Kara E. McCloskey, Ph.D.

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EDUCATION

The Cleveland Clinic Foundation Cleveland, Ohio
Biomedical Engineering Department
Graduate Student (Ph.D. awarded from OSU), April 1999 – March 2001
The Ohio State University Columbus, Ohio
Ph.D. Chemical Engineering, 2001
M.S. Chemical Engineering, 1999
B.S. Chemical Engineering, 1996
University of Akron Akron, Ohio
Dance Major: August 1990 - December 1991

ACADEMIC POSITIONS

2013- pres.	Associate & Founding Professor	School of Engineering, UC, Merced
2019-2020	Chair & Founder	Graduate Group Program in Materials and Biomaterials Science and Engineering (MBSE) – UC, Merced
2013-2019	Chair	Interim Graduate Program in Biological Engineering and Small-scale Technologies (BEST) - UC, Merced
2005-2013	Assistant & Founding Professor	School of Engineering, UC, Merced
2006-2010	Chair & Founder	Interim Graduate Program in Biological Engineering and Small-scale Technologies (BEST) - UC, Merced
2001-2005	Postdoctoral Fellow	Institute Bioengineering & Bioscience, Georgia Institute of Technology
1999-2001	Graduate Student	Biomedical Engineering, The Cleveland Clinic Foundation
1996-1999	Graduate Student	Chemical Engineering, The Ohio State University

RESEARCH TRAINING/EXPERIENCE

June-Aug 2012 — Visiting Faculty
Stanford University, Mechanical Engineering: NSF- funded EFRI-MIKS: Force Sensing and Remodeling in Multicellular Tissues

July 2001 - July 2005 — Postdoctoral Training
Georgia Institute of Technology Institute for Bioengineering and Bioscience, Atlanta
Developed methods for inducing the differentiation of embryonic stem cells down an endothelial lineage using biochemical treatments, cell sorting techniques and mechanical forces. This work was funded from a NRSA fellowship from NIH. This position also included teaching activities: Systems Physiology II.

April 1999 – July 2001 — Doctoral Research
The Cleveland Clinic Foundation Biomedical Engineering, Cleveland, Ohio
Doctoral Thesis: Characterization of the antibody binding mechanisms used to impart paramagnetic labels on specific cellular antigen molecules for magnetic cell separation.

June 1996 - April 1999 — Graduate Research
Ohio State University Chemical Engineering, Columbus, Ohio
Master's Thesis: Developed mathematical models and methodology for using cell-tracking technology to quantitate cellular surface antigen expression levels on immunomagnetically labeled cells.

TEACHING EXPERIENCE

Sp 2022	Materials Selection and Performance – UC, Merced
Fall20, 21, 22	Materials Thermodynamics – UC, Merced

S0 21, 22	BIO Culminating Experience
Sp 21	Technical Writing for Scientists and Engineers – UC, Merced
Fall18, 19	Special Topics in Materials - UC, Merced
Sp 18, Fall19	Engineering Living Systems– UC, Merced
Fall07,08, 17, Sp11,13,15	Tissue Engineering – UC, Merced
Fall 17	Special Topics in Bioengineering - UC, Merced
Sp08, Sp09, Sp14	Physiology for Engineers – UC, Merced
Fall11, Fall12, Fall13, Sp16	Biotransport – UC, Merced
Sp06, Sp07	Fluid Mechanics – UC, Merced
Sp09 - pres.	Cardiovascular Stem Cell Engineering Journal Club – UC, Merced
Fall06	Intro to Bioengineering – UC, Merced
Fall10, Sp11	Professional Seminar for Engineers – UC, Merced
Sp09, Fall09, Sp12	Bioengineering Capstone Design – UC, Merced
2007-2010	Stem Cell Journal Club– UC, Merced
2006-2009	Graduate Research Seminar – UC, Merced
Fall06, Sp07	Service Learning (community project-based course) – UC, Merced
Fall04	Organ Systems Physiology– Georgia Tech
June96 - Sept98	TA – Various Courses (Chemical Engineering Unit Operations Laboratory, Thermodynamics, Graduate Fluid Transport, Graduate Seminar) - OSU
Sp98	Completed Course at OSU – "How to Teach in Engineering" (AgE801)

SERVICE

	<u>BMES Conference Track Chair</u>
	BMES 2022, Cell and Molecular Engineering
2017-pres	<u>BMES Awards Committee</u>
	<u>Grant Reviewer</u>
2007- 2011, 2014-2020	Maryland Stem Cell Program (TEDCO)
2018, 2019	Lawrence Livermore National Labs
2016, 2019, 2020	UC Cancer Research Coordinating Committee (CRCC)
2008 - 2011	NIH – National Research Service Awards (NRSA)
2011	R01 Study Section BST-M (50)
2009 - 2016	NSF – Career Awards, Graduate Research Fellowship Program
	<u>Journal Editorial Board</u>:
2021-present	Cells
2014 – 2017	Stem Cell Research & Therapy, Journal of Materials & Applied Science
2015-2019	AIMS Cell and Tissue Engineering
	<u>Journal Reviewer</u>
2003-pres	ATVB, Stem Cell Research, Experimental Cell Research, Tissue Engineering, Biotechnology and Bioengineering, Biotechnology Progress, Regenerative Medicine, Biomaterials Molecular Pharmaceutics, Artificial Organs, Pharmaceutical Research, Public Library of Science-Pathogens, Applied Biochemistry and Biotechnology, American Chemical Society, Stem Cells, Stem Cell Reports, FASEB, Advanced Materials,
2009	<u>Conference Chair</u>
	10th Annual UC-wide Bioengineering Symposium hosted at UC Merced
	<u>Conference Session Chair</u>
Sept 5, 2019	TERMIS Annual Meeting – San Diego, CA
Sept 7, 2018	TERMIS World – Kyoto, Japan
Dec12, 2016	TERMIS Annual Meeting – San Diego, CA
Oct 8, 2014	BMES Annual Meeting – Cardiovascular Tissue Engineering, Tampa, FL
Feb 5, 2014	ASME NanoEngineering in Medicine and Biology: Nanoengineering for Regenerative Medicine and Tissue Engineering, San Francisco, CA
Sept 27, 2013	BMES Annual Meeting – Tissue Engineered Models for Study of Disease and Drug Discovery, Seattle, WA
Oct 24-27, 2012	BMES Annual Meeting – Cell Delivery and Cell-Based Therapeutics, Atlanta, GA
May 1, 2012	Society of Biological Engineering- Stem Cell Engineering - Vascularization, Seattle, WA

