**Name: Themis R. Kyriakides Ph.D.**

10 Amistad Str. Room 301C, Yale University, New Haven CT 06520

**Email:** themis.kyriakides@yale.edu **Phone:** 203-737-2214

**Education:**

1988 B.S., Microbiology, Washington State University

1993 Ph.D., Microbiology, Washington State University

**Postgraduate Training:**

1994-00 University of Washington Senior Fellow, Department of Biochemistry, Seattle WA. (Mentor: Paul Bornstein, M.D.)

1998-04 University of Washington Research Associate, Department of Bioengineering, Seattle WA

**Career:**

1998-2000 Acting Instructor, University of Washington Medical School

2001-2004 Research Assistant Professor, University of Washington Medical School

2004-2009 Assistant Professor of Pathology, Yale University Medical School

2009-pres. Associate Professor of Pathology and Biomedical Engineering, Yale

 University

2013-pres. Tenured Associate Professor of Pathology and Biomedical Engineering,

 Yale University

# Professional Service

**Society Memberships:**

2000-present American Society for Matrix Biology

2003-present American Society for Investigative Pathology

2004-present North American Vascular Biology Organization

2011-present Biomedical Engineering Society

**Patents:**

Pending:

Methods for reducing the foreign body reaction. US Patent Application No. 11/044,640

Provisional:

1. Programmable inhibition of foreign body giant cell formation and protection of biomaterials by an inhibitor of Rac1 activation.

2. Generation of pro-angiogenic and anti-thrombogenic surfaces.

3. Nanopatterned bulk metallic glass coatings to attenuate the foreign body response.

# Grant History

**Active Grants:**

5R01GM072194 Kyriakides (PI) 02/15/15 – 12/31/19 2.4 months calendar

NIGMS/NIH/DHHS $300,000/yr

*MCP-1 and Attenuation of the Foreign Body Response*

Goals: The implantation of biomaterials into soft tissues leads to the development of the

foreign body response (FBR) that can interfere with the function of the implant and eventually lead to implant failure. The overall objective of this project proposes a novel approach to target the FBR, primarily by the selective targeting of host-derived molecular processes.

Role: PI

1 P01 HL107205-01 (Simons) 02/01/2012 – 01/31/2017 2.4 months calendar

NIH $355,000/yr

Molecular Mechanisms of Arteriogenesis

The focus of the Program is to define novel molecular mechanisms regulating arteriogenesis that may be exploited as potential treatments for vasoocclusive cardiovascular diseases including coronary artery disease, peripheral arterial disease and cerebrovascular disease.

Role: PI

University of Colorado (Yale Subcontract) 4/01/14-3/30/2018 0.6 months calendar

1 R01 $11,353.00

*Attenuating the Foreign Body Response to Cell-laden Hydrogels*

Goals: In this project, Dr. Kyriakides will assist in the design and interpretations of results regarding the inflammatory response to microdialysis probes implanted SC.

Role: Co-PI

**Past Grants**

5R01GM072194-07A1 Kyriakides (PI) 05/01/2010 – 04/30/2014 2.4 months calendar

NIGMS/NIH/DHHS $205,359.86/yr

*MCP-1 and Attenuation of the Foreign Body Response*

Role: PI

1RO1 HL098228-01 Breuer (PI) 07/01/2010 – 6/31/2015 0.6 months calendar

NIH $250,000.00/yr

*Investigating the mechanisms of vascular neotissue formation in tissue engineered vessels*

Role: Co-PI

2 R01 HL083895-06A1 (Niklason) 03/01/2012 – 02/28/2016 0.6 months calendar

NIBIB $414,000.00/yr

*Biological Vascular Grafts*

Goals: The overall goal of this proposal is to develop non-cell-based means of inhibiting coagulation and platelet activation on decellularized engineered arteries, so that functional arterial grafts may be available "off the shelf".

