Curriculum Vitae and Bibliography

Valarmathi Mani Thiruvanamalai, M.D., Ph.D.

Office:
Department of Biomedical Engineering
School of Medicine & School of Engineering
UAB|University of Alabama at Birmingham
1670 University Boulevard, Volker Hall G094D
Birmingham, Alabama, AL 35243
Phone: (205) 996-1504
Fax: (205) 934-9101
E-mail: tmv@uab.edu
URL: https://www.uab.edu/engineering/bme/people/faculty/valarmathi-thiruvanamalai

Home:
2550 Genoa Way Apt 302
Birmingham, Alabama, AL 35243
Phone: (803) 629-2888
E-mail: valarmathi64@hotmail.com

Citizenship:

U.S. Citizen (United States of America)

Education:

1998-2004 **Ph.D. – Biotechnology**
All-India Institute of Medical Sciences (AIIMS), New Delhi, INDIA

1991-1994 **M.D. – Pathology**
University of Madras (Postgraduate Institute of Basic Medical Sciences), Madras, INDIA

1984-1989 **M.B.B.S. – Medicine & Surgery**
University of Madras (Kilpauk Medical College), Madras, INDIA

1981-1984 **B.Sc. – Chemistry**
University of Madras (Dowaraka Doss Goverdhan Doss Vaishnav College), Madras, INDIA

Internships and Residencies:

1989-1990 **Compulsory Rotary Residential Internships (CRRI)**
Kilpauk Medical College, University of Madras, Madras, INDIA

Dissertation and Thesis:

1999-2003 "Studies on ***BRCA1*** and ***BRCA2*** Genes Mutations in Breast Cancer Patients." – **Ph.D. (Thesis)**

1991-1994 "**AgNORs** in the Study of Different Types of Acute Leukemias." – **M.D. (Dissertation)**

Postdoctoral Training:

2004-2006 **Embryonic Stem Cells** – **Dr. Ira Pastan**
Laboratory of Molecular Biology (LMB), Centre for Cancer Research (CCR)
National Cancer Institute (NCI), National Institutes of Health (NIH), Bethesda, Maryland, USA

Pedagogy Course:

2016 **Scientists Teaching Science Online Course - Spring 2016 (9 Weeks)**
The New York Academy of Sciences, Science Alliance, New York, New York, USA

Stem Cell Courses and Trainings:

Aug 2015 **LifeLab™ Pluripotent Stem Cell Workshop**
LifeLab™ Stem Cell Research Centers, Life Technologies, Carlsbad, California, USA

Jul 2015 **Regenerative Medicine Essentials Course: The Fundamentals to the Future**
Wake Forest Institute for Regenerative Medicine (WFIRM), Winston-Salem, North Carolina, USA

Oct 2007 **Frontiers in Human Embryonic Stem Cells Advance Training Course - FrHESC**
Marine Biological Laboratory (MBL), Woods Hole, Massachusetts, USA

Jul 2005 **Short-Term Course in Human Embryonic Stem Cell Culture Techniques - hESC**
Johns Hopkins University (JHU), Baltimore, Maryland, USA

Academic Positions and Employment:

2017-Present **Assistant Professor**
Department of Biomedical Sciences, School of Medicine and School of Engineering
University of Alabama at Birmingham (UAB), Birmingham, Alabama, USA

2013-2016 **Assistant Professor**
Department of Comparative Biosciences, College of Veterinary Medicine
Assistant Professor
Department of Medical Molecular and Integrative Physiology, College of Medicine
Affiliate Faculty Member
Beckman Institute for Advanced Science and Technology
University of Illinois at Urbana-Champaign (UIUC), Urbana, Illinois, USA

2008-2013 **Research Assistant Professor**
Department of Cell Biology and Anatomy, School of Medicine
University of South Carolina (USC), Columbia, South Carolina, USA

2007-2008 **Research Associate**
Department of Cell Biology and Anatomy, School of Medicine
University of South Carolina (USC), Columbia, South Carolina, USA

2006- 2007 **Postdoctoral Research Associate**
Department of Chemical Engineering, College of Engineering and Computing
University of South Carolina (USC), Columbia, South Carolina, USA

2004-2006 **Visiting Scientist (Postdoctoral Fellowship Training)** – **Dr. Ira Pastan**
Laboratory of Molecular Biology (LMB), Centre for Cancer Research (CCR)

National Cancer Institute (NCI), National Institutes of Health (NIH), Bethesda, Maryland, USA

1999-2003 **Research Associate**
Department of Biotechnology, All-India Institute of Medical Sciences (AIIMS), New Delhi, INDIA

1997-1998 **Post M.D./M.S. Trainee in Medical Biotechnology**
Department of Biotechnology, All-India Institute of Medical Sciences (AIIMS), New Delhi, INDIA

1995-1997 **Assistant Professor**
Department of Pathology, Sri Ramachandra Medical College and Research Institute (SRMC & RI)
Deemed University, Affiliated to Harvard Medical International, Madras, INDIA

1994-1994 **Immunopathologist**
Department of Biochemistry, Cancer Institute (WIA), Madras, INDIA

Academic Awards and Honors:

2015 **Fellow of the American Heart Association – FAHA (2016)**
Nominated for BCVS Class of 2016, American Heart Association (AHA), Dallas, Texas, USA

2014 **Research Academy Member – (2015)**
College of Agricultural, Consumer and Environmental Sciences
University of Illinois at Urbana-Champaign (UIUC), Urbana, Illinois, USA

2014 **Teacher Ranked as Excellent by Veterinary Medical Students – (2014)**
Veterinary Biosciences, Cardiovascular Physiology Course (VM 603)
University of Illinois at Urbana-Champaign (UIUC), Urbana, Illinois, USA

2013 **Course Waiver – Partial (2 Weeks)**
2013 BioNanotechnology Summer Institute, an NSF-IGERT/NIH/CNTC GEM^4 Collaboration
University of Illinois at Urbana-Champaign (UIUC), Urbana, Illinois, USA

2011-2014 **Scientist Development Grant Award (4 years)**
American Heart Association (AHA), National Center, Dallas, Texas, USA

2010-2011 **Nature Reader Panel – Panelist (1 year)**
Nature Publishing Group, Nature Editorial Team, Macmillan, New York, USA

