Fall 2017, Spring 2018, Fall 2018, Spring 2019)
- Brian Coe, Aerospace and Mechanical Engineering (Summer 2018, Fall 2018, Spring 2019)

- Henry Davis, Aerospace and Mechanical Engineering (Summer 2018, Fall 2018, Spring 2019)
- Kellen Round, Biological Science (Fall 2018, Spring 2019)
- Grace Petrosini, Biological Science (Fall 2018, Spring 2019)
- Madeline Owen, Notre Dame Stamps Scholar (Spring 2019)
- Abigayle Batkoff, Biological Science (Spring 2019)

Visiting Undergraduate Students

- Eric Pfrender, Chemical and Biomolecular Engineering, Northwestern University (Summer 2018)

High School Students

- Benjamin Capdevielle, Trinity High School (Fall 2018, Spring 2019).
- Christin Preuss, Trinity High School (Fall 2018, Spring 2019).

Qualification Exam, Candidacy Exam, and Dissertation Committees

- Tyler Finamore, Aerospace and Mechanical Engineering (expected 2021)
- Kimberly Curtis, Bioengineering Graduate Program (expected 2019)
- Dharsan Soundarrajan, Chemical and Biomolecular Engineering (expected 2022)
- Chenguang Zhang, Chemical and Biomolecular Engineering (expected 2022)

Departmental Committees

- AME Ad Hoc Committee on Strategic Planning

Service and Outreach

Outreach

- Co-Coordinator, MATHCOUNTS Competition, St. Joseph Valley Chapter, Indiana
- Guest lecturer, DNA Learning Center, University of Notre Dame.

Service

- Member, Scientific Judges for Siemens Region 3 Competition, Notre Dame, Indiana
- Mentor, Building Bridges Mentoring Program, Notre Dame, Indiana