Role: Co-PI

R03 DE019505-01A2 (Yale Subcontract) 03/01/2011 – 2/29/13 0.6 months calendar

University of Colorado, Boulder $27,938.00/yr

*Modulating the Host Response to Tissue Engineering Scaffolds*

Role: Co-PI

Georgia Inst. of Tech. (Kyriakides PI) 11/30/2010 - 5/31/2012 0.4 months calendar

RB420-G1 (DOD) $104,009.00/yr

*Failure Mechanisms of Neural Electrodes*

Agency: NIH

I.D. #: R01 GM 072194-01

Title: “MCP-1 and Attenuation of the Foreign Body Response”

P.I.: Themis R. Kyriakides

Percent Eff: 30%

Direct Costs/yr $186,000

Total Cost: $1,485,000

Project Period: 04/01/05 – 03/31/10

Agency: NIH

I.D. #: 1R21 EB007316-01A2

Title: “Regenerative acellular biomaterials derived from embryonic

 Stem cells.”

P.I.: Todd McDevitt

Percent Eff: 5%

Direct Costs/yr: $6,500

Total Cost: $20,975

Project Period: 09/01/07-08/31/09

**INVITED LECTURES**

**Invitations to National or International Conferences (1999-present):**

**2016 Speaker**, Society of Toxicology Annual Meeting, New Orleans, LA

2015 **Speaker**, Gordon Conference, Biomaterials-Tissue Engineering, Girona , Spain.

2015 **Speaker**, Society for Investigative Dermatology Annual Meeting, Getting Under Your Skin: Collaboration with Biomedical Engineers Atlanta, GA.

2014 **Speaker,** Aegean Conferences, Immune Responses to Biosurfaces: Mechanisms and Therapeutic Interventions. Crete, Greece.

2013 **Speaker,** FEBS Advanced Lecture Course, Matrix Pathobiology, Signaling and Molecular Targets. Kos, Greece.

2013 **Speaker,** FASEB Research Conference “Thrombospondins and other Matricellular Proteins in Tissue Organization and Homeostasis, Saxon River, VT.

2012 **Speaker**, Biomedical Engineering Society Annual Meeting, New Frontiers and

 Special Topics, Atlanta GA.

2012 **Speaker**, Aegean Conferences, 9th International Conference on Innate Immunity, Rhodes, Greece

2012 **Speaker**, Society Biomedical Engineering 3rd International Conference Stem Cell Engineering, Seatlle, WA.

2012 **Speaker**, 16th Annual Workshop, Regenerative Medicine, Hilton Head SC.

2011 **Speaker**, IPRIME Tissues Reactions to Medical Devices Workshop, University of Minnesota, Minneapolis, MN.

2010 **Speaker,** FASEB Research Conference “Thrombospondins and other Matricellular Proteins in Tissue Organization and Homeostasis, Snowmass Village, CO.

2009 **Speaker,** BMES Neural Engineering session “Neural Electrode-Tissue Interface, Pittsburgh, PA.

2009 **Meeting co-organizer and speaker**, NAVBO-sponsored meeting on Vascular Matrix Biology and Bioengineering, Whistler British Columbia.

2008 **Speaker**, MEDI 2008, Hartford, CT

2008 **Speaker**, NSF workshop, Biosensing and Bioactuation, Catania, Italy.

2007 **Speaker**, Gordon Conference, Biomaterials, Holderness, NH

2007 **Speaker**, Gordon Conference, Cell-cell fusion, Plymouth, NH

2007 **Speaker**, EB 07, Experimental Biology, Washington DC

2006 **Speaker**, Yale-Cambridge Collaborative Research Group. Cambridge,

 England

2006 **Plenary Speaker**, TERMIS-EU Annual meeting, Rotterdam, Holland

2006 **Speaker**, NSF workshop on Engineered Biomaterials, Seattle WA

2005 **Speaker**, UWEB symposium on Biocompatibility, Seattle, WA

2004 **Speaker**, Annual Meeting of the American Society for Matrix Biology, San Diego, CA

