

University of California, San Francisco

CURRICULUM VITAE

Name: Marcus O Muench, PhD

Position: Associate Adjunct Professor
Laboratory Medicine
School of Medicine

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EDUCATION

1981 - 1983	College of Marin; Kentfield, CA.	A.S. Physical Sciences
1983 - 1986	University of California at Davis, CA	B.S. Genetics
1986 - 1992	Cornell University Medical College; New York, NY.	Ph.D. Cell Biology & Genetics

PRINCIPAL POSITIONS HELD

1986 - 1992	Graduate Student. Cornell University Medical College. Laboratory of Developmental Hematopoiesis; Sloan-Kettering Institute, New York, NY.
1992 - 1995	Post Doctoral Fellow. Department of Human Immunology; DNAX Research Institute of Molecular and Cellular Biology, Palo Alto, CA.
1995 - 1999	Assistant Research Cellular Biologist. The Fetal Treatment Center Research Laboratory, Department of Surgery; University of California at San Francisco.
1999 - 2000	Research Associate (WOS). The Fetal Treatment Center Research Laboratory, Department of Surgery; University of California at San Francisco.
2000 - 2001	Assistant Research Biologist. Department of Laboratory Medicine; University of California at San Francisco.
2001 - 2006	Assistant Adjunct Professor. Department of Laboratory Medicine; University of California at San Francisco.
2006 - present	Associate Adjunct Professor (WOS) Department of Laboratory Medicine; University of California at San Francisco.

OTHER POSITIONS HELD CONCURRENTLY

2006 - 2008	Vitalant Research Institute	Associate Investigator
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2009 - present Vitalant Research Institute

Senior Scientist

HONORS AND AWARDS

1983	Outstanding Award for the presentation of a paper at the 3rd annual meeting.	The Association of North Bay Scientists
1983	Scholarship	Signorelli Foundation
1983	Scholarship	Mill Valley Rotary Club
1997	Individual Investigator Research Grant	UCSF Academic Senate
1997	Research Grant	UCSF Research Evaluation and Allocation Committee
2001	Research Career Award	NIH/NIDDK
2005	Member	UCSF Liver Center
2013	Scholar	National Blood Foundation

KEYWORDS/AREAS OF INTEREST

Hematopoiesis, Development, Hepatology, Stem Cells, Transplantation, Transfusion

PROFESSIONAL ACTIVITIES**MEMBERSHIPS**

2006 - present American Association of Blood Banks
 - present ISEH-Society for Hematology and Stem Cells.

2011 - present American Association for Laboratory Animal Science

2017 - present Perinatal Stem Cell Society

2018 - present International Society for Advancement of Cytometry

SERVICE TO PROFESSIONAL PUBLICATIONS

2005 - present Editorial Board Member for Current Stem Cell Research

2009 - 2013 Editorial Board Member for The Open Bone Journal

2009 - 2013 Editorial Board Member for The Open Stem Cell Journal

2010 - 2014 Editorial Board Member ISRN Hematology

2010 - 2014 Editorial Board Member Stem Cell Studies

2011 - 2018 Section Editor, Current Tissue Engineering

2012 - present Editorial Board Member Dataset Papers in Science-Immunology

2012 - 2017 Editorial Board Member Dataset Papers in Science

2012 - 2012 Editorial Advisory Board Member Niche

2013 - present Editorial Board Member World Journal of Methodology

2014 - 2016 Editorial Board Member Hepatoma Research

1995 - present A recent review history can be found at <https://publons.com/author/325842>. Ad hoc referee for: American Journal of Transplantation, Biologicals, Biotechnology (NY), Blood, BMC Cell Biology, Brazilian Journal of Medical and Biological Research, Clinical Immunology, Clinics and Practice, Experimental Hematology, Expert Opinion on Biological Therapy, Expert Review of Obstetrics & Gynecology, Haematologica/The Hematology Journal, Journal of the American Association for Laboratory Animal Science, Journal of Biomedicine and Biotechnology, Journal of Blood Disorders & Transfusion, Journal of Cancer Research and Clinical Oncology, Journal of Hepatology, Journal of Immunological Methods, Journal of Translational Medicine, Journal of Visualized Experiments, Liver Transplantation, MicroMedicine, Nature Communications, The Open Arthritis Journal, PLOSONe, Proceedings of the National Academy of Sciences USA, Scientific Reports, Stem Cells, Stem Cells and Development, Stem Cell Research, Stem Cells Translational Medicine, Swiss Medical Weekly, World Journal of Gastroenterology, World Journal of Hepatology, World Journal of Stem Cells, World Journal of Transplantation, "Perinatal Stem Cells, 2nd Edition" Book Review for Wiley-Blackwell Publishing.