2007 **Tuition Waiver – FrHESC (1 Week)**
Frontiers in Human Embryonic Stem Cells Advance Training Course
Marine Biological Laboratory (MBL), Woods Hole, Massachusetts, USA

2005 **Course Waiver & Travel Award – hESC (1 Week)**
Short-Term Course in Human Embryonic Stem Cell Culture Techniques
Johns Hopkins University (JHU), Baltimore, Maryland, USA

2004-2006 **Visiting Scientist – Postdoctoral Fellowship (2 years)**
Centre for Cancer Research (CCR), National Cancer Institute (NCI)
National Institutes of Health (NIH), Bethesda, Maryland, USA

1999-2003 **Research Associateship (3 years & 6 months)**
Indian Council of Medical Research (ICMR), Government of India, New Delhi, INDIA

1997-1998 **Post M.D./M.S. Training in Medical Biotechnology Fellowship (1 year)**
Department of Biotechnology (DBT), Government of India, New Delhi, INDIA

1992-1994 **Senior Research Fellowship (2 years)**
Indian Council of Medical Research (ICMR), Government of India, New Delhi, INDIA

Major Committee Assignments – National, Regional, and Others:

(I) American Heart Association (AHA) Committees – BCVS and FGTB Councils:

2019 **2019 Spring Peer Review Committee (Transformational Project Award): Member, Basic Cell Sciences (BCS)**
BCVS, American Heart Association (AHA) Study Section, Association-Wide

2018 **2018 Spring Peer Review Committee (Transformational Project Award): Member, Basic Cell Sciences (BCS)**
BCVS, American Heart Association (AHA) Study Section, Association-Wide

2018 **2018 Spring Peer Review Committee (Fellowship Training Award): Member, Basic Cell-Regenerative Cell Biology (RCB)**
BCVS, American Heart Association (AHA) Study Section, Association-Wide

2017 **2017 Fall Peer Review Committee (Fellowship Training Award): Member, Basic Cell-Regenerative Cell Biology (RCB)**
BCVS, American Heart Association (AHA) Study Section, Association-Wide

2016-Present **Professional/Public Education & Publications Committee: Member**
FGTB/GPM, American Heart Association (AHA)

2016 **2016 Fall Peer Review Committee: Member, Basic Cell-Regenerative Cell Biology (RCB1)**
BCVS, American Heart Association (AHA) Study Section, Association-Wide

2016 **2016 Spring Peer Review Committee: Member, Basic Cell-Regenerative Cell Biology (RCB1)**
BCVS, American Heart Association (AHA) Study Section, Association-Wide

2015 **2015 Fall Peer Review Committee: Member, Basic Cell-Regenerative Cell Biology (RCB1)**
BCVS, American Heart Association (AHA) Study Section, National & Affiliates

2015 **2015 Fall Peer Review Committee: Member, Basic Cell-Regenerative Cell Biology (RBC2)**

BCVS, American Heart Association (AHA) Study Section, National & Affiliates

2015 **2015 Spring Peer Review Committee: Member, Basic Cell-Regenerative Cell Biology (RCB1)**
BCVS, American Heart Association (AHA) Study Section, National & Affiliates

2013 **2013 Spring Peer Review Committee: Member, Basic Cell-Regenerative Cell Biology (RCB2)**
BCVS, American Heart Association (AHA) Study Section, National & Affiliates

2012 **2012 Spring Peer Review Committee: Member, Basic Cell-Regenerative Cell Biology (RCB2)**
BCVS, American Heart Association (AHA) Study Section, National & Affiliates

(II) University Committees:

2018-Present **Member, Strategic Planning and Business Development Committee (SPBD)**
WGs to Target Funding Agencies
College of Engineering, University of Alabama at Birmingham (UAB)

2014-2016 **Member, Courses, Curriculum and Educational Policy, Standing Committee (CCC & EPC)**
College of Veterinary Medicine, University of Illinois at Urbana-Champaign (UIUC)

2014-2016 **Member, Courses and Curriculum Committee (CCC)**
Department of Comparative Biosciences, University of Illinois at Urbana-Champaign (UIUC)

2014-2015 **Member, Faculty Search Committee – Veterinary Cardiologist**
Department of Veterinary Clinical Medicine, University of Illinois at Urbana-Champaign (UIUC)

2014 **Member, Ad Hoc Committee on CB Graduate Program Requirement**
Department of Comparative Biosciences, University of Illinois at Urbana-Champaign (UIUC)

(III) Israel Science Foundation (ISF)

2013 **Ad Hoc Grant Peer Reviewer, Medical Related & F.I.R.S.T. Program - Spring 2013**
Israel Science Foundation (ISF), Jerusalem, ISRAEL

(IV) Miscellaneous Activity and Outreach:

Nov 2017 **Dale J. Benos Medical Student Research Day (MSRD) – Poster Session II Judge**
Hill Student Center, University of Alabama at Birmingham (UAB)

Aug 2018 **Dale J. Benos Medical Student Research Day (MSRD) – Oral Presentations**
Hill Student Center, University of Alabama at Birmingham (UAB)

Professional Affiliations:

2018-Present **Life Member**, Council on Stroke, European Society of Cardiology - **ESC**

2016-Present **Member**, American Society of Gene & Cell Therapy – **ASGCT**

2015-Present **Member**, International Society for Heart Research - **ISHR**

2015-Present **Life Member**, WG on Cellular Biology of the Heart, European Society of Cardiology – **ESC**

2015-Present **Membe**r, Council on Functional Genomics and Translational Biology – **AHA FGTB**

2015-Present **Member**, The New York Academy of Sciences – **NYAS**

2015-Present **Member**, American Association for the Advancement of Science – **AAAS**

2014-Present **Member**, American Chemical Society – **ACS**

2011-Present **Member**, Council on Basic Cardiovascular Sciences – **AHA BCVS**

2007-Present **Member**, American Association for Cancer Research – **AACR**

2007-Present **Member**, American Society for Investigative Pathology – **ASIP**

2007-Present **Member**, International Society for Stem Cell Research – **ISSCR**

2007-Present **Member**, Tissue Engineering and Regenerative Medicine International Society – **TERMIS**

1997-Present **Life Member**, Dermatopathology Society of India - **DSI**

Editorial Positions:

(I) Editorships:

2016-Present **Associate Editor**, International Journal of Clinical Therapeutics and Diagnosis (IJCTD)