Oct 15, 2011	BMES Annual Meeting – Cardiac Functional Analysis, Tissue Engineering II, Hartford, CT
June 14, 2011	Annual UC Systemwide Bioengineering Symposium, Santa Barbara, CA – Stem Cell Engineering
Dec, 2010	TERMIS Annual Meeting – Microbiotechnology for Regenerative Medicine
June, 2009	Annual UC Systemwide Bioengineering Symposium hosted at UC Merced
Jan, 2008	SBE- Stem Cell Engineering in Coronado Island, CA
Oct, 2008	BMES Annual Meeting – Biomechanical Signaling in Stem Cells Engineering, Pittsburgh, PA
June, 2008	UC Systemwide Bioengineering in Riverside, CA
	University of California, Merced
2021-2022	Member, Graduate Council
2020-2021	Chair, Committee on Research (COR)
2020-2021	Member, Divisional Council (DivCo)
2020-2021	Member, University Committee on Research Policy (UCORP)
2019- 2020	Vice Chair, Committee on Research
2019- 2021	Member, Committee on Committees
Jan, 2019-June 2019	Chair, Graduate Group Program in Materials and Biomaterials Science and Engineering (MBSE) – UC, Merced
2015-2019	Chair, Graduate Group Program in Biological Engineering and Small-scale Technologies" – UC, Merced
2017-2018	Faculty Search Committee – Materials Science and Engineering (MSE)
Aug 2013 – Jan, 2015	Chair, Graduate Group Program in "Biological Engineering and Small-scale Technologies" – UC, Merced
2013-2015	Member, Committee on Committees
Jan 2012 – 2013	Chair, Educational Policy Committee in Biological Engineering and Small-scale Technologies (BEST) – UC, Merced
Jan 2007 – Aug 2010	Chair and Founder, Graduate Group Program in Biological Engineering and Small-scale Technologies (BEST) – UC, Merced
2007 – 2011, 2012-2015	IACUC Member– UC, Merced
2007 -2008, 20011-2012	Curriculum Committee for the School of Engineering – UC, Merced
2005- 2007	Undergraduate Council – UC, Merced
2006- 2007	Engineering Executive Committee – UC, Merced
2005 – 2017	Faculty Search Committees – Bioengineering, Systems Biology
2007-2017	Campus Liaison for UC System-wide Bioengineering
	Outreach
2019	Judge for Merced County Science Fair, 5th-8th grades
Jan 17, 2019	Energy and Energy Transfer, Burbank Elementary, Merced City Schools
Continuing	Laboratory Tours, various groups approximately 5 per year
Fall, 2011	WISE talk: "How I got here"
Oct 7, 2008	Dinner with a Scientist, Oakdale Schools
2008	Judge for Stanislaus County Science Fair, K-6th grade
	IBB (Institute for Bioengineering and Bioscience)
April 2002 – July 2005	Present research at events sponsored by the institute: Suddath Symposium, and NSF site, Educational Partners site, and Industrial Partners site visits
January 2002 – July 2005	Served as a mentor for undergraduate students: This involved proposing a research project for undergraduate student to independently complete in one year time and serving as the primary advisor on the project.
	CCF (Cleveland Clinic Foundation) Departmental Service
July 2000 – May 2001	Graduate Students Activities Committee '00-'01
	Present research at foundation events: Lerner Research Institute (LRI) Paper Competition, LRI Retreat, Graduate Student Research Day
	OSU (The Ohio State University) University Service
1997 – 1998	Council of Graduate Students – Served on Committee on Academic Misconduct
1998	Served on advisory Committee for TA Workshop
Sept. 1998 & Sept. 1999	Taught a workshop aimed to provide general training to new TAs
Nov. 2000	Presented at Graduate Research Initiative Program at Ohio State University
	OSU Departmental Service

1997 & 1998	Graduate Chemical Engineering Student Orientation
1997 & 1998	Advisor/Mentor for Freshmen Women in Engineering Workshop, ’97 and ’98
1997 – 1999	Created and source-authored an advice column in departmental newsletter that answered technical, political, and social inquiries. ’97-’99

PROFESSIONAL MEMBERSHIPS

ISACB (International Society of Cardiovascular Biology) 20
BMES (Biomedical Engineering Society) ’02-present
ISSCR (International Society for Stem Cell Research) ’03-‘17
TERMIS (Tissue Engineering & Regenerative Medicine International Society) ’03-2018
NAVBO (North American Vascular Biology Organization) ’08-‘10
ASEE (American Society for Engineering Education) ’98-’99 and ’06-‘09
AIChE (American Institute of Chemical Engineers) ’93-’01
ACS (American Chemical Society) ’01
SPE (Society for Plastics Engineers) ’93-’94

HONORS AND AWARDS

AIMBE College of Fellows, class of 2022
NSF-funded EFRI-MIKS Research Program: Force Sensing and Remodeling in Multicellular Tissues, Stanford University, 2012
CIRM New Faculty Award, 2009
Invitation to CIRM-sponsored workshop in stem cells in UK, 2007
National Research Service Award from NIH-NHLBI 2003-2005
Distinguished Scientific Poster Award – Georgia Life Sciences Summit 2002
Lerner Research Institute Award – Paper Competition 2001
Lerner Research Institute Award – Paper Competition 2000
Academic Scholarship from the University of Akron 1990-91
Dance Scholarship from the University of Akron 1990-91

GRANTS

California Institute of Regenerative Medicine, COMPASS 10/2022-9/2027
Award #EDUC5-13686 $3,000,000
Training Undergraduates in Stem Cell Engineering and Biology (TUSCEB)
Role: PI

Cancer Coordinating Research Committee (CCRC) 10/01/2022 – 9/30/2023
Award # C23CR5706 $75,000
Integrated Model of Cancer, Vasculature, and Immune System
Role: PI

NSF-CREST 8/31/2021-8/30/2026
Award # 2112675 $5,000,000
Center for Cellular and Biomolecular Machines (CCBM)
PI: Victor Munoz
Role: Participant, Research Lead, Executive Committee

NIH G-RISE 3/15/2021-03/14/2026
Award # T32GM141862 $2,200,000
Interdisciplinary Biomedical Science and Technology
Role: Participant, Course Lead, Executive Committee

NSF Science and Technology Center (STC) 10/1/2021-9/30/2026
Award # 1548571 $22,470,000
Science and Technology Center for Engineering Mechano-Biology
Lead Institution: U Penn
Role: One of ~25 collaborating PIs