INVITED PRESENTATIONS - INTERNATIONAL

1993	Young investigator's session of the annual meeting of the International Society of Hematology. Rotterdam, Holland.	Presenter
1996	Annual meeting of the International Society of Hematology. New York, NY.	Presenter
1996	Universidad Autónoma, Madrid, Spain.	Presenter
1998	In Utero Stem Cell Transplantation and Gene Therapy/COGENT Society Symposium. Portland Oregon.	Presenter
2001	Fifth International Symposium on In Utero Stem Cell Transplantation and Gene Therapy. Reno, Nevada, October 29, 2001.	Presenter
2004	Centre for Regenerative Medicine, University of Bath. Bath, United Kingdom.	Presenter
2013	EMBO Workshop on Liver and Pancreas in Cape Sounio, Athens, Greece.	Senior author on abstract

INVITED PRESENTATIONS - NATIONAL

1995	Duke University, Durham, NC.	Presenter
1995	Amgen, Thousand Oaks, CA.	Presenter
1999	VIRxSYS Corp., Gaithersberg, MD.	Presenter
1999	BioTransplant Inc., Charlestown, MA.	Presenter
1999	Genentech Inc., Burlingame, CA.	Presenter
2000	Monsanto, St. Louis, MO.	Presenter
2000	University of Louisville, James Graham Brown Cancer Center, Louisville, KY.	Presenter
2001	Coriell Institute for Medical Research, Camden, NJ.	Presenter
2001	NASA Ames Research Center, Moffett Field, CA.	Presenter
2003	AVIVA Biosciences Corporation, San Diego, CA	Presenter

2003	Chiron Corporation, Emeryville, CA.	Presenter
2018	Pediatric Cancer Nanocourse, Children's Cancer Therapy Development Institute. Beaverton, OR.	Presenter

INVITED PRESENTATIONS - REGIONAL AND OTHER INVITED PRESENTATIONS

2001	Meeting of the Development and Regeneration Research Group, UCSF	Presenter
2001	Reproductive Biology Seminar sponsored by the Center for Reproductive Sciences, UCSF	Presenter
2005	Vitalant Research Institute, San Francisco, CA.	Presenter
2006	The Blood Systems Foundation/Vitalant Research Institute Annual Meeting, San Francisco, CA.	Presenter
2006	UCSF Liver Center Retreat and Advisory Board Annual Meeting. Mill Valley, CA.	Presenter
2007	UCSF Fetal Treatment Center. San Francisco, CA.	Presenter
2007	California Pacific Medical Center, San Francisco, CA.	Presenter
2008	UCSF Liver Interest Group. San Francisco, CA.	Presenter
2009	Center for Cerebrovascular Research Department of Anesthesia and Perioperative Care UCSF at San Francisco General Hospital. San Francisco, CA.	Presenter
2010	California Pacific Medical Center, San Francisco, CA.	Presenter
2010	Vitalant Research Institute, Summer-Internship Lunchtime Research-Presentation Program. San Francisco, CA.	Presenter
2011	California Pacific Medical Center, San Francisco, CA.	Presenter
2011	Stem Cell Certificate Program Course, City College San Francisco, CA.	Presenter
2011	Vitalant Research Institute, Summer-Internship Lunchtime Research-Presentation Program. San Francisco, CA	Presenter
2011	Center for Reproductive Sciences, Fisher laboratory, UCSF.	Presenter
2012	Center for Cerebrovascular Research Department of Anesthesia and Perioperative Care UCSF at San Francisco General Hospital. San Francisco, CA.	Presenter
2013	Vitalant Research Institute, Summer-Internship Lunchtime Research-Presentation Program. San Francisco, CA.	Presenter
2013	California Pacific Medical Center, San Francisco, CA	Presenter
2014	Vitalant Research Institute Graduate Student and Post-Doc Seminar Series. San Francisco, CA, June 19, 2014	Presenter
2014	Vitalant Research Institute Meeting on Eradication of HIV Reservoirs using Biological Strategies: HSCT/GVHD, Targeted Monoclonal Abs, NK cells, CCR5 Knock-Outs. San Francisco, CA, June 18, 2014.	Presenter

2014	Vitalant Research Institute, Summer-Internship Lunchtime Research-Presentation Program. San Francisco, CA	Presenter
2014	Gateway High School AP Biology Class. San Francisco, CA	Presenter
2015	Concord High School students at Blood Centers of the Pacific, San Francisco, CA	Presenter
2015	California Pacific Medical Center, San Francisco, CA	Presenter
2016	California Pacific Medical Center, San Francisco, CA	Presenter
2016	Hematology-Oncology Division Meeting, University of California San Francisco.	Presenter
2016	Vitalant Research Institute, Summer-Internship Lunchtime Research-Presentation Program. San Francisco, CA	Presenter
2017	Stem Cell Center, Fisher laboratory, UCSF.	Presenter
2017	Vitalant Research Institute, Summer-Internship Lunchtime Research-Presentation Program. San Francisco, CA	Presenter
2018	Vitalant Research Institute, Summer-Internship Lunchtime Research-Presentation Program. San Francisco, CA	Presenter
2019	Vitalant Research Institute, Post-Doc Seminar Series. San Francisco, CA	Presenter