2015-Present **Guest Associate Editor**, Frontiers in Cell and Developmental Biology – Frontiers Open Access

2015-Present **Managing Editor**, JBR Journal of Translational Biomarkers and Diagnosis (JBR-TBD)

(II) Editorial Boards:

2016-Present **Editorial Board**, JSM Bone Marrow Research

2015- Present **Editorial Board**, JBR Journal of Translational Diagnostics and Technology (JBR-JTDT)

2015-Present **Editorial Board**, SRL Stem Cell & Research

2015-Present **Editorial Board**, Gene and Cell Therapy

2015-Present **Editorial Board**, Journal of Rheumatology & Muscular System

2015-Present **Editorial Board**, International Journal of Anatomy & Applied Physiology (IJAAP)

2014-Present **Editorial Board**, Studies on Stem Cells Research and Therapy

2012-2015 **Editorial Board**, International Journal of Clinical Therapeutics and Diagnosis (IJCTD)

2011-Present **Editorial Board**, Anatomy & Physiology: Current Research

2010-Present **Editorial Board**, Journal of Microbial & Biochemical Technology

(III) Ad Hoc Reviewing for Journals:

2018-Present International Journal of Human Anatomy

2017-Present Acta Biomaterialia
Circulation Research
Frontiers in Medicine
Frontiers in Cell and Developmental Biology
Stem cells international
Journal of Biomaterials and Tissue Engineering
International Research Journal of Public and Environmental Health
International Journal of Human Anatomy

2016-Present Frontiers in Cellular Neuroscience
American Journal of Biomedical and Life Sciences
Future Science OA
Journal of Biomaterials and Tissue Engineering

2015-Present International Journal of Biological Macromolecules
Microscopy and Microanalysis
Advance in Medicinal Plant Research

2014-Present In Vitro Cellular & Developmental Biology – Animal

2012-Present Current Medicinal Chemistry
Cell Health and Cytoskeleton

2011-Present Macromolecular Bioscience
Medical Engineering & Physics
Recent Patents on Regenerative Medicine
Advanced Biomaterials
Advances in Genomics and Genetics

2010-Present Cell Proliferation
Cell Biology International
International Journal of Cardiology
Journal of Biomedical Materials Research Part A

The Veterinary Journal
Cytotechnology

2009-Present Stem Cell Reviews and Reports

2008-Present Differentiation
Biotechnology Progress
Tissue Engineering Part C

2007-Present Biomaterials
Tissue Engineering Part A

2005 Molecular and Cellular Biochemistry

Teaching Experience:

University of Illinois at Urbana-Champaign (UIUC):

2013-2016 Course VM 603 - Veterinary Cardiovascular Physiology – Spring (**16 Hours**)

2013-2016 Course M1 - Medical Cardiovascular Physiology – Fall (**14 Hours**)

2014-2015 Course CB 520 - Models in Biomedical Research – Journal Club - Spring

2013-2015 Course CB 594 - Models in Biomedical Research - Fall

University of South Carolina (USC):

2011-2012 Course ANAT 741 – Anatomical Methods (Stem Cell Biology) – Lecture and Laboratory – Spring

Mentoring Graduate Students, Research Specialists, Residents & Postdoctoral Fellows:

UIUC - Stem Cell Technology Research Training:

2013-2016 Trained One Graduate Student & One Research Specialist

Graduate Students (1):

Sharada Mahalingam M.S. Student, Department of Comparative Biosciences
College of Veterinary Medicine, University of Illinois at Urbana-Champaign

Visiting Research Specialists (1):

Sulalita Chaki M.S. Student, Department of Comparative Biosciences
College of Veterinary Medicine, University of Illinois at Urbana-Champaign

USC - Stem Cell Technology Research Training:

2006-2012 Trained Two Undergraduates & Four Graduate Students

Undergraduate Students (2):

David Farr M.D. Student, School of Medicine, University of South Carolina

Jacob Riis	M.D. Student, School of Medicine, University of South Carolina

Graduate Students (4):

Weijie Xu	Ph.D. Student, Chemical Engineering, College of Engineering and Computing University of South Carolina
Junya Ma	Ph.D. Student, Chemical Engineering, College of Engineering and Computing University of South Carolina
Gagandeep Kaur	Ph.D. Student, Department of Chemistry and Biochemistry University of South Carolina
Na Li	Ph.D. Student, Department of Cell Biology and Anatomy, School of Medicine University of South Carolina

Direction of Master's Theses and Ph.D. Dissertations:

Ph.D. Dissertations Directed:

2013-2016	**Dissertation Committee Chair**
Student	Jiang Li
Department	Comparative Biosciences (UIUC)
Degree	Ph.D.
Thesis Title	"Development of a 3-D Vascularized Cardiac Muscle Construct for Regenerative Medicine."

Membership on Supervising Committees:

2018-Present	**Dissertation Committee Co-Chair**
Student	Hien Thu Luong
Department	Biomedical Engineering (UAB)
Degree	Ph.D.
Thesis Title	"Development of Functional Thick Vascularized Cardiac Muscle Construct."

2017-Present	**Thesis Committee Member**
Student	John Henderson
Department	Biomedical Engineering (UAB)
Degree	Ph.D.
Thesis Title	"Role of MicroRNAs in Cardiac Remodeling and Function."

2011-2012	**Thesis Committee Member**
Student	Samanta Stinson
Department	Cell Biology and Anatomy (USC)
Degree	M.S.
Thesis Title	"Vasculogenic Scaffolds: How Cell-Cell and Cell-Matrix Interactions Regulate Vascular Differentiation and Morphogenesis."

2010-2011	**Thesis Committee Member**
Student	Thomas W. Lenz
Department	Cell Biology and Anatomy (USC)
Degree	M.S.

Thesis Title "Factors that Influence Monocyte Differentiation and Hematopoietic Stem Cell Recruitment in Atherogenesis."