NSF I-CORPS 1/1/2018-12/31/2018
Award #: 1547848 $50,000
Title: Modularized Bioprinter for High Throughput Pharmaceutical Development
Role: PI

UC, Merced Senate Research Award 7/1/2019-6/30/2021
Computational Modeling Vascular Fate $15,000

Role: Lead PI with Gopinathan and Sindi
NSF-CREST 4/15/2016-3/31/2021
Award # 1547848
Center for Cellular and Biomolecular Machines (CCBM) $5,000,000
PI: Victor Munoz
Role: Co-PI, Research Lead, Executive Committee
NSF Science and Technology Center (STC) 2/2010-8/2021
Award # 0939511 $25,000,000
Science and Technology Center: Emergent Behavior of Integrated Cellular Systems (EBICS)
PI and Lead Institution: Roger Kamm, MIT
Role: One of ~25 PIs, Thrust Lead, and Working Group Lead
NIH Program Project Grant 2/1/2013-1/31/2018
Award # P01 AG000538 $11,000,000
Title: Behavioral and neural plasticity in the aged
Program Project Director - Carl Cotman, UC Irvine
Project #5: Oligomeric Aß and inflammation in neurovascular pathogenesis in AD (Cribbs)
Role: Collaborator
UC, Merced Senate Research Award 2017-2018
Light activated delivery vehicles for tissue engineering $15,000
Role: Co-PI with Baxter and Ghosh
California Institute of Regenerative Medicine, Basic Biology 6/2014-5/2016
Directed Differentiation of Specialized Endothelial Cells
Award # RB5-07414 $476,000
Role: PI
NSF Integrative Graduate Education and Research Traineeship (IGERT)
Award # 0965918, Lead: Rashid Bashir, UIUC 8/2010-8/2015
Role: Collaborator, Subaward $150,000 over 5 yr $3,000,000
NIH postdoctoral fellowship (F32-National Research Service Award)
F32 HL104924-01A1 Turner (PI) 9/15/10 to 9/15/11
Novel Biomimetic Tissue Architecture as a Cell Delivery Vehicle for Cardiac Regeneration $95,000
Role: Mentor
California Institute of Regenerative Medicine Conference Grant June, 2009
Conference Grant: 2009 UC System-wide Bioengineering Symposium
Role: PI, Symposium Chair $8,000
UC, Merced Graduate and Research Council, 2013-2014 Research Award
Notch reprograms citric acid cycle metabolism to drive vascular Differentiation $10,000
Role: Co-PI with Fabian Filipp
Role: PI California Institute of Regenerative Medicine, New Faculty Award II
RN2-00921-1 McCloskey (PI) 1/2009-12/2013
Building Cardiac Tissue from Stem Cells and Natural Matrices
Role: PI $1,706,255
California Institute for Regenerative Medicine SEED Grant
RS1-00239-1 Khine (PI) 6/01/07-5/31/10
Micro-platform for controlled embryonic stem cell differentiation
Role: Co-PI $363,707
NIH predoctoral fellowship (F31-National Research Service Award)
F31HL087716-0 Blancas (PI) 3/26/07-3/26/10
Angiogenic potential of endothelial progenitor cells is a function of maturation
Role: Mentor $124,000
UC, Merced Graduate and Research Council, 2007-2008 Research Award
Development of a 3-D Scaffolding for the Optimization of Embryonic Coral Cell Growth and Differentiation
Role: PI $5,000
UC, Merced Graduate and Research Council, 2007-2008 Research Award

Towards the Development of a Cardiac Patch
Role: PI $5,000

UC, Merced Graduate and Research Council, 2005-2006 Research Award
Endothelial Differentiation of Human Embryonic Stem Cells $ 2,500

NIH postdoctoral fellowship (F32-National Research Service Award)
F32 HL071461-01A1 McCloskey (PI) 5/15/03 – 8/11/05
Vascular cells derived from embryonic stem cells
Role: PI, Mentor: Robert M. Nerem $144,432

INVITED LECTURES

Oct 1, 2022	Bob Nerem Memorial Lecture (Plenary Talk) at the Society for Applied Cardiovascular Biology (ISACB), Memphis, TN
Aug 30, 2022	Conference on Tissue Science and Regenerative Medicine, Stockholm, Sweden
Dec 13, 2018	Lawrence Livermore National Labs, Livermore, CA
October 12, 2018	Organ-on-a-chip, SelectBiosciences, San Diego, CA
August 28, 2018	Center for Cellular and Biomolecular Machines (CCBM), Merced, CA
July 12, 2018	Tissue Engineering and Regenerative Medicine Conference – Paris, France
Jan 30, 2016	Southern California Systems Biology Conference - Irvine, CA
Jan 30, 2015	Modesto Junior College – Modesto Area Partners in Science (MAPS)
June 19, 2015	UC Bioengineering Systemwide, Irvine, CA
Dec 3-7, 2012	IEEE-EMBS Micro- and Nanoengineering in Medicine, Maui, HI
Aug 28-Sept1, 2012	IEEE in Medicine and Biology Society (EMBS), San Diego, CA
Feb 5, 2012	Texas A&M University – Biomedical Engineering
April 27, 2011	Stanford University – Biomechanical Engineering
March 8, 2011	IGERT-CMMB Seminar Series, UIUC
Dec 11, 2009	10th Annual Wound Healing: Science and Industry, St. Thomas, Virgin Islands
Feb 11, 2009	UC, Riverside – Biomedical Engineering
Jan 23, 2009	Modesto Junior College – Modesto Area Partners in Science (MAPS)
Oct 22, 2008	University of Florida – Biomedical Engineering
March 17, 2008	UC, Berkeley - Bioengineering
June 27, 2003	ASME Summer Bioengineering Conference in Key Biscayne, FL

PEER-REVIEWED JOURNAL PUBLICATIONS

1. Brisbin R, Bartolo M, Leville M, Rajan AK, Jahan B, McCloskey KE, Gopinathan A, Ghosh S, Baxter R. Tuning three-dimensional nano-assembly in the mesoscale via bis(imino)pyridine molecular functionalization. **Scientific Reports** Volume 12, 844 (2022) https://doi.org/10.1038/s41598-022-04851-6

2. Shen EM McCloskey KE. Affordable, high-resolution bioprinting with embedded concentration gradients. **Bioprinting** Volume 21, March 2021, e00113. doi:10.1016/j.bprint.2020.e00113