GOVERNMENT AND OTHER PROFESSIONAL SERVICE

1999 - 1999	National Institute of Health, NHLBI	Ad Hoc Reviewer
2001 - 2001	Swiss National Science Foundation	Ad Hoc Reviewer
2006 - 2006	National Institute of Health, NIAID Ad Hoc Reviewer for a PO1 focusing on stem cell therapies for primary immunodeficiencies.	Ad Hoc Reviewer
2006 - 2006	National Institute of Health, NIAID Ad Hoc Reviewer for R34 and UO1 clinical trial planning and implementation grants.	Ad Hoc Reviewer
2006 - 2006	Singapore National Medical Research Council	Ad Hoc Reviewer
2007 - 2007	National Institute of Health, NIAID Ad Hoc Reviewer for a PO1 focusing on stem cell therapies for primary immunodeficiencies.	Ad Hoc Reviewer
2007 - 2007	National Institute of Health, NIAID Ad Hoc Reviewer for R34 and UO1 clinical trial planning and implementation grants.	Ad Hoc Reviewer
2008 - 2008	Singapore National Medical Research Council	Ad Hoc Reviewer
2010 - 2011	Scientist Solutions, Indian Graduate-Student Project Grants	Ad Hoc Reviewer
2011 - 2011	National Institute of Health, NIAID Ad Hoc Reviewer for a PO1 focusing on gene therapy for primary immunodeficiencies.	Ad Hoc Reviewer
2011 - 2011	Singapore National Medical Research Council	Ad Hoc Reviewer
2012 - 2012	National Institute of Health, NIAID Ad Hoc Reviewer for UO1 clinical trial proposals.	Ad Hoc Reviewer
2013 - 2013	Singapore National Medical Research Council	Ad Hoc Reviewer

2013 - 2013	National Institute of Health, NIAID Special Emphasis Panel for Autoimmunity Centers of Excellence, UM1 Clinical Research Program and U19 Basic Research Program.	Ad Hoc Reviewer
2014 - 2014	National Institute of Health, NIAID SBIR Phase II Clinical Trial Implementation Cooperative Agreement (U44) and Clinical Trial Planning Grants (R34)	Ad Hoc Reviewer
2015 - 2015	National Institute of Health, NHLBI Ad Hoc Reviewer for a PO1 focusing on gene therapy of hematopoietic diseases.	Ad Hoc Reviewer
2015 - 2016	Fondazione Telethon	Ad Hoc Reviewer
2015 - 2015	National Institute of Health, NIAID ad hoc member for Investigator Initiated Extended Clinical Trial (RO1), Clinical Trial Implementation Cooperative Agreement (U01) and Clinical Trial Planning Grant (R34) Scientific Review Panel	Ad Hoc Reviewer
2016 - 2016	National Institute of Health, NIAID ad hoc member for Clinical Trial Implementation Cooperative Agreement (U01) and Clinical Trial Planning Grant (R34) Scientific Review Panel	Ad Hoc Reviewer
2017 - 2017	European Research Council	Ad Hoc Reviewer

UNIVERSITY AND PUBLIC SERVICE

SERVICE ACTIVITIES SUMMARY

Current service activities include managing research committee and institutional animal care and use review of all animal research activities at Vitalant Research Institute. I am also member of the advisory committee for the San Francisco City College CIRM Bridges to Stem Cell grant internship program.

DEPARTMENTAL SERVICE

1995 - 1999	Research Committee, Department of Surgery	Committee Member
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SERVICE AT OTHER UNIVERSITIES

2011 - 2014	Advisory Committee for the Stem Cell Pipeline Project funded by the NSF Advanced Technology Education Program.	City College San Francisco
2011 - present	Advisory Committee for CIRM Bridges to Stem Cells grant program.	City College San Francisco

COMMUNITY AND PUBLIC SERVICE

2010 - present	City College of San Francisco	Student mentor and Advisory Committee member for the CIRM Bridges to Stem Cells Program
2016 - present	San Mateo High School Biotechnology Program	Student mentor

CONTRIBUTIONS TO DIVERSITY

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Supervisor for undergraduate and post-graduate interns from City College of San Francisco, which has a robust program in training for employment in the biotechnology field. These interns represent a diverse group of women and men. Upon completion of their internships, most of the interns have gone on to get jobs in research (at VRI, UCSF and local research firms) or gone on to continue their education.

TEACHING AND MENTORING

TEACHING SUMMARY

My teaching experience over the last 5 years has been primarily through one-on-one training in the research laboratory setting. I participated in the UCSF intercessions 'Advances in Medical Sciences' courses by leading small group discussions from 2006-2012. Nonetheless, the vast majority of my teaching hours were dedicated to training post-doctoral fellows in my laboratory and providing many internship opportunities to high school, undergraduate, and graduate students. In the last 5 years I have supervised 2 post-doctoral fellows. In addition, I interact on a daily basis with post-docs, graduate students and interns working at Vitalant Research Institute and participate in their formal and informal training. The three main programs supporting the internships are the Vitalant Research Institute's Summer research program, the San Mateo High School Biotechnology Summer Internship Program, and the CIRM-funded Stem Cell Research Internship program from the City College of San Francisco. I have worked closely with the latter program by helping to draft the original grant proposal that funds the program and I sit on the outside committee that advises the program directors at CCSF on program content and objectives. To date, I have mentored 19 CCSF students for 6 to 9 months.