2004 **Speaker**, Regenerate 2004-Tissue Engineering, Seattle, WA

2004 **Speaker**, Yale-Cambridge Collaborative Research Group. Cambridge,

 England

2002 **Speaker**, Surfaces in Biomaterials Foundation, Scottsdale, AZ

2002 **Speaker**, Annual Meeting of the American Society for Matrix Biology, San Diego, CA

2002 **Speaker**, Annual meeting of the American Society for Hematology,

 Orlando, FL

2001 **Speaker**, Frontiers for Cardiovascular Research, Seattle, WA

2001 **Speaker**, Annual meeting Wound Healing Society, Albuquerque, NM

2000 **Speaker**, Annual meeting Wound Healing Society, Toronto, Canada

2000 **Speaker**, Annual meeting American Society for Hematology, San

 Francisco, CA

2000 **Speaker**, Engineered Biomaterials, Seattle, WA

**Invited Speaker (1999-present):**

2014 Department of Biomedical Engineering, City College of New York

2013 Smilow Center for Translational Research, University of Pennsylvania, PA

2013 Institute of Biomedical Engineering, Natl. Chung Hsing University, Taiwan

2011 School of Engineering, University of New Haven, CT.

2011 Department of Biomedical Engineering, Georgia Tech, Atlanta GA

2009 Department of Bioengineering, University of Washington, Seattle, WA

2008 Department of Bioengineering, Purdue University, West Lafayette, IN

2007 Department of Biomedical Engineering, Georgia Tech, Atlanta GA

2005 Medtronic, Cardiac Pacing Division, Minneapolis, MN

2004 Department of Cell Biology, Cleveland Clinic, Cleveland, OH

2003 Dexcom, Biosensing division, San Diego, CA

2003 Biomaterials Center, University of Connecticut, Farmington, CT

1999 Merck, Bone Biology, West Point, PA

**Journal Service:**

**Editorial Board**: Matrix Biology, Biomedical Materials, Journal of Clinical & Experimental Pathology

**Reviewer**, for EMBO J, ACS Nano, Journal of Clinical Investigation, Blood, Circulation, Journal of Biological Chemistry, American Journal of Pathology, Matrix Biology, Tissue Engineering, Biomaterials; as well as most of the other leading journals in the fields of Vascular Biology and Biomedical Engineering.

**Committee Memberships and Service:**

**National and International**

2015 **Session Chair**, NAVBO annual meeting, Hyannis Port, MA

2014 **Session Chair,** EB/ASIP 2014, Regenerative Medicine, San Diego, CA

2013 **Session Chair** FASEB meeting on Matricellular Proteins in Development Health and Disease, Saxons River, VT.

2012 **Session Chair** Society for Biomaterials Annual Meeting, Immunomodulation and the Foreign Body Reaction, New Orleans, LA.

2011-2014 **Program Committee** American Society for Investigative Pathology

2011 **Co-organizer** of NAVBO meeting on Vascular Matrix Biology and Bioengineering (Cape Cod, MA)

2009 **Co-organizer** of NAVBO meeting on Vascular Matrix Biology and Bioengineering (Whistler, British Columbia, Canada)

**Study Section Service**

2015: NSF CAREER AWARD, Ad Hoc

2015: NCI, Site Visit of the Laboratory of Pathology, Ad Hoc

2013: American Heart Association’s Established Investigator Award Basic Science Peer Review Study, Consultant

2013: NIH Study Section: Special Emphasis Bioengineering Sciences and Technologies (BTSS), Ad Hoc

2013: NIH Study Section: Bioengineering Sciences and Technologies (BTSS), Ad Hoc

2010: NIH Study Section; Musculoskeletal Tissue Engineering (MSTE), Ad Hoc

2010: NIH BCMB-B 02 Scientific Review, Ad Hoc

2009: NIHSpecial Emphasis Panel/Scientific Review Group 2009/10 ZRG1 Ad Hoc

2008: NIH Study Section; Musculoskeletal Tissue Engineering, Ad Hoc

2005: American Heart Association Study Section, Vascular Wall II, Ad Hoc

**Institutional**

Yale University (2004-present)

2015-present Yale School of Medicine Faculty Council (elected)