3. Jahan B, McCloskey KE. Differentiation and expansion of endothelial cells requires pre-optimization of KDR+ expression kinetics. **Stem Cell Research** Volume 42, January 2020. doi: 10.1016/j.scr.2019.101685

4. Wong L, Kumar A, Chua J, Gabela-Zuniga B, Singh G, Happe CL, Engler AJ, Fan Y, McCloskey KE. Substrate Stiffness Directs Diverging Vascular Fates. **Acta Biomaterialia** Volume 96, 15 September 2019, Pages 321-329. https://doi.org/10.1016/j.actbio.2019.07.030

5. Madfis NC, Lin Z, Kumar A, Douglas SA, Platt MO, Fan Y, McCloskey KE. Co-Emergence of Specialized Endothelial Cells from Embryonic Stem Cells. **Stem Cells and Development** March 1, 2018;27(5):326-335. PMID: 29320922

6. Singh SJ, Turner W, Glaser DE, McCloskey KE**,** Filipp FV. Metabolic shift in density-dependent stem cell differentiation. **Cell Communication and Signaling,** 2017 Oct 20;15(1):44. doi: 10.1186/s12964-017-0173-2. PMID: 29052507.

7. Shen E McCloskey KE. Development of Mural Cells: From In Vivo Understanding to In Vitro Recapitulation. **Stem Cells and Development** 2017 May 2. doi:10.1089/scd.2017.0020. Epub ahead of print, print version on July 11, 2017. PMID: 28462621.

8. Wong L, Pegan J, Basia Gabela-Zuniga Khine M, McCloskey KE. Leaf-inspired microcontact printing vascular patterns. **Biofabrication**, 2017 Jun 1;9(2):021001 doi: 10.1088/1758-5090/aa721d. PMID: 28488588

9. Glaser DE, Turner WS, Madfis N, Wong L, Zamora J, Reyes S, Burns AB, Gopinathan A, McCloskey KE. Multifactorial Optimizations for Directing Endothelial Fate from Embryonic Stem Cells**. PLOS One** December 1, 2016, PMID: 27907001

10. Sa S, Wong L, McCloskey KE. Combinatorial Fibronectin and Laminin Signaling Promotes Highly Efficient Cardiac Differentiation of Human Embryonic Stem Cells. **Bioresearch Open Access,** 2014 Aug 1;3(4):150-61. PMID: 25126479

11. Glaser DE, Burns AB, Hatano R, Medrzycki M, Fan YH, McCloskey KE. Specialized mouse embryonic stem cells for studying vascular development. **Stem Cells and Cloning: Advances and Applications** October 2014, Volume 2014:7 79-88. PMID: 25328412

12. Turner WS, Sandhu N, McCloskey KE. Tissue Engineering: Construction of a Multicellular 3D Scaffold for the Delivery of Layered Cell Sheets. **Journal of Visualized Experiments.** 2014 92, e51044, doi:10.3791/51044.

13. Hatano R, Mercurio K, Luna JI, Glaser D, Leppert V, McCloskey KE. Endothelial Cells Derived from Embryonic Stem Cells Respond to Cues from Topographical Surface Patterns **Journal of Biological Engineering** 2013, **7**(1)**:**18. PMID: 23819656

14. Blancas AA, Wong L, Glaser DE, McCloskey KE. Specialized Tip/Stalk- and Phalanx-like Endothelial Cells from Embryonic Stem Cells. **Stem Cells and Development** May 2013, 22(9): 1398-1407. PMID: 23249281. *Received the CoverHighlight*

15. Sa S, McCloskey KE. Optimization of Activin A and BMP4 Signaling for Efficient Cardiac Differentiation of H7 and H9 Human Embryonic Stem Cells. **Journal of Stem Cells and Regenerative Medicine** J Stem Cells Regen Med 2012;8(3): 198 – 202. PMID. 24693198

16. Sa S, McCloskey KE. Stage-Specific Cardiomyocyte Differentiation Method for H7 and H9 Human Embryonic Stem Cells. **Stem Cell Reviews and Reports**, 2012, 8(4): 1120-1128. PMID: 22890895

17. Turner W, Wang X, Johnson S, Medberry C, Mendez J, Badylak SF, McCord MG, and McCloskey KE. Cardiac Tissue Development for Delivery of Embryonic Stem Cell-Derived Endothelial and Cardiac Cells in Natural Matrices. **Journal of Biomedical Materials Research** 2012, Nov;100(8):2060-72.

18. Turner W, McCloskey KE. Rapid Fibroblast Removal from High Density Human Embryonic Stem Cell Cultures. **Journal of Visualized Experiments,** 2012 e3951, doi: 10.3791/3951.

19. Sa S, Nguyen D, Pegan, JD, Khine M, McCloskey KE. Round-Bottomed Honeycomb Microwells: Embryoid Body Shape Correlates with Stem Cell Fate, **Journal of Developmental Biology and Tissue Engineering**, 2012, May; 4(2):12-22.

20. Blancas AA, Chen C, Stolberg S, McCloskey KE. Adhesive Forces in Embryonic Stem Cells. **Cell Adhesion and Migration**, 2011 Nov 1;5(6):472-9.

21. Blancas AA, Shih AA, Lauer NE, McCloskey KE. Induction of Endothelial Cells from Murine Embryonic Stem Cells in Chemically-Defined Medium. **Stem Cells and Development**, 2011; 20(12): 2153-2161. PMID: 21446878.

22. Glaser D, Gower RM, Lauer NE, Tam K, Blancas AA, Simon SI, McCloskey KE. Functional Regulation of Stem Cell-Derived Endothelial Cells. **Journal of Vascular Research**, 2011; 48: 415-428.

23. Luna PJ, Ciriza J, Garcia-Ojeda M, Lieu DK, Li RA, Fowlkes CC, Khine M, McCloskey KE. Multi-scale Biomimetic Topography for the Alignment of Neonatal and Embryonic Stem Cell-derived Heart Cells. **Tissue Engineering Part C: Methods**, 2011;17(5):579-88. *Received the CoverHighlight*.

24. Nguyen D, Sa S, Pegan JD, Rich B, Xianga G, McCloskey KE, Manilay J, Khine M. Tunable shrink-induced honeycomb microwell arrays for uniform embryoid bodies. **Lab on a Chip**, 2009; 9:3338-3344. *Received the Inside CoverHighlight*.