Teaching Awards and Recognition:

2014 **Teacher Ranked as Excellent by Veterinary Medical Students – (2014)**
Veterinary Biosciences, Cardiovascular Physiology Course (VM 603)
University of Illinois at Urbana-Champaign (UIUC), Urbana, Illinois, USA

Overseas Teaching, Research, Clinical, and Diagnostic Experiences:

1999-2003 Department of Biotechnology, All-India Institute of Medical Sciences (AIIMS), New Delhi, INDIA
(5 years - Medical Biotechnology Practical Course)

1995-1997 Department of Pathology, Sri Ramachandra Medical College and Research Institute (SRMC & RI) Deemed University, Affiliated to Harvard Medical International, Madras, INDIA
(2 years & 9 months – Pathology)

(I) Overseas Formal Teaching:

1. Principles of Pathology and Systemic Pathology - Theory & Practical
2. Anatomic Pathology (Gross Morphology & Microscopy Morphology) – Theory & Practical
3. Cytopathology, Hematology, Clinical Pathology - Theory & Practical
4. Molecular Pathology (Molecular Biology, Immunology, Cell Biology, Human Molecular Genetics, & Biotechnology) - Theory
5. Post-Mortem Techniques and Mortality Conferences
6. Clinico-Pathologic Conferences (Slide Shows & Seminars)
7. Small Group Tutorials

(II) Overseas Courses Taught:

Undergraduates	Postgraduates	Allied Health Sciences
M.B.B.S.	M.D.	B.Sc. (Nursing)
B.D.S.	M.S.	B.Sc. (Physiotherapy)
	M.Biotech	B.Sc. (Speech & Hearing)
		B.Sc. (Lab Technology)

(III) Overseas Research Experience: (Projects Completed)

1999-2003 **Indian Council of Medical Research (ICMR)**, New Delhi, INDIA
"Studies on ***BRCA1*** and ***BRCA2*** Genes Mutations in Breast Cancer Patients."

1997-1998 **Department of Biotechnology (DBT)**, **Ministry of Science & Technology**, New Delhi, INDIA.
"DNA Ploidy and S-Phase Fraction Analysis by Flow Cytometry, Image Cytometry and Immunohistochemistry **(PCNA and HPV)** in Oral Squamous Cell Carcinomas and Benign Hyperplastic Lesions."

1992-1994 **Indian Council of Medical Research (ICMR)**, New Delhi, INDIA.
(Collaboration with **Center for Cellular and Molecular Biology [CCMB]**, Hyderabad, INDIA)
"Flow Cytometry in Archival Tumor Materials."

(IV) Overseas Clinical Experience & Diagnostic Services:

Histopathology	Cytopathology	Hematology
Clinical Pathology	Molecular Pathology	Autopsy

Workshops:

Jun 2016 **ISSCR 2016 Pre Conference Workshop: The Workshop on Clinical Translation**
Co-Organized by International Society for Stem Cell Research (ISSCR) &
American Society of Gene & Cell Therapy (ASGCT), Moscone West, San Francisco, California, USA

Nov 2015 **BioTech 55: Engineering with CRISPR, TALENs, and ZFNs**
Biotechnology Training Course (FAES@NIH), Foundation for Advanced Education in the Sciences
National Institutes of Health, Bethesda, Maryland, USA

Sep 2015 **Pre Conference Workshops: The Tissue Engineering - The Embryology Paradigm –**
A Tool for Developing Successful Therapy
2015 4th TERMIS World Congress, Boston Marriott Copley Place, Boston, Massachusetts, USA

Aug 2015 **Advanced Fluorescence Microscopy Workshop - Fluorescence Foundation**
ISS Focus and Discover, Carl R. Woese Institute for Genomic Biology
University of Illinois at Urbana-Champaign, Illinois, USA

Jul 2015 **Pre Workshop #1: Perfusion Decellularization and Recellularization of Whole Organs &**
Post Workshop #2: Bioprinting Basics for Regenerative Medicine
Richard H. Dean Building, Wake Forest Institute for Regenerative Medicine
Winston-Salem North Carolina, USA

Jul 2013 **2013 BioNanotechnology Summer Institute: Cancer Nanotechnology and Cellular Mechanics**
A GEM^4 / NSF-IGERT / NIH-CNTC Collaboration
University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

Jun 2007 **Basic Confocal Microscopy Workshop**
School of Medicine, University of South Carolina, Columbia, South Carolina, USA

Oct 2004 **Mouse and Rat Workshops: Hands-On Animal Techniques. Office of Animal Care & Use (OACU)**
National Cancer Institute, National Institutes of Health, Bethesda, Maryland, USA

Jul 2004 **Guidelines for Animal Users Course, Office of Animal Care & Use (OACU)**
National Cancer Institutes, National Institutes of Health, Bethesda, Maryland, USA

Jul 2004 **Radiation Safety in the Laboratory Course**
Division of Radiation Safety, National Institutes of Health, Bethesda, Maryland, USA

Nov 1994 **European School of Oncology, Workshop on Testicular Tumors**
Cancer Institute (WIA), Madras, Tamil Nadu, INDIA

Jun 1994 **The Workshop on Hematology**
St. John's Medical College Hospital, Bangalore, Karnataka, INDIA

Jul 1993 **Workshop on Bone Tumors**
Kidwai Memorial Institute of Oncology, Bangalore, Karnataka, INDIA

CME and Other Courses:

Mar 2016 **Peer Review CME Course – Grant: Online Course**
American Heart Association Professional Education Center, Dallas, Texas, USA

Mar 2016 **Peer Review CME Course – Abstract: Online Course**
American Heart Association Professional Education Center, Dallas, Texas, USA

Jun 1996 **XIV C.M.E. and P.G. Courses in Pathology: Live Course**
Department of Pathology, Jawaharlal Nehru Medical College, Belgaum, Karnataka, INDIA

Jun 1994 **XII C.M.E. and P.G. Course in Pathology: Live Course**
Department of Pathology, Jawaharlal Nehru Medical College, Belgaum, Karnataka, INDIA

Jun 1993 **XI C.M.E. and P.G. Courses in Pathology: Live Course**
Department of Pathology, Jawaharlal Nehru Medical College, Belgaum, Karnataka, INDIA

Jun 1992 **X C.M.E. and P.G. Courses in Pathology: Live Course**
Department of Pathology, Jawaharlal Nehru Medical College, Belgaum, Karnataka, INDIA

Conferences, Annual Meetings, and Symposiums:

Nov 2018 **AHA Scientific Sessions 2018**
American Heart Association, McCormick Place, Chicago, Illinois, USA

Jun 2018 **16th Annual Meeting of International Society for Stem Cell Research**
Melbourne Convention & Exhibition Centre, Melbourne, Victoria, Australia