2014-present Director of Graduate Studies (ExPath graduate program)

2006-2009 Minority Recruitment Officer(Pathology)

2007-present Graduate admissions Committee (Pathology)

2009-present Director of Graduate Admissions (Pathology)

2004-present Organizer: Vascular Biology Seminar Series (125 seminars)

2005-present Organizer: Tissue Engineering Group

# Current Trainees:

Jenna Balestrini PhD, Postdoctoral Fellow (Pathology)

Nicole Calabro, Graduate Student (Pathology)

Nina Kristofik, Graduate Student (Biomedical Engineering)

Jagannath Padmanabhan, Graduate Student (Biomedical Engineering)

Britta Kunkenmoeller, Graduate Student (Pathology)

Aaron Morris, Graduate Student (Biomedical Engineering)

Ayomiposi Loye, Graduate Student (Biomedical Engineering)

Emily Kinser, Graduate Student (Mechanical Engineering)

Ryan Smith, Graduate Student (Biomedical Engineering)

Julie Chang, Undergraduate Student

David Wang, Undergraduate Student

Danielle Stammer, Undergraduate Student

Bettina Clark, Undergraduate Student

Ziqi Wang, Undergraduate Student

**CURRENT GRADUATE THESIS COMMITTEE SERVICE**

Sashka Dimitrievska (PhD, Biomedical Engineering)

Siying Zou (PhD, Cell Biology)

Ramak Khosravi (MD/PhD, Biomedical Engineering)

Jessica Falcone (PhD, Biomedical Engineering, Georgia Tech University)

# Bibliography

**Research articles in refereed journals:**

Graduate Career (Washington State University)

1. C. Patil, K.D. Spence, S. Gurusiddaiah, **T.R. Kyriakides**, S.B. Dandin (1992). Studies on the Kenchu virus disease of the silkworm Bombyx mori L.: Purification and properties of Bgn-KV I virus. ***Sericologia***, 32(1): 37-45.

2. J.K. Bedoyan, C.Patil, **T.R. Kyriakides**, K.D. Spence (1992). Effect of excess dietary glucose on growth and immune response of Manduca sexta**. *J. of Insect Physiol***., 38(7): 525-532.

3. C.Patil, K.D. Spence, **T.R. Kyriakides**, S.B. Dandin (1992). Studies on the Kenchu virus of the silkworm Bombyx mori L: II. Purification and properties of Bng-KV II virus. ***Sericologia***. 32: 369-378.

4. **T.R Kyriakides**, J.K. Bedoyan, C.S. Patil, K.D. Spence (1992). In vivo distribution of immune protein scolexin in bacteria-injected Manduca sexta larvae. ***Tissue and Cell***, 25(3): 423-434.

5. **T.R. Kyriakides**, J.K. Bedoyan, K.D. Spence (1994). Hemoceol distribution of Concanavalin A among the tissues of Manduca sexta following bacterial injection*.* ***Comp. Biochem. and Physiol*.**, 107A: 529-535.

6. S.R. Palli, K. Touhara, J.K. Atkinson, S.C. Trowell, B.C. Bonning, K. Hiruma, W.G. Goodman, **T.R. Kyriakides**, G.D. Prestwich, B.D. Hammock, L.M. Riddiford (1994). A nuclear juvenile hormone binding protein from larvae of Manduca sexta: the putative JH receptor for morphogenesis. ***Proc. Natl. Acad. Sci.***(U.S.A.), 91: 6191-6195.

7. **T.R. Kyriakides**, J.L. McKillup, K.D. Spence (1995). Characterization, expression, and induction of scolexin from Manduca sexta larvae*.* ***Arch. Of Insect Biochem***., 29: 269-280.

Post-doctoral Career (University of Washington)

8. C. Hugo, R. Pichler, K Gordon, **T.R. Kyriakides**, M. Reed, P. Bornstein, W.G. Couser, R. Johnson (1995). Differential expression and regulation of thrombospondin (TSP) in mesangial proliferative nephrititis. ***Kidney Intern***., 48: 1846-1856.