25. *Invited:* Stolberg S, McCloskey KE. Can Shear Stress Direct Stem Cell Fate? **Biotechnology Progress,** 2009; 25(1): 10-19. *Top 10 most-accessed manuscripts in Biotechnology Progress during February 2009*.

26. Chen C, Pegan J, Luna J, Xia B, McCloskey K, Chin W, Khine M. Shrinky-Dink Hanging Drops: A Simple Way to Form and Culture Embryoid Bodies. **Journal of Visualized Experiments**, 2008; http://www.jove.com/index/Details.stp?ID=692

27. McCloskey KE, Smith D, Jo H, Nerem RM. Embryonic stem cell-derived endothelial cells may lack complete functional maturation in vitro. **Journal of Vascular Research**, 2006; 43(5):411-421.

28. McCloskey KE, Gilroy ME, Nerem RM. Use of Embryonic Stem Cell-Derived Endothelial Cells as a Cell Source to Generate Vessel Structures In Vitro. **Tissue Engineering**, 2005; 11:497-505.

29. McCloskey KE, Lyons I, Rao RR, Stice SL, Nerem RM. Purified and proliferating endothelial cells derived and expanded in vitro from embryonic stem cells. **Endothelium** 2003; 10:329-336.

30. McCloskey KE, Chalmers JJ, Zborowski M. Magnetic Cell Separation: Characterization of Magnetophoretic Mobility. **Analytical Chemistry** 2003; 75:6868-6874.

31. McCloskey K, Moore LR, Hoyos M, Rodriguez A, Chalmers JJ, Zborowski M. Magnetic cell separation is a function of antibody binding capacity (ABC). **Biotechnology Progress** 2003; 19(3):899-907.

32. Hoyos M, McCloskey KE, Moore LR, Nakamura M, Bolwell BJ, Chalmers JJ, Zborowski M. Pulse-injection studies of blood progenitor cells in a quadrupole magnetic flow sorter. **Separation Science and Technology** 2002; 37(4):1-23.

33. McCloskey KE, Comella K, Chalmers JJ, Margel S, Zborowski M. Mobility measurements allow quantitation of secondary antibody binding mechanisms. **Biotechnology and Bioengineering** 2001;75:642-655.

34. McCloskey KE, Chalmers JJ, Zborowski M. Measurement of CD2 Expression of IFN-α Treated Fibrosarcomas using Cell Tracking Velocimetry. **Cytometry** 2001;44(2):137-147.

35. Moore LR, Rodriguez AR, Williams PS, McCloskey K, Bolwell BJ, Nakamura M, Chalmers JJ, Zborowski M. Progenitor cell isolation with a high-capacity quadrupole magnetic flow sorter. **Journal of Magnetism and Magnetic Materials** 2001; 225(1-2):277-284

36. McCloskey KE, Chamlers JJ, Zborowski M. Magnetophoretic Mobilities Correlate to Antibody Binding Capacities. **Cytometry** 2000;40:307-315.

37. Hoyos M, Moore LR, McCloskey KE, Margel S, Zuberi M, Chalmers JJ, Zborowski M. Study of magnetic particles pulse-injected into an annular SPLITT-like channel inside a quadrapole magnetic field. **Journal of Chromatography A** 2000; 903:99-116.

38. Moore LR, Zborowski M, Nakamura M, McCloskey K, Gura S, Zuberi M, Margel S. Chalmers JJ. The use of magnetite-doped polymeric microspheres in calibrating cell tracking velocimetry. **Journal of Biochemical and Biophysical Methods** 2000;44:115-130.

39. Chalmers JJ, Haam S, Zhao Y, McCloskey K, Moore L, Zborowski M, Williams PS. Quantification of Cellular Properties from External Fields and Resulting Induced Velocity: Magnetic Susceptibility. **Biotechnology and Bioengineering** 1999;64:519-526.

40. Chalmers JJ, Haam S, Zhao Y, McCloskey K, Moore L, Zborowski M, Williams PS. Quantification of Cellular Properties from External Fields and Resulting Induced Velocity: Cellular Hydrodynamic Diameter. **Biotechnology and Bioengineering** 1999;64:509-518.

CHAPTERS IN BOOKS

41. *Invited*: Hatano R and McCloskey, KE. Tissue Engineering Approaches for Building Cardiac Tissue. In: **Frontiers in Stem Cell and Regenerative Medicine Research**, Atta-ur- Rahman and Shazia Anjum (ed), 2017: , Vol 7, 121-162, Betham Science, ISBN: 978-1-68108-553-1

42. *Invited*: McCloskey KE Biomimetic Multiscale Topography for Cell Alignment. In: **Emerging Trends in Cell and Gene Therapy**, Danquah MK and Mahato RI (ed.) 2013: 1st Edition, 471-484, Chapter 20, Springer, ISBN 9781627034173

43. *Invited*: McCloskey KE The Biophysical Basis | Effects of Shear Stress on Cells. In: **Comprehensive Biotechnology**, Murray Moo-Young (ed.) 2011: 2nd Edition, Volume 1, 615–623. Elsevier

44. *Invited:* McCloskey KE, Gilroy ME, Nerem RM. Use of Embryonic Stem Cell-Derived Endothelial Cells as a Cell Source to Generate Vessel Structures *In Vitro*. In: **Advances in Tissue Engineering**, 2010, Volume 1, Chapter 25.

45. *Invited:* Blancas AA, Lauer NE, and KE McCloskey KE. Endothelial Differentiation of Embryonic Stem Cells. In: Current Protocols in Stem Cell Biology. 2008 Sep;Chapter 5:Unit 1F.5.

46. *Invited:* McCloskey, K. E., Stice, S.L., Nerem, R.M. (2006). In Vitro Derivation and Expansion of Endothelial Cells from Embryonic Stem Cells. In **Methods in Molecular Biology: Embryonic Stem Cell Protocols.** 2006, Volume II: Differentiation Models, pp. 287-301. Springer