FORMAL TEACHING

	Academic Yr	Course No. & Title	Teaching Contribution	School	Class Size
	2006 - 2012	UCSF Intercessions Advances in Medical Sciences Course: April 2006, Oct. 2006, Oct. 2007, May 2008, June 2008, Oct. 2008, April 2009, June 2009, Oct. 2009, April 2010, June 2010, Oct. 2010, April 2011, June 2011, Oct. 2011 and April 2012.	Small Group Discussion Leader	Medicine	6-12

INFORMAL TEACHING

1998 - present Supervision of research activities of high school students, undergraduate students, medical students, postdoctoral fellows and clinical fellows.

MENTORING SUMMARY

My current mentoring activities are focused on laboratory training and career advice for post-doctoral fellows and interns at various stages in the education system, primarily from City College of San Francisco and San Mateo High School. Details are presented in the teaching narrative above.

PREDOCTORAL STUDENTS SUPERVISED OR MENTORED

Dates	Name	Program or School	Mentor Type	Role	Current Position
1998 - 1998	Jason R. Maxwell-Wiggins	Medical Student on Research Rotation, Mayo Graduate School of Medical Education	Project Mentor	Daily interactions for several months. One manuscript co-authored.	Pediatrician, HealthPartners St. Paul Clinic, Saint Paul, MN
1999 - 2002	Eva M. Pott Bärtsch	Medical Student on Elective Research Leave, Ludwig-Maximilians-Universität München, Germany	Project Mentor	Weekly interactions. One manuscript co-authored.	Pediatrician, Hamburg, Germany
2003 - 2003	Miling Yan	Undergraduate Summer Student, Caltech University	Co-Mentor/Clinical Mentor	Weekly interactions during summer internship.	
2004 - 2004	Janice Niver	Undergraduate Summer Student, Tulane University	Co-Mentor/Clinical Mentor	Weekly interactions during summer internship.	Child And Adolescent Psychiatrist at Kaiser Permanente, Denver.
2005 - 2005	Wei Lee	Undergraduate Summer Student, University of California Davis	Co-Mentor/Clinical Mentor	Weekly interactions during summer internship.	Registered Nurse Labor Delivery at Kaiser Permanente, San Francisco Bay Area.
2006 - 2006	Julia M. Healy	Undergraduate Summer Student, University of California Berkeley	Project Mentor	Daily interactions during summer internship.	Professional Development and Education Consultant at Kaiser Permanente, Los Angeles.

Dates	Name	Program or School	Mentor Type	Role	Current Position
2008 - 2008	Sanghamitra Chakraborty	Summer Intern, City College of San Francisco Biotechnology Certificate Program	Project Mentor	Daily interactions during summer internship.	
2009 - 2010	Chandni Pindoria	Undergraduate Intern, University of California Berkeley	Project Mentor	Daily interactions during summer internship.	Pediatrics Resident, University of Toledo
2009 - 2012	Jennifer Leddy	Undergraduate Intern, San Francisco State University	Project Mentor, Career Mentor	Daily interactions during summer internship. Intermittent career mentoring.	Research Associate III at Gladstone Institutes, San Francisco
2010 - 2010	Nicole Varga	Post-Baccalaureate Student Intern, Diablo Valley College	Project Mentor	Daily interactions during summer internship. One manuscript co-authored.	Yoga by Fire (For Autism, Teens & PTSD Recovery), San Diego, CA
2010 - 2011	Robert K. Lodes	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during summer internship.	IT professional.
2011 - 2011	Ashley I. Beyer	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during 6-month internship.	Research Services Manager, Vitalant Research Institute
2011 - 2011	Liz. B. Wang	Post-Baccalaureate Student Intern, San Francisco State University	Project Mentor	Daily interactions during summer internship.	Urology Resident at Boston University Medical Center
2011 - 2011	Rahul Thakker	Undergraduate Intern, University of California Berkeley	Project Mentor	Daily interactions during summer internship. One manuscript co-authored.	Medical Student at NYU School of Medicine.