May 2018 **37th Annual Conference of the International Society for Heart Research-North American Section: Cardiovascular Disease in Vulnerable Populations**
Lord Nelson Hotel, Halifax, Nova Scotia, Canada

Dec 2017 **TERMIS-AM Conference 2017, Tissue Engineering and Regenerative Medicine: The Path Forward for Regenerative Medicine – Traversing the Lab to the Patient**
The Westin Charlotte, Charlotte, North Carolina, USA

Jul 2017 **BCVS 2017 Basic Cardiovascular Sciences Scientific Sessions**
American Heart Association, Hilton Portland & Executive Tower, Portland, Oregon, USA

Jun 2017 **15th Annual Meeting of International Society for Stem Cell Research**

Boston Convention and Exhibition Center, Boston, Massachusetts, USA

Dec 2016 **TERMIS-AM Conference 2016, Tissue Engineering and Regenerative Medicine: Personalized and Precise Science, Engineering, and Translation**
Manchester Grand Hyatt San Diego, San Diego, California, USA

Jul 2016 **BCVS 2016 Basic Cardiovascular Sciences Scientific Sessions**
American Heart Association. Hyatt Regency Phoenix, Phoenix, Arizona, USA

Jun 2016 **14th Annual Meeting of International Society for Stem Cell Research**
Moscone West, San Francisco, California, USA

Sep 2015 **2015 4th TERMIS World Congress, Tissue Engineering and Regenerative Medicine International Society**
Boston Marriott Copley Place, Boston, Massachusetts, USA

Jun 2015 **13th Annual Meeting of International Society for Stem Cell Research**
Stockholmsmässan Exhibition and Convention Center, Stockholmsmässan, Stockholm, SWEDEN

Jun 2014 **12th Annual Meeting of International Society for Stem Cell Research**
Vancouver Convention Centre, Vancouver, British Columbia, CANADA

Apr 2014 **3rd College of Veterinary Medicine Research Day**
University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

Jun 2013 **11th Annual Meeting of International Society for Stem Cell Research**
Boston Convention and Exhibition Center, Boston, Massachusetts, USA

Jul 2012 **Microscopy & Microanalysis 2012 Meeting**
Phoenix Convention Center, Phoenix, Arizona, USA

Jun 2012 **10th Annual Congress of International Society for Stem Cell Research**
Pacifico Yokohama, Yokohama, JAPAN

Jun 2011 **9th Annual Congress of International Society for Stem Cell Research**
Metro Toronto Convention Centre, Toronto, ONTARIO CANADA

Nov 2010 **12th Annual Conference of the North Carolina Tissue Engineering and Regenerative Medicine Society**
North Carolina Biotechnology Center in Research Triangle Park, North Carolina, USA

Nov 2010 **2nd Annual Symposium, Carolina Cardiovascular COBRE Conference**
Inn at USC, Columbia, South Carolina, USA

Jun 2010 **8th Annual Congress of International Society for Stem Cell Research**
Moscone West, San Francisco, California, USA

Jun 2007 **The South Carolina Bioengineering Summit (MUSC)**
Medical University of South Carolina, Charleston, South Carolina, USA

Jan 1995 **Indian Academy of Cytologists**
Cancer Institute (WIA), Madras, Tamil Nadu, INDIA

Nov 1994 **International Academy of Pathology, Indian Division**
Madras, Tamil Nadu, INDIA

Nov 1994 **43rd National Conference of Indian Association of Pathologists & Microbiologists**
King George's Medical College, Lucknow, Uttar Pradesh, INDIA

Nov 1993 **42nd Annual Conference of Indian Association of Pathologist & Microbiologists**
S.C.B. Medical College, Cuttack, Orissa, INDIA

Jul 1993 **National Seminar on Molecular Pathology – Emerging Concepts**
Department of Pathology, Dr. A. L. Mudaliar Postgraduate Institute of Basic Medical Sciences
Madras, Tamil Nadu, INDIA

Nov 1992 **International Academy of Pathology, Indian Division**
Armed Forces Medical College, Pune, Maharashtra, INDIA

Nov 1992 **41st Annual Conference of Indian Association of Pathologists & Microbiologists**
Armed Forces Medical College, Pune, Maharashtra, INDIA

Nov 1992 **5th Annual Conference of the Indian Society for Atherosclerosis Research**
S. V. Institute of Medical Sciences, Tirupati, Andhra Pradesh, INDIA

Dec 1991 **40th Annual Conference of Indian Association of Pathologist & Microbiologists**
Madras, Tamil Nadu, INDIA

Dec 1991 **International Academy of Pathology, Indian Division**
Madras, Tamil Nadu, INDIA

Invited Seminars and Lectures:

Apr 2014 **"Development of Three-Dimensional Tissue-Engineered Constructs."**
College of Veterinary Medicine Research Day
University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

Oct 2012 **"Adult Stem Cell Based 3-D Vascularized Cardiac Muscle Construct for Cardiac Regeneration."**
Division of Basic Biomedical Sciences, Sanford School of Medicine

University of South Dakota, Vermillion, South Dakota, USA

Jul 2012 **"Development of 3-D Vascularized Cardiac Muscle Constructs."**
Department of Comparative Biosciences, College of Veterinary Medicine
University of Illinois at Urbana-Champaign, Urbana, Illinois, USA

Presentations at Professional Meetings:

Plenary Presentations:

1. **Valarmathi TM**, Baba Krishnan K, Madhavan M. (1994) Flow cytometry in archival tumor material. 43rd Annual Conference of Indian Association of Pathologist & Microbiologist (I.A.P.M.), King George's Medical College, Lucknow, Uttar Pradesh, INDIA – **Plenary Session – Oral Presentation**

Research Presentations:

1. **Valarmathi MT.** (2018) In Situ De Novo Morphogenesis of Large-Caliber Vessels for Human Heart Regeneration. AHA Scientific Sessions 2018, American Heart Association, McCormick Place, Chicago, Illinois, USA – **Poster Presentation**

2. **Valarmathi MT**, Fuseler JW. (2018) NO modulates postnatal MSC migration. 16th Annual Meeting of International Society for Stem Cell Research, Melbourne Convention and Exhibition Centre, Melbourne, Victoria, Australia – **Poster Presentation**