9. **T.R. Kyriakides**, Y.H. Zhu, L.T. Smith, S.D. Bain, Z. Yang, M.T. Lin, K.G. Danielson, R.V. Iozzo, M. LaMarca, C.E. McKinney, E.I. Ginns, P. Bornstein (1998). Mice that lack thrombospondin 2 display connective tissue abnormalities that are associated with disordered collagen fibrillogenesis, an increased vascular density, and a bleeding diathesis.***J Cell Biol***., 140: 419-430.

10. **T.R. Kyriakides**, Y.H. Zhu, Z. Yang, P.Bornstein (1998). The distribution of the extracellular matrix protein, thrombospondin 2, in tissues of embryonic and adult mice.***J. Histochem. Cytochem***. 46:1007-1015.

11. **T.R. Kyriakides**, K. J. Leach, A.S. Hoffman, B.D. Ratner, and P. Bornstein (1999). Mice that lack the angiogenesis inhibitor thrombospondin 2 mount an altered foreign body reaction characterized by increased vascularity. ***Proc. Natl. Acad. Sci*.** (USA), 13: 4449-4454.

12. **T.R. Kyriakides**, J.W.Y. Tam, P. Bornstein (1999) Accelerated wound healing in mice with a disruption of the thrombospondin 2 gene. ***J. Invest. Dermatol.***113:782-787.

13. K.D. Hankenson, S.D. Bain, **T.R. Kyriakides**, E.A. Smith, S.A. Goldstein, P. Bornstein (2000) Increases marrow derived osteoprogenitor cells and endosteal bone formation in mice lacking thrombospondin 2. ***J. Bone Min. Res*.** 15: 851-862.

14. Z. Yang, **T.R. Kyriakides**, P. Bornstein (2000) Matricellular proteins as modulators of cell-matrix interactions: the adhesive defect in thrombospondin 2-null fibroblasts is associated with altered expression of matrix metalloproteinase-2. ***Mol. Cell. Biol.***11: 3353-3364.

Acting Instructor- Research Assistant Professor (University of Washington)

15. **T.R. Kyriakides**, T. Hartzel G. Huyen, P. Bornstein (2001) Modulation of angiogenesis and matrix remodeling by localized, matrix-mediated, antisense gene delivery. ***Mol. Ther.***3: 842-849.

16. T. Hawighorst, P. Velasco, M. Streit, Y-K. Hong, **T.R. Kyriakides**, L.F. Brown, P. Bornstein, M. Detmar (2001) Thrombospondin-2 plays a protective role in multistep carcinogenesis: a novel host anti-tumor defense mechanism. ***EMBO J.*** 20: 2631-2640.

17. N.P. Malek, H. Sundberg, S. McGrew, K. Nakayama, **T.R. Kyriakides**, J.M. Roberts. (2001) A mouse knock-in model exposes sequential proteolytic pathways that regulate p27kip1 in G1 and S phase. ***Nature*** 413: 323-327.

18. **T.R. Kyriakides**, Y-Z. Zhu, G. Huyen, P. Bornstein (2001) Altered matrix remodeling and angiogenesis in sponge granulomas of TSP2-null mice. ***Am. J. Pathol****.* 159: 1255-1262.

19. B. Lange-Asschenfeldt, W. Weninger, P. Velasco, **T.R. Kyriakides**, U.H. vonAndrian, P. Bornstein, M. Detmar (2001). Increased and prolonged inflammation and angiogenesis in delayed-type hypersensitive reactions elicited in the skin of thrombospondin-2 deficient mice. ***Blood*** 99: 538-545.

20. **T.R. Kyriakides**, C.C. Cheung, N. Murthy, P. Bornstein, P.S. Stayton, A.S. Hoffman (2001) pH-sensitive polymers that enhance intracellular drug delivery in vivo**. *J. Contr. Rel.*** 78: 295-303.

21. A. Agah, **T. R. Kyriakides**, P. Bornstein (2002) Lack of TSP1 dictates the course