Dates	Name	Program or School	Mentor Type	Role	Current Position
2011 - 2012	Mario C. Rivera	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during 6-month internship.	Applications Engineer at ON Semiconductor.
2011 - 2012	Scott Martini	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during 6-month internship.	Undergraduate in Marine Biology, San Francisco State University until 2015.
2011 - 2011	Lila Sirven-Villaros	Medical Student, University of Montpellier, France on Elective Research Rotation	Project Mentor	Daily interactions during 2-month internship.	Interne en Neurologie, Centre Antoine Lacassagne, CHU Nice, Nice, France.
2012 - 2012	Wilson Tam	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during 8-month internship.	
2012 - 2013	Matt Wilkinson	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during 1 year internship.	
2012 - 2013	Benjamin Patterson	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during 6-month internship.	
2013 - 2014	Usha Mulvaney	CIRM Stem Cell Research Intern, City College of San Francisco and Graduate Student, University of San Francisco	Project Mentor	Daily interactions during 6-month internship and intermittent interactions for additional 1 year.	U.S. Navy

Dates	Name	Program or School	Mentor Type	Role	Current Position
2013 - 2013	Maya Mahajan	Undergraduate Intern, University of California Berkeley	Project Mentor	Daily interactions during summer internship. One manuscript co-authored.	Assistant Coordinator of the Writing Program at UC Berkeley Student Learning Center
2013 - 2014	Betty Cheng	CIRM Stem Cell Research Intern, City College of San Francisco and Graduate Student, University of San Francisco	Project Mentor	Daily interactions during summer internship.	Operations at Matter of Trust, San Francisco, CA
2014 - 2015	Elizabeth Yee	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions over 1 year internship. One manuscript co-authored.	
2014 - 2015	Ventura Mendoza	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during 11-month internship.	Assistant Specialist, UCSF
2015 - 2015	Guilherme Salles Magalhaes	Medical student from Federal University of Minas Gerais, Brazil	Project Mentor	Daily interactions during summer internship.	Medical Student
2015 - 2016	Kristen Valanoski	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions over 1 year internship.	Research Associate I, Vitalant Research Institute
2015 - 2016	Rachel Martinelli	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions over 1 year internship.	Student San Francisco Sate University

Dates	Name	Program or School	Mentor Type	Role	Current Position
2015 - 2016	Shivani Desai	Research Intern	Project Mentor	Daily interactions over 9 month internship. Two manuscripts co-authored.	Research Associate II, Vitalant Research Institute.
2016 - 2017	Cindy Zhang	Summer Intern from San Mateo High School Biotechnology Program	Project Mentor	Daily interactions during summer internship and weekly interactions for 9 months afterwards.	Undergrad student, Harvard University
2016 - 2016	Seanna Fess	Summer Intern from San Mateo High School Biotechnology Program	Project Mentor	Daily interactions during summer internship.	Undergrad student, Carnegie Mellon University
2016 - 2016	Alan Gutierrez	Undergraduate Intern, San Francisco State University	Project Mentor	Daily interactions during summer internship.	Research Associate I, Vitalant Research Institute
2016 - 2017	Nuntana 'Jay' Dinglasan	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions over 9 month internship. Two manuscripts co-authored.	Research Associate, REVOLUTION Medicines.
2016 - 2017	Gregory Ostolaza	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions over 9 month internship.	Lab Assistant III, UCSF
2017 - 2017	Vanessa Lam	Summer Intern from San Mateo High School Biotechnology Program	Project Mentor	Daily interactions during summer internship.	Undergrad student, Colgate University, Hamilton, NY.
2017 - 2017	Mia Sukumaran	Summer Intern from San Mateo High School Biotechnology Program	Project Mentor	Daily interactions during summer internship.	Undergrad student, Northeastern University, Boston, MA.

Dates	Name	Program or School	Mentor Type	Role	Current Position
2017 - 2018	Sofiane Hamama	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during internship.	Undergrad student, San Jose State University
2017 - 2018	Christopher Nosworthy	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during internship.	Research Associate
2018 - 2019	Sophia Blessinger	Summer Intern from San Mateo High School Biotechnology Program	Project Mentor	Daily interactions during internship.	Senior, San Mateo High School
2018 - 2018	Jackie Rittenhouse	Summer Intern from San Mateo High School Biotechnology Program	Project Mentor	Daily interactions during summer internship.	Senior, San Mateo High School
2018 - 2019	Kenton Chung	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during internship.	Current VRI Intern
2018 - 2019	Renata Gilfanova	CIRM Stem Cell Research Intern, City College of San Francisco	Project Mentor	Daily interactions during internship.	Current VRI Intern

POSTDOCTORAL FELLOWS AND RESIDENTS MENTORED

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
1994 - 1996	George B. Mychaliska, M.D	Clinical Research Fellow at the Fetal Treatment Center, UCSF	Project Mentor	Daily interactions over 1.5 years. Three manuscripts co-authored.	Pediatric Surgeon, University of Michigan
1996 - 1997	Helen T. Housley, M.D	Clinical Research Fellow at the Fetal Treatment Center, UCSF	Project Mentor	Daily interactions over 11 months.	Urologist, Urology Specialists. Henderson, NV