3. **Valarmathi MT**. (2018) Intrinsic Functional 3D Micro- and Macrovascular Structures for Cardiovascular Tissue Engineering. 37th Annual Conference of the International Society for Heart Research-North American Section - Cardiovascular Disease in Vulnerable Populations, Lord Nelson Hotel, Halifax, Nova Scotia, Canada – **Poster Presentation**

4. **Valarmathi MT**. (2017) Tissue engineering-based 3D modelling of cardiomyogenesis. TERMIS-AM Conference, Tissue Engineering and Regenerative Medicine: The Path Forward for Regenerative Medicine – Traversing the Lab to the Patient, The Westin Charlotte, Charlotte, North Carolina, USA – **Poster Presentation**

5. **Valarmathi MT**. (2017) A 3-D prevascularized cardiac muscle construct for analyzing hMSCs engraftment and differentiation potential *in vitro*. BCVS 2017 Basic Cardiovascular Sciences Scientific Sessions, American Heart Association (AHA). Hilton Portland & Executive Tower, Portland, Oregon, USA – **ePoster/Poster Presentation**

6. **Valarmathi MT**, Fuseler JW. (2017) Nitric oxide modulates postnatal bone marrow-derived mesenchymal stem cell migration. 15th Annual Meeting of International Society for Stem Cell Research (ISSCR), Boston Convention and Exhibition Center, Boston, Massachusetts, USA – **Poster Presentation**

7. **Valarmathi MT**. (2016) Excitation-contraction coupling of adipose-derived MSCs and embryonic cardiac myocytes on a 3D *in situ de novo* vascularized human tissue engineered construct. TERMIS-AM Conference, Tissue Engineering and Regenerative Medicine: Personalized and Precise Science, Engineering, and Translation, Manchester Grand Hyatt San Diego, San Diego, California, USA – **iPoster/Poster Presentation**

8. **Valarmathi MT**, Li J. (2016) Evolving challenges in promoting stem cell based cardiovascular repair and regeneration. BCVS 2016 Basic Cardiovascular Sciences Scientific Sessions, American Heart Association (AHA). Hyatt Regency Phoenix, Phoenix, Arizona, USA – **ePoster/Poster Presentation**

9. **Valarmathi MT**, Li J. (2016) Excitation-contraction coupling of iPSC-derived embryonic cardiac myocytes and adipose-derived MSCs on a 3-D *in situ de novo* vascularized human tissue-engineered construct. 14th Annual Meeting of International Society for Stem Cell Research (ISSCR), Moscone West, San Francisco, California, USA – **Poster Presentation**

10. Li J, **Valarmathi MT**. (2015) Intercalated 3-D micro blood and lymphatic vascular plexuses for organ tissue engineering. 2015 4th TERMIS (Tissue Engineering & Regenerative Medicine International Society) World Congress, Boston Marriott Copley Place, Boston, Massachusetts, USA – **Poster Presentation**

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12. Li J, **Valarmathi MT**. (2014) The influence of embryonic cardiac myocytes on the cardiomyogenic potential of marrow stromal cells in a three-dimensional collagen cell carrier. 12th Annual Meeting of International Society for Stem Cell Research (ISSCR), Vancouver Convention Centre, Vancouver, British Columbia, CANADA – **Poster Presentation**

13. Li J, **Valarmathi MT.** (2014) The influence of embryonic cardiac myocytes on the cardiomyogenic potential of marrow stromal cells in a three-dimensional collagen cell carrier. 3rd College of Veterinary Medicine Research Day, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA – **Poster Presentation**

14. **Valarmathi MT**, Davis JM, Yost MJ, Goodwin RL, Potts JD. (2013) A 3-D cardiac muscle construct for exploring adult marrow stem cell based myocardial regeneration. 2013 BioNanotechnology Summer Institute, Cancer Nanotechnology and Cellular Mechanics, an NSF-IGERT/NIH/CNTC GEM^4, University of Illinois at Urbana-Champaign, Urbana, Illinois, USA – **Poster Presentation**

15. **Valarmathi MT**, Biechler SV. (2013) Development of a 3-D collagen gel vascularized tissue-engineered construct for bone repair and regeneration using embryonic and postnatal progenitors. 11th Annual Meeting of International Society for Stem Cell Research (ISSCR), Boston Convention and Exhibition Center, Boston, Massachusetts, USA – **Poster Presentation**

16. **Valarmathi MT**, Davis JM, Yost MJ, Goodwin RL, Potts JD. (2012) A novel three-dimensional model of postnatal *de novo* vasculogenesis for organ tissue engineering. 10th Annual Congress of International Society for Stem Cell Research (ISSCR), Pacifico Yokohama, Yokohama, JAPAN – **Poster Presentation**

17. **Valarmathi MT**, Fuseler JW, Goodwin RL, Davis JM, Potts JD. (2011) The mechanical coupling of rat adult marrow stromal stem cells during cardiac regeneration explored in a 2-D co-culture model. 9th Annual

Congress of International Society for Stem Cell Research (ISSCR), Metro Toronto Convention Centre, Toronto, ONTARIO CANADA - **Poster Presentation**

18. **Valarmathi MT**, Fuseler JW, Goodwin RL, Davis JM, Yost MJ, Potts JD. (2010) Embryonic cardiac myocytes influence the cardiomyogenic differentiation of bone marrow mesenchymal stem cells. 2nd Annual Symposium, Carolina Cardiovascular COBRE Conference, Inn at USC, Columbia, South Carolina, USA – **Oral Presentation**

19. **Valarmathi MT**, Goodwin RL, Fuseler JW, Davis JM, Yost MJ, Potts JD. (2010) Co-culture model for evaluating the adult bone marrow stromal stem cell based cardiac regeneration. 12th Annual Conference of the North Carolina Tissue Engineering and Regenerative Medicine Society, North Carolina Biotechnology Center in Research Triangle Park, North Carolina, USA – **Poster Presentation**

20. **Valarmathi MT**, Goodwin RL, Fuseler JW, Davis JM, Yost MJ, Potts JD. (2010) Development of a 3-D cardiac muscle construct to explore rat adult marrow stem cell based myocardial regeneration. 8th Annual Congress of International Society for Stem Cell Research (ISSCR), Moscone West, San Francisco, California, USA - **Poster Presentation**

21. **Valarmathi TM**, Shanthi P, Madhavan M. (1993) AgNORs in the study of different types of acute leukemias. 42nd Annual Conference of Indian Association of Pathologist & Microbiologists (I.A.P.M.), S.C.B. Medical College, Cuttack, Orissa, INDIA – **Oral Presentation**