PATENTS

1. U.S. Application No. 13/152, 185 filed on June 2, 2011: Serum-free culture medium and supplement

PRESENTATION AT CONFERENCE PROCEEDINGS

Oct 1, 2022	McCloskey, KE. Joy of Endothelial Cells (Plenary: Bob Nerem Memorial Lecture), International Society for Applied Cardiovascular Biology (ISACB), Memphis, TN
Aug 30, 2022	Zamora J, McCloskey, KE. Vascular Tissue Engineering, Conference on Tissue Science and Regenerative Medicine, Stockholm, Sweden
Jan 6, 2022	Zamora J, McCloskey, KE. Role of Mural Cell Signaling in Microvascular Dimensions and Stability, Cellular and Molecular Bioengineering (CMBE), Indian Wells, CA.
Oct 5, 2018	Wong L, Pegan J, Khine M, McCloskey KE. Leaf-inspired microvascular patterns, Bioprinting World Congress Select Bioscience, San Diego, CA.
Sept 6, 2018	Zamora J, Gopinathan A, McCloskey KE. Stochastic spatial and temporal population-based model for the co-emergence of vascular patterns TERMIS World, Kyoto, Japan.
July 12, 2018	Madfis N, Wong L, McCloskey KE. Tissue Stem Cell Sources for Building Vasculature in Microfluidic Systems, International Conference on Tissue Engineering and Regenerative Medicine (TERMC), Paris, France.
Dec 13, 2016	Glaser DE, Turner WS, Gopinathan A, Madfis N, Wong L, Burns AB, McCloskey KE. Multifactorial Optimizations for Directing Endothelial Fate from Embryonic Stem Cells, Tissue Engineering and Regenerative Medicine Society (TERMIS), San Diego, CA.
Oct 24, 2016	Turner W, Glaser D, Gopinathan A, McCloskey KE. Mathematical Models for Directing Endothelial Fate from Embryonic Stem Cells International Conference on Stem Cell Engineering, Toronto, Canada
May 19, 2016	Turner W, Glaser D, Sa S, Gopinathan A, McCloskey KE. Multifactorial Optimizations for Directing Endothelial Fate from Embryonic Stem Cells, Mathematical Biology Workshop, Merced, CA
Jan 30, 2016	Glaser D, Turner W, Singh S, Filipp F, McCloskey KE. Cell seeding density correlates with a cellular metabolic switch during early stage vascular differentiation, Southern California Systems Biology Conference, Irvine, CA.
July 28, 2015	R Hatano, Turner W, Glaser D, Sa S, McCloskey KE. Vascularized Cardiac Tissue from Induced Pluripotent-derived Cardiomyocytes and Endothelial Cells, Tissue Science and Regenerative Medicine, Rome, Italy
July 21, 2015	Wong L, McCloskey KE. Role for Stiffness in Vascular Fate, Gordon Conference on Biomaterials and Tissue Engineering, Girona, Spain
Feb 4, 2014	Wong L, Drew Glaser D, Choi YS, Young J, Pegan J, Engler A, Pruitt B, Khine M, McCloskey KE, Mechanical Forces for Directing Vascular Cell Fate, American Society for Mechanical Engineering: Nanoengineering in Medicine and Biology, San Francisco, CA
Oct 27, 2013	Sa S, Wong L, McCloskey KE. Combinatorial Fibronectin and Laminin Signaling Promotes Highly Efficient Cardiac Differentiation of Human Embryonic Stem Cells, Biomedical Engineering Society, Seattle, WA
Oct 24, 2012	Blancas AA, Wong L, Glaser DE, and McCloskey KE. Generation of Tip/Stalk-like and Phalanx-like Endothelial Cells from Embryonic Stem Cells, Biomedical Engineering Society, Atlanta, GA
May 1, 2012	Blancas AA, Wong L, Glaser DE, and McCloskey KE. Tip/Stalk Endothelial Cells from Embryonic Stem Cells, Society for Biological Engineering: Stem Cell Engineering, Seattle, WA
Jan 18, 2012	Blancas AA and McCloskey KE. Angiogenic Endothelial Cells from Embryonic Stem Cells in Chemically Defined Medium, Keystone: Angiogenesis, Snowbird, UT
Dec 4, 2012	McCloskey KE, Endothelial Cell Phenotypes from Stem Cells, Micro-Nano Technologies in Medicine, Maui, Hawaii
Dec 7, 2012	Hatano R, Luna J, KE McCloskey, Multi-scale Biomimetic Topography for the for Alignment of Neonatal and Embryonic Stem Cell-derived Heart Cells, TERMIS, Orlando, F
Oct 13, 2011	Blancas AA and McCloskey KE. Endothelial Cells from Embryonic Stem Cells in Serum-Free Conditions, BMES, Hartford, CT
Dec 7, 2010	Luna PJ, Ciriza J, Garcia-Ojeda M, Lieu DK, Li RA, Fowlkes CC, Khine M, McCloskey KE. Multi-scale Biomimetic Topography for the for Alignment of Neonatal and Embryonic Stem Cell-derived Heart Cells. TERMIS, Orlando, FL
Dec 11, 2009	KE McCloskey. Nanomaterials for Cardiovascular Stem Cell Engineering, 10th Annual Wound Healing: Science and Industry, St. Thomas, VI