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
1998 - 1998	Laurent M. Humeau, Ph.D.	Post-Doctoral Fellow	Research/Scholarly Mentor	Daily interactions over 8 months. Three manuscripts co-authored.	Senior Vice President, Research and Development at Inovio Pharmaceuticals Inc.
1997 - 1999	Tatsuo Ohkubo, M.D. Ph.D.	Visiting Post-Doctoral Fellow, The Jikei University School of Medicine, Tokyo, Japan	Research/Scholarly Mentor, Project Mentor	Daily interactions over 2 years. Five manuscripts co-authored.	Surgeon, The Jikei University School of Medicine, Tokyo, Japan
1997 - 1999	John B Lopoo Jr., MD	Clinical Research Fellow at the Fetal Treatment Center, UCSF	Project Mentor	Daily interactions over 20 months. One manuscript co-authored.	Pediatric Surgeon, Our Lady of the Lake Regional Medical Center, Baton Rouge General Medical Center, and Surgical Specialty Centre
1997 - 1999	Bettina W. Paek, M.D.	Clinical Research Fellow at the Fetal Treatment Center, UCSF	Co-Mentor/Clinical Mentor	Daily interactions over 2.5 years. One manuscript co-authored.	Obstetrician-Gynecologist, EvergreenHealth Medical Center and Overlake Hospital Medical Center, Seattle, Washington.
2000 - 2002	Jeng-Chang Chen, M.D.	Visiting postdoctoral scholar from Chang-Gung Children's Hospital, Taoyuan, Taiwan.	Research/Scholarly Mentor	Daily interactions over 2 years. Eight manuscripts co-authored.	Surgeon, Chang Gung Memorial Hospital, Taipei, Taiwan

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
2001 - 2003	David L. Suskind, M.D.	Pediatric-Gastroenterology Clinical Research Fellow. Department of Pediatrics, UCSF.	Research/Scholarly Mentor	Daily interactions over 2 years. Five manuscripts co-authored.	Director of Clinical Gastroenterology at Seattle Childrens Hospital and Professor of Pediatrics at the University of Washington School of Medicine
2001 - 2002	Jennifer V. Ratcliffe M.D., Ph.D.	ObGyn Clinical Research Fellow, Department of Obstetrics and Gynecology, UCSF	Co-Mentor/Clinical Mentor	Weekly interactions over 11 months. One manuscript co-authored.	Obstetrician & Gynecologist, Reproductive Endocrinologist, Advanced Fertility Associates Medical Group. Santa Rosa, CA.
2004 - 2006	Dongxiao Feng, Ph.D.	Post-Doctoral Fellow, UCSF Kan Laboratory	Co-Mentor/Clinical Mentor	Daily interactions over 2 years.	Biotechnology Professional
2005 - 2007	Alireza Abdolmohammadi, M.D.	Post-Doctoral Fellow, California Pacific Medical Center Research Institute, Gruenert Laboratory	Co-Mentor/Clinical Mentor	Weekly interactions over 2 years.	Medical Oncologist, Solace Cancer Care. Redding, California
2006 - 2008	Lung-Kuo (Caspar) Tai, Ph.D.	Post-Doctoral Fellow	Research/Scholarly Mentor	Daily interactions over 2 years. One manuscript co-authored	HealthBanks, Los Angeles, CA
2006 - 2008	Marina Fomin, Ph.D.	Post-Doctoral Fellow	Research/Scholarly Mentor	Daily interactions over 9 years in my lab. 17 manuscripts co-authored	Scientist, HingeBio Inc.
2012 - 2014	Alessander de Oliveira Guimarães Sc.D.	Post-Doctoral Fellow	Research/Scholarly Mentor	Daily interactions over 2 years. One manuscript co-authored	Senior Scientific Researcher at Genentech

Dates	Name	Fellow	Mentor Role	Faculty Role	Current Position
2013 - 2016	Elaine Emmerson, Ph.D.	Post-Doctoral Fellow, UCSF Knox Laboratory	Project Mentor, Career Mentor	Intermittent interactions over 2 years. One manuscript co-authored.	Chancellor's Fellow, The MRC Centre for Regenerative Medicine, The University of Edinburgh
2014 - 2016	Padma Priya Togarrati, Ph.D.	Post Doctoral Fellow	Research/Scholarly Mentor	Daily interactions over 4 years in my lab. Three manuscripts co-authored	Scientist, Vitalant Research Institute

FACULTY MENTORING

Dates	Name	Position while Mentored	Mentor Type	Mentoring Role	Current Position
1996 - 1997	François Golfier, M.D.	Medical Doctor and Ph.D. graduate student from Hospices Civils de Lyon, France	Project Mentor	Daily contact for 6 months and intermittent contact thereafter during the preparation of two manuscripts for Ph.D. thesis.	Chef du Service de Chirurgie Gynécologique et Cancérologique - Obstétrique du CHU Lyon Sud; Professor, Université Claude Bernard Lyon 1, France
2013 - 2016	Robson T. Sasaki, D.D.S.	Dental Faculty and Ph.D. student from Department of Morphology and Genetics - Discipline of Descriptive and Topographic Anatomy, Structural and Functional Biology, Federal University of São Paulo, Brazil	Project Mentor	Daily interactions during 7 months spread over 3 visits for work related to Ph.D. thesis. One manuscript co-authored.	Professor de Anatomia na Universidade Federal de Mato Grosso. Cuiabá, Mato Grosso, Brazil