22. **Valarmathi TM**, Baba Krishnan K, Madhavan M. (1992) Enteroendocrine cells in normal endoscopic biopsies of gastro-intestinal tract. 41st Annual Conference of Indian Association of Pathologist & Microbiologists (I.A.P.M.), Armed Forces Medical College (AFMC), Pune, Maharashtra, INDIA – **Oral Presentation**

23. **Valarmathi TM**, Abraham E, Baba Krishnan K. (1991) Alveolar soft part sarcoma with rhabdomyoblastic differentiation. 40th Annual Conference of Indian Association of Pathologist & Microbiologists (I.A.P.M.), Madras, Tamil Nadu, INDIA – **Poster Presentation**

Research Support:

Completed Research Support:

1. **11SDG5280022** **Thiruvanamalai (PI)** **01/01/2011-12/31/2014**
   [American Heart Association (AHA), Scientist Development Grant (SDG)] $308,000
   "Development of a 3-D vascularized cardiac muscle construct." **[No Cost Extension: 2015]**
   The goal of this research proposal is to develop a 3-D model of vascularized cardiac tissue to study the concurrent temporal and spatial regulation of cardiomyogenesis in the context of postnatal *de novo* vasculogenesis during stem cell cardiac regeneration.
   Role: Principal Investigator

2. **Viscofan Bioengineering Project** **Thiruvanamalai (Co-PI)** **03/01/2010-03/15/2012**
   [Collaborative Research Project USC and Viscofan Bioengineering] $195,000
   "The development of 3-D tissue models for toxicity testing – cardiovascular tissue model." -

"Development of cardio-toxicity cell-based assays."
The goals of this research proposal are twofold, first, is to develop a prototype toxicity-testing package consisting of three tissue models. The second, is to prepare and submit at least on research grant proposal as a joint collaboration between USC and Viscofan Bioengineering.
Role: Co-Principal Investigator

3. **NSF/EPSCoR (EPS – 0903795) Roger Markwald (Co-PI) 07/01/2009-03/31/2013**
   [National Science Foundation (NSF)] $50,000
   "The South Carolina project for organ biofabrication."
   The goal of the proposed research plan is to engineer a 3-D vascular tree divided into five thrust areas (I-V). Thrust IV is biofabrication of a branched vascular tree; that is to create linear 3-D, hollow tubular segments representing branches that can be transformed into branched Y or T vascular units.
   Role: Co- Investigator (Role as 'Stem Cell Scientist' for the Project)

Graduate Students Research Support:

4. **Block Grant Support With a Full Tuition Waiver Thiruvanamalai (PI) 08/16/2014-08/15/2015**
   [College of Veterinary Medicine, University of Illinois at Urbana-Champaign (UIUC)] $12,061
   "To support the doctoral student Jiang Li, the best graduate student of the academic year – 2013."

Pending and/or Unfunded Research Support:

5. **NSF-Major Research Instrumentation (NSF-MRI) Takhar (PI) 10/31/2013**
   [National Science Foundation (NSF)]
   "Acquisition of twin-screw extruder for material science research with bio-based products."
   The goal of this proposal is to acquire a pilot scale, research-grade, fully-automated, twin-screw extruder with barrel size of 18 mm to conduct bio-based material science research, aimed at discovery and application in bioengineering, agricultural, environmental and biomedical & health sciences.
   Role: Co-Principal Investigator

6. **Innovator Awards for Early Career Investigator Thiruvanamalai (PI) 01/01/2011-12/30/2015**
   [The New York Stem Cell Foundation (NYSCF)]
   "Development of a 3-D vascularized cardiac muscle construct."
   The goal of this research proposal is to create an *in vitro* vascularized cardiac tissue using autologous and/or allogeneic bone marrow-derived stromal cells (BMSCs) in three-dimensional (3-D) scaffolds.
   Role: Principal Investigator

7. **10SDG3790042 Thiruvanamalai (PI) 07/01/2010-06/30/2014**
   [American Heart Association (AHA), Scientist Development Grant (SDG)]
   "Development of a 3-D vascularized cardiac muscle construct."
   The goal of this research proposal is to develop an appropriate *in vitro* 3-D model of cardiomyogenesis and the development of a 3-D vascularized cardiac muscle construct for tissue engineering purposes, especially using the adult stem cell, BMSCs.
   Role: Principal Investigator

8. **1 R21 HL108067-01 Potts (PI) 01/01/2011-12/30/2012**
   [National Institute of Health of Biomedical Imaging and Bioengineering (NIH/NIBIB)]
   "Reverse engineering of a cell-based biomaterial for cardiac regeneration."
   The goal of this research proposal is to develop *in vitro* a scaffold for cardiac repair that uses a collagen sheet carrier and incorporates adult bone marrow stem cells along with embryonic cardiac myocytes.
   Role: Co-Principal Investigator

9. **R21 NIH, USCeRA # 18020-10-24359 Carver (PI) 12/01/2010-11/30/2012**
   [National Institute of Health (NIH)]
   "Inhibition of alcohol-induced myofibroblast formation by gold nanoparticles."
   The goal of this research proposal is to evaluate the efficacy of gold nanoparticles to modulate alcohol-induced myofibroblasts formation, gene expression and function both *in vitro* and *in vivo* using a novel 3-D scaffold and a mouse model, respectively.
   Role: Co-Principal Investigator

10. **10BGIA3790038 Thiruvanamalai (PI) 07/01/2010-06/30/2012**
    [American Heart Association (AHA), Beginning-Grant-In-Aid (BGIA)]
    "Development of a 3-D vascularized cardiac muscle construct."
    The goal of this research proposal is to develop a 3-D model of vascularized cardiac tissue to study the concurrent temporal and spatial regulation of cardiomyogenesis in the context of postnatal *de novo* vasculogenesis during stem cell cardiac regeneration.
    Role: Principal Investigator

11. **R21 NIH, USCeRA # 18020-10-24080 Goldsmith (PI) 12/01/2010-11/30/2012**
    [National Heart, Blood and Lung Institute (NIH/NHLBI), Nanotechnology (NANO)]
    "Modulating scar stiffness using gold nanorods in a 3-D model of myocardial infarction."
    The goal of this research proposal is to examine whether surface-modified gold nanorods can be used to modulate the composition and mechanical properties of scars resulting from myocardial degeneration. Specifically, to develop an *in vitro* 3-D model of myocardial infarction to understand *in vivo* interactions and/or differentiation of adult bone marrow mesenchymal stem cells into cardiomyocytes.
    Role: Co-Principal Investigator