March 17, 2009	AA Blancas, RM Nerem, KE McCloskey. Vascular Matrix Biology and Bioengineering Workshop II. Functional Vascular Derivatives for Building Microvasculature Tissue from Embryonic Stem Cells. Whistler, British Columbia.
April 14-15, 2008	AA Blancas, B Gennusa, KE McCloskey. Cell Culture Engineering XI. Embryonic Stem Cells Generate Functional Vascular Derivatives for Building Microvasculature Tissue. Sunshine Coast, Queensland, Australia.
March 14, 2008	AA Blancas and KE McCloskey. Serum-Free Endothelial Derivation and Expansion of Murine Embryonic Stem Cells. Tissue Engineering, Hilton Head, SC.
Jan. 21, 2008	AA Blancas and KE McCloskey. Serum-Free Derivation of Endothelial Cells from Embryonic Stem Cells. Stem Cell Engineering, Coronado Island, CA.
June 9, 2007	KE McCloskey, D Smith, H Jo, and RM Nerem, Incomplete Maturation of Embryonic Stem Cell-Derived Endothelial Cells. Tissue Engineering and Regenerative Medicine International Society (TERMIS), Toronto, Canada.
April 15, 2007	KE McCloskey, D Smith, H Jo, and RM Nerem, CA. Characterization of Embryonic Stem Cell-Derived Endothelial Cells. Keystone Symposium: Tissue Engineering and Developmental Biology, Snowbird, UT.
April 7, 2007	KE McCloskey Vascular Derivatives from Mouse Embryonic Stem Cell: An Overview. Young Investigators in Stem Cell Biology (YISCB). San Diego, CA
Oct 12, 2006	KE McCloskey, SL Stice, and RM Nerem. Biomedical Engineering Society, Chicago, IL. An In Vitro Model of Vascular Maturation from Embryonic Stem Cells: Endothelial versus Smooth Muscle
Sept 15, 2006	KE McCloskey, D Smith, H Jo, and RM Nerem, CA Tissue Engineering, Davis, CA. Incomplete Maturation of Embryonic Stem Cell-Derived Endothelial Cells
April 25, 2006	KE McCloskey, SL Stice, and RM Nerem. Regenerate, Pittsburgh, PA, Methodology For Differentiation, Purification And Expansion Of Vascular Endothelial And Smooth Muscle Cell From Embryonic Stem Cells
March 26, 2006	KE McCloskey, D Smith, H Jo, and RM Nerem. Keystone Symposia: Stem Cells, Whistler, BC, Incomplete Maturation of Embryonic Stem Cell-Derived Endothelial Cells
Dec. 13, 2005	KE McCloskey, D Smith, H Jo, and RM Nerem. American Society for Cell Biology, San Francisco, Ca, Embryonic Stem Cell-Derived Endothelial Cells and In Vivo-Derived Endothelial Cells: A Comparison
Oct. 1, 2005	KE McCloskey, D Smith, H Jo, and RM Nerem. Biomedical Engineering Society, Baltimore, MD, Comparison of Embryonic Stem Cell-Derived Endothelial Cells with In Vivo-Derived Endothelial Cells
July 12, 2005	KE McCloskey, M Gilroy, and RM Nerem. Biochemical Engineering XIV in Harrison Hot Springs, Canada, Embryonic Stem Cell-Derived Endothelial Cells as a Cell Source in the Development of Pre-Vascularized Materials
June 24, 2005	KE McCloskey, SL Stice, and RM Nerem. International Society of Stem Cell Research (ISSCR) in San Francisco, CA. Optimization of Vascular Endothelial Cell and Smooth Muscle Cell Differentiation, Purification and Expansion from Flk1+ Embryonic Stem Cells.
Mar. 10, 2005	KE McCloskey, SL Stice, and RM Nerem. Engineering Tissues 2005 Workshop in Hilton Head, SC. Optimization of Vascular Endothelial Cell and Smooth Muscle Cell Differentiation, Purification and Expansion from Flk1+ Embryonic Stem Cells.
Oct. 11, 2004	KE McCloskey and RM Nerem. TESI-ETES Meeting in Lausanne, Switzerland. Smooth Muscle Cells Derived from Embryonic Stem Cells.
Sept. 13, 2004	KE McCloskey, SL Stice, and RM Nerem. Cardiovascular Regenerative Medicine in Bethesda, MD. Optimization of Vascular Endothelial and Smooth Muscle Cell Differentiation and Expansion from Flk+ Embryonic Stem Cells.
June 11, 2004	KE McCloskey, M Gilroy, and RM Nerem. Regenerate: Tissue Engineering the Human Body, Seattle, WA. Embryonic Stem Cell-Derived Endothelial Cells Exhibit Tubulogenesis in Collagen Gels
Jan. 26, 2004	KE McCloskey, SL Stice, and RM Nerem. Keystone Symposia – Stem Cells, Keystone, CO. An In Vitro Model of Endothelial Cell Maturation from Embryonic Stem Cells: Quantification of the Transient Expression Levels of Endothelial/Stem Cell Markers
Dec. 11, 2003	KE McCloskey and RM Nerem. Tissue Engineering Society International (TESI) 6th Annual Conference in Orlando, FL. Changes in Expression Levels of Endothelial/Stem Cell Markers Correlate with Distinct Maturation Stages of Embryonic Stem Cells to Endothelial Cells

Nov 19, 2003	KE McCloskey and RM Nerem. AIChE conference in San Francisco, CA. Embryonic stem cell-derived endothelial cells form vascular structures in collagen gels.
June 27, 2003	KE McCloskey, IG Lyons, RR Rao, SL Stice, and RM. Nerem. The American Society of Mechanical Engineers Summer Bioengineering Conference in Key Biscayne, FL. Pure populations of proliferating endothelial cells derived and expanded in vitro from embryonic stem cells.
March 3, 2003	KE McCloskey, SL Stice, and RM Nerem. The 6th International Congress of the Cell Transplant Society in Atlanta, GA. Uniform populations of endothelial cells derived and expanded from murine embryonic stem cells.
Feb. 27, 2003	KE McCloskey, SL Stice, and RM Nerem. Engineering Tissues 2003 Workshop in Hilton Head, SC. Endothelial cells derived, expanded, and characterized in vitro from mouse embryonic stem cells.
Oct. 25, 2002	KE McCloskey, IG Lyons, RR Rao, SL Stice, and RM. Nerem. Biomedical Engineering Society in Houston, TX. Endothelial progenitor cells from embryonic stem cells.
Oct. 20, 2002	KE McCloskey, IG Lyons, RR Rao, SL Stice, and RM. Nerem. Arthur M. Sackler colloquium in Irvine, CA entitled "Regenerative Medicine," sponsored by the National Academy of Sciences. Isolation of a pure population of endothelial cells from embryonic stem cells.
Sept. 26, 2002	KE McCloskey, IG Lyons, RR Rao, SL Stice, and RM. Nerem. Georgia Life Sciences Summit in Atlanta, GA. Endothelial progenitor cells from embryonic stem cells.
April 2, 2002	KE McCloskey, D Leigh, M Zborowski, JJ Chalmers. Cell Culture Engineering VII in Snowmass Village, CO. CD34 antigen expression on hematopoietic progenitor cells is related to the efficiency of magnetic cell separation.
Nov. 8, 2001	KE McCloskey, D Leigh, M Zborowski, JJ Chalmers. AIChE Conference in Reno, NV. Analysis of Antigen Expression on Hematopoietic Progenitor Cells for Magnetic Cell Separation
June 11, 2001	KE McCloskey, M Zborowski, JJ Chalmers. Biochemical Engineering XII Conference in Rohnert Park, California. Characterization of magnetophoretic mobility: An overview
April 3, 2001	KE McCloskey, JJ Chalmers, L Moore, M Zborowski. ACS Conference in San Diego, CA. Performance of Continuous Magnetic Cell Separation is a Function of Cellular Antibody Binding Capacity
March 2, 2001	KE McCloskey, JJ Chalmers, M Zborowski. Lerner Research Institute Graduate Student Award Winning Papers - The Cleveland Clinic Foundation. Experimental and Theoretical Characterization of Magnetophoretic Mobility
Nov. 14, 2000	KE McCloskey, JJ Chalmers, K Comella, K Melnik, LR Moore, M Zborowski. AIChE Conference in Los Angeles, CA. Immunomagnetic Cell Separation: Experimental and Theoretical Characterization of Magnetophoretic Mobility
Nov. 5, 1999	KE McCloskey, M Zborowski, JJ Chalmers. AIChE Conference in Dallas, TX. Does Cell Surface Marker Density (number) Indicate Cell Function?
Nov. 5, 1999	KE McCloskey, M Zborowski, JJ Chalmers. AIChE Conference in Dallas, TX. Quantification of the Number of Cellular Surface Antigens.