RESEARCH AND CREATIVE ACTIVITIES

RESEARCH AND CREATIVE ACTIVITIES SUMMARY

My research primarily centers on the development of cellular therapies and improved transfusion practices. My group is studying the use of various cell and stem cell populations for application in new cellular therapies. The main focus is on the development of various stem cell populations. Current projects focus on cell therapy for hemophilia A, the development of blood-forming tissues, and the development of mesenchymal stromal cell populations. My laboratory is also involved in a number of projects related to the safety of the blood supply. We are using in vivo models to evaluate pathogen inactivation technologies and to test the efficacy of new blood components. Viruses and parasites pose a threat to the blood supply as evidenced by the recent widespread outbreaks of Chikungunya and Zika viruses. My group is using in vitro and vivo models to help study various pathogenic organisms to better understand the risk that they pose to the blood supply and to help develop vaccine and therapeutic options.

PEER REVIEWED PUBLICATIONS

1. Slørdal L, Muench MO, Warren DJ, Moore MA. Radioprotection by murine and human tumor-necrosis factor: dose-dependent effects on hematopoiesis in the mouse. *Eur J Haematol.* 1989 Nov; 43(5):428-34. PMID: 2612616
2. Smith C, Gasparetto C, Collins N, Gillio A, Muench MO, O'Reilly RJ, Moore MA. Purification and partial characterization of a human hematopoietic precursor population. *Blood.* 1991 May 15; 77(10):2122-8. PMID: 1709369
3. Muench MO, Schneider JG, Moore MA. Interactions among colony-stimulating factors, IL-1 beta, IL-6, and kit-ligand in the regulation of primitive murine hematopoietic cells. *Exp Hematol.* 1992 Mar; 20(3):339-49. PMID: 1373685
4. Muench MO, Moore MA. Accelerated recovery of peripheral blood cell counts in mice transplanted with in vitro cytokine-expanded hematopoietic progenitors. *Exp Hematol.* 1992 Jun; 20(5):611-8. PMID: 1587307
5. Muench MO, Gasparetto C, Moore MA. The in vitro growth of murine high proliferative potential-colony forming cells is not enhanced by growth in a low oxygen atmosphere. *Cytokine.* 1992 Nov; 4(6):488-94. PMID: 1292631
6. Muench MO, Guy Z, Moore MA. Ex vivo differentiation therapy as a method of leukemic cell purging in murine bone marrow expansion cultures. *Cancer Res.* 1992 Dec 1; 52(23):6576-82. PMID: 1384966
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6. Muench MO, Bárcena A. Stem cell transplantation in the fetus. *Cancer Control* 2004; 11:105-118.
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1. Muench MO, Roncarolo MG, Namikawa R. Effects of cytokine administration on human hematopoiesis in SCID-hu mice. In *Human Hematopoiesis in SCID Mice* Eds. M-G. Roncarolo, B. Péault and R. Namikawa. R.G. Landes Co., Austin. 1995; p.53-68.
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5. Muench MO, Firpo MT, Bárcena A. Turning embryonic and fetal stem cells into red cells: Erythropoiesis as a model for the challenges of tissue engineering. In *New Developments in Stem Cell Research*. Ed. Greer, Erik V. Nova Science Publishers, New York. 2006; pp. 31-57.
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SIGNIFICANT PUBLICATIONS

1. Muench MO, Kapidzic M, Gormley M, Gutierrez AG, Ponder KL, Fomin ME, Beyer AI, Stolp H, Qi Z, Fisher SJ, Bárcena A. The human chorion contains definitive hematopoietic stem cells from the fifteenth week of gestation. *Development*. 2017 Apr 15; 144(8):1399-1411. PMID: 28255007. PMCID: PMC5399660

This study is the first to demonstrate that hematopoietic stem cells are present in the human chorion during midgestation. This work builds on our earlier observation that hematopoietic stem cells are observed in the placenta. These studies raise the possibility that hematopoietic stem cells in these extra-embryonic tissues have their own unique origin from extra-embryonic mesoderm. My lab's main contribution to these studies was performing the stem cell assays using immunodeficient mice to measure multilineage reconstitution.

2. Xie F, Ye L, Chang JC, Beyer AI, Wang J, Muench MO, Kan YW. Seamless gene correction of β -thalassemia mutations in patient-specific iPSCs using CRISPR/Cas9 and piggyBac. *Genome Res*. 2014 Sep; 24(9):1526-33. PMID: 25096406. PMCID: PMC4158758

This work was conducted as part of a recent program project grant studying the use of pluripotent stem cells and gene editing technology to correct genetic mutations affecting hematopoietic cells – mainly hemoglobinopathies. My group contributed to this work by providing expertise in the areas of flow cytometry, cell culture and humanized mouse models.