12. **76497 Thiruvanamalai (PI) 01/01/2010-12/31/2011**
    [Extremity War Trauma Research Foundation, Airlift Foundation, Young Investigator Grant]
    "Bone tissue engineering: Development of a three-dimensional vascularized bone tissue construct."
    The goal of this research proposal is to create an *in vitro* vascularized bone tissue using autologous and/or allogenic bone-marrow-derived stromal cells in a three-dimensional tubular scaffold as replacement tissue for small segmental bone defects in regenerative medicine.
    Role: Principal Investigator

13. **USC SOM Research Development Fund Thiruvanamalai (PI) 06/01/2010-05/30/2011**
    [Innovative and Exploratory Grant Program (IEGP) – University of South Carolina (USC)]
    "Development of a 3-D vascularized cardiac muscle construct."

The goal of this research proposal is that under appropriate physicochemical microenvironmental cues, a pure population of multipotent adult bone marrow stromal cells ($CD90^+$) and embryonic cardiac myocytes can be co-differentiated and matured into functioning vascularized cardiac tissue.
Role: Principal Investigator

14. PIRA 1, USCeRA # 18020-10-23908 Thiruvanamalai (PI) 04/01/2010-06/30/2011
[Promising Investigators Research Award – Track I (PIRA-I), University of South Carolina (USC)]
"PIRA 1 – Development of a 3-D vascularized cardiac muscle construct."
The goal of this research proposal is that under appropriate physicochemical microenvironmental cues, a pure population of multipotent adult bone marrow stromal cells ($CD90^+$) and embryonic cardiac myocytes can be co-differentiated and matured into functioning vascularized cardiac tissue.
Role: Principal Investigator

15. 1 R21 AR057564-01 Potts (PI) 01/01/2009-12/30/2010
[Exploratory/Developmental Research Grant Program (Parent R21) (NIH)]
"A 3-dimensional model of vascularized bone development."
The goal of this research proposal is to determine the optimal physical and chemical environmental conditions that are necessary to generate functioning 3-D vascularized bone-like tissue ex-vivo using the adult tissue stem cell, BMCSs, and to dissect various molecular mechanisms that are underpinning the bone development.
Role: Co-Investigator

Bibliography

Original Reports: (¥ MT Valarmathi is the corresponding author) (* Equal contribution)
PubMed Link: https://www.ncbi.nlm.nih.gov/pubmed/?term=Valarmathi+MT+or+Valarmathi+TM

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2. **Valarmathi MT**, Fuseler JW, Davis JM, Price RL. A novel human tissue-engineered 3-D functional vascularized cardiac muscle construct. ***Front Cell Dev Biol.*** 2017 5:2 1-24. **¥** Online: doi: 10.3389/fcell.2017.00002.
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6. **Valarmathi MT**, Goodwin RL, Fuseler JW, Davis JM, Yost MJ, Potts JD. A 3-D cardiac muscle construct for exploring adult marrow stem cell based myocardial regeneration. ***Biomaterials*** 2010 31:3185-3200. PMCID: PMC2887929 **¥** Online:
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13. Sawhney M, Mathew M, **Valarmathi MT**, Das SN. Age related changes in Fas (CD95) and Fas ligand gene expression and cytokine profiles in healthy Indians. ***Asian Pac J Allergy Immunol***. 2006 24:47-56. Online: http://apjai.digitaljournals.org/index.php/apjai/article/viewFile/173/171

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1. **Valarmathi MT,** Biechler SV. Feline mammary neoplasms: The cancer stem cell hypothesis. ***Vet J*** 2013 196:277-8. **¥**

2. **Valarmathi MT**, Fuseler JW. Mammalian cardiac muscle regeneration: Structural and functional modulation of adult marrow stromal stem cells. ***Anat Physiol*** 2011 1:e102. doi:10.4172/2161-0940.1000e102. **¥** Online:
http://www.omicsonline.org/mammalian-cardiac-muscle-regeneration-structural-and-functional-modulation-of-adult-marrow-stromal-stem-cells-2161-0940.1000e102.pdf

Frontiers Research Topic: (* Peer Reviewed)

1. **Valarmathi MT**, Krishnamurthy P. (2016-2017) Frontiers Research Topic: "Evolving Challenges in Promoting Stem Cell Based Cardiovascular Repair and Regeneration" – for the Specialty Section "S***tem Cell Research***," Participating journals "***Frontiers in Cell and Developmental Biology, Frontiers in Genetics, and Frontiers in Bioengineering and Biotechnology,***" Valarmathi M. Thiruvanamalai (Ed.). * Online:http://journal.frontiersin.org/researchtopic/4328/evolving-challenges-in-promoting-stem-cell-based-cardiovascular-repair-and-regeneration)

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2. **Valarmathi MT.** (2019) **"Stromal cells"** Mani T. Valarmathi (Ed.) ISBN: 978-1-78984-985-1, IntechOpen,**¥** Online: https://www.intechopen.com/books/stromal-cells-structure-function-and-therapeutic-implications

3. **Valarmathi MT**, Fuseler JW. (2012) Development of 3-D collagen gel vascularized tissue-engineered constructs for bone replacement and regeneration using embryonic and postnatal progenitor cells. "***Type I Collagen: Biological Functions, Synthesis and Medicinal Applications***," Maria Eduarda Henriques and Marcio Pinto, (Ed.), ISBN: 978-1-62257-625-8, Nova Publishers, p 97-127. **¥** Online: https://www.novapublishers.com/catalog/product_info.php?products_id=41642

4. **Valarmathi MT,** Biechler SV, Fuseler JW. (2012) 3-D Microvascular tissue constructs for exploring concurrent temporal and spatial regulation of postnatal neovasculogenesis. "***Research Directions in Tumor Angiogenesis,***" Jianyuan Chai, (Ed.), ISBN: 978-953-51-0963-1, InTech, p 261-289. **¥** Online: http://www.intechopen.com/articles/show/title/3-d-microvascular-tissue-constructs-for-exploring-concurrent-temporal-and-spatial-regulation-of-post

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