STUDENTS ADVISED

Postdoctoral Students

May, 2010 – May, 2014	William Turner, Primary Advisor William is working on the development of a cardiac patch using stem cell derivatives and natural extracellular matrices. NRSA post-doctoral fellow and CIRM stem cell trainee. Currently working for Nucleus Global.

PhD Students

August 2022 – present	Zeinab Arab (Hoda) Zadeh, Primary Advisor PhD student in UC, Merced's Materials and Biomaterials Science and Engineering (MBSE) Graduate Group.
June 2022 – present	Metzli Montero, Primary Advisor PhD student in UC, Merced's Materials and Biomaterials Science and Engineering (MBSE) Graduate Group, Eugene V. Cota-Robles Fellowship 2022-2024 and G-RISE participant.

April 2022 – present Shiwani Limbu, Primary Advisor
PhD student in UC, Merced's Quantitative and Systems Biology (QSB) Graduate Group.

August 2018 – present Maria Mendoza, Primary Advisor
PhD student in UC, Merced's Quantitative and Systems Biology (QSB) Graduate Group. CCBM Fellowship and GEM Fellowship 2022-2023 Maria examines pericyte signaling during vascular assembly after bioprinting.

Jan 2017 – present Jose Zamora, Primary Advisor
PhD student in UC, Merced's Materials and Biomaterials Science and Engineering (MBSE) Graduate Group, CCBM Fellowships, Central Valley Fellowship and MBSE Dissertation Fellowship. Jose develops experimental and computational models of vascular fate and assembly.

Aug 2014 – Aug 2020 Edwin Shen, Primary Advisor
PhD student in UC, Merced's Biological Engineering and Small-scale Technologies (BEST) Graduate Group. Edwin developed a novel biological printer for studying vascular fate. IGERT Fellowship 2015-2016, Process Development with Pfizer

May 2012 – Dec 2019 Anley Tefara, Primary Advisor
PhD student in UC, Merced's Materials and Biomaterials Science and Engineering (MBSE) Graduate Group. Anley is studied reprogramming, cardiac stem cell fate, and bioreactor design. NSF-funded STC Diversity Fellowship 2011-2013, Mentored Research Fellowship 2013-2014, Research Associate at Tenaya Therapeutics

Aug 2013 – Aug 2019 Rachel Hatano, Primary Advisor
PhD student in UC, Merced's Materials and Biomaterials Science and Engineering (MBSE) Graduate Group. Rachel worked on the development of a 3D tissue graft for heart repair. IGERT Fellowship 2013-2015. Chief Staff Scientist at Deciduous Therapeutics

Aug 2013 – Sept 2018 Lian Wong, Primary Advisor
PhD student in UC, Merced's Materials and Biomaterials Science and Engineering (MBSE) Graduate Group. Lian studied the role of material stiffness in vascular cell fate. IGERT Fellowship 2013-2015 and CCBM fellow 2017, Application Scientist in Cell Therapy with Invetech.

Aug 2012 – Aug 2018 Nicole Madfis, Primary Advisor
PhD student in UC, Merced's Quantitative and Systems Biology (QSB) Graduate Group. Nicole is profiling the intrinsic angiogenic behavior of stem-cell derived endothelial subphenotypes. Dean's Dissertation Award. Product Manager with Fuji Films Cellular Dynamics.

Aug 2009 – Dec 2014 Drew Glaser, Primary Advisor
PhD student in UC, Merced's Biological Engineering and Small-scale Technologies (BEST) Graduate Group. Drew is developed a novel dual reporter mouse embryonic stem cell line for endothelial and smooth muscle derivation to enable her studies in real time vascular development. IGERT Fellow 2011-2014, President's Dissertation Year Fellow 2014. Postdoc with Steve George at UC, Davis and then Research Scientist at Janssen, Inc.

Aug 2008- May 2013 Silin Sa, Primary Advisor
PhD student in UC, Merced's Biological Engineering and Small-scale Technologies (BEST) Graduate Group. Silin is working on cardiac stem cell differentiation from embryonic stem cells. Her work one best oral presentation at our UC-Systemwide Bioengineering Symposium, 2009. Research Scientist at Stanford University and then Scientist at Becton Dickinson.

Dec 2005- Oct 2011 Alicia Blancas, Primary Advisor
PhD student and NIH pre-doctoral fellow in UC, Merced's Quantitative and Systems Biology (QSB) Graduate Group. Alicia is characterizing the angiogenic and vasculogenic potential of embryonic stem cell derived-endothelial cells at 4 operationally defined stages of differentiation. Her research proposal was awarded a 4 year NRSA (pre-doctoral fellowship) by NIH. Postdoc with Jane Grande Allen at Rice University.

M.S. Students

Jun, 2022 – Aug 2022 Sebastian Mesones Mancilla, Advisor.
NSF-funded STC CEMB Trainee from Cal State Fullerton

Aug 2017 – May 2020	Basharat Jahan, Primary Advisor PhD student in UC, Merced's Biological Engineering and Small-scale Technologies (BEST) Graduate Group. Resident Fellow 2018-2019. Intern with Biomarin Pharmaceutical Scientist with Novanortis
Aug 2009 - Feb 2011	Jesus Luna, Primary Advisor Graduate student in UC, Merced's Biological Engineering and Small-scale Technologies (BEST) Graduate Group. Jesus explored using nano-patterning for cardiac cell alignment. 2nd place in the UCM Research Day poster competition in 2010 and 1st place at NSF-funded Summer Institute on BioSensing and BioActuation at UIUC.
Aug 2013 – Jan 2015	Yimy Villa, Primary Advisor San Francisco University, CIRM Fellow
Aug 2006- May 2009	Sarah Stolberg, Primary Advisor M.S. student in UC, Merced's Quantitative and Systems Biology (QSB) Graduate Group.
Aug 2007- May 2009	Bing Xia, Primary Advisor M.S. student in UC, Merced's Biological Engineering and Small-scale Technologies (BEST) Graduate Group.