3. Fomin ME, Zhou Y, Beyer AI, Publicover J, Baron JL, Muench MO. Production of factor VIII by human liver sinusoidal endothelial cells transplanted in immunodeficient uPA mice. *PLoS One*. 2013; 8(10):e77255. PMID: 24167566. PMCID: PMC3805584

In this study we demonstrated the efficient transplantation of human liver sinusoidal endothelial cells into immunodeficient mice as a means to treat hemophilia A. Liver sinusoidal endothelial cells produce factor VIII and we demonstrated that the levels of human FVIII in the plasma could approach near normal levels.

4. Ye L, Wang J, Beyer AI, Teque F, Cradick TJ, Qi Z, Chang JC, Bao G, Muench MO, Yu J, Levy JA, Kan YW. Seamless modification of wild-type induced pluripotent stem cells to the natural CCR5 Δ 32 mutation confers resistance to HIV infection. *Proc Natl Acad Sci U S A*. 2014 Jun 9. PMID: 24927590

This work was conducted as part of a recent program project grant studying the use of pluripotent stem cells and gene editing technology to correct genetic mutations affecting hematopoietic cells – mainly hemoglobinopathies. In this study gene editing was used to introduce a desirable gene mutation rather than repair a mutation. My group contributed to this work by providing expertise in the areas of flow cytometry, cell culture and humanized mouse models.

5. Fomin ME, Togarrati PP, Muench MO. Progress and challenges in the development of a cell-based therapy for hemophilia A. *J Thromb Haemost*. 2014 Dec; 12(12):1954-65. PMID: 25297648. PMCID: PMC4388483

This review summarizes our work and the possibilities of using cell therapy to treat hemophilia A, including transplantation of human liver sinusoidal endothelial cells or using pluripotent stem cells and gene editing technology to repair autologous cells to perform cell therapy.

CONFERENCE ABSTRACTS (selected)

1. Petras O, Davern TJ, Muench MO, Han X. AAV6 Pseudotyped double-stranded-AAV vectors allow adenoviral-like transduction and brute-force integration in the growing mouse. *Molecular Therapy* 11, S194 (doi: 10.1016/j.ymthe.2005.07.041), 2005.
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6. Lodes RL, Fomin ME, Muench MO. CD203c is a marker specific for hepatoblasts in the developing human liver. City College of San Francisco's Sixth Biotech Networking Event at the University of California San Francisco Mission Bay, San Francisco, CA. Dec. 17, 2010.
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11. Beyer AI, Guimarães AO, Ye L, Kan YW, Muench MO. Human ES and iPS cell CD133 and CD326 expression dynamics mimic commonly used pluripotency markers upon onset of differentiation despite differences among cell lines. Clinical Translation of Stem Cells Summit, Palm Springs, CA. April 22-23, 2013.
12. Mulvaney U, Wilkinson M, Muench MO. The discovery of CD34+ mast cell precursors in human fetal tissues. City College of San Francisco's Bridge to Bioscience 12th Annual BioSymposium at UCSF Mission Bay Campus, San Francisco, CA. May 24, 2013.
13. Wilkinson M, Guimarães AO, Beyer AI, Muench MO. Maintaining and expanding hematopoietic stem cells with the use of stromal cells. City College of San Francisco's Bridge to Bioscience 11th Annual BioSymposium at UCSF Mission Bay Campus, San Francisco, CA. May 24, 2013.
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29. Hamama SE, Beyer AI, Togarrati PP, Muench MO. Does a CD34- Hematopoietic Stem Cell Population Exist in Human Early Development? City College of San Francisco's Spring BioSymposium. UCSF Mission Bay Campus, San Francisco, CA. May 24, 2018.
30. Nosworthy C, Gutierrez A, Muench MO. VEGF Increases Proliferation of Human Fetal Liver Sinusoidal Endothelial Cells in vitro. City College of San Francisco's Spring BioSymposium. UCSF Mission Bay Campus, San Francisco, CA. May 24, 2018.
31. Simmons G, Van Rompay K, Coffey L, Lu K, Yee J, Bakkour S, Stone M, Williamson P, Muench M, Busch M. Transfusion-transmission of Zika virus in non-human primate and mouse models. 35th International Congress of the International Society of Blood Transfusion, Toronto, Canada. June 2-6, 2018.
32. Hamama SE, Beyer AI, Togarrati PP, Muench MO. Does a CD34- Hematopoietic Stem Cell Population Exist in Human Early Development? CIRM Bridges to Stem Cell Research. Newport Beach, CA. July 13, 2018.
33. Nosworthy C, Gutierrez A, Muench MO. VEGF Increases Proliferation of Human Fetal Liver Sinusoidal Endothelial Cells in vitro. CIRM Bridges to Stem Cell Research. Newport Beach, CA. July 13, 2018.

OTHER CREATIVE ACTIVITIES

1. Prepared an introductory internship manual used by City College of San Francisco Stem Cell Interns to better understand the expectations of a laboratory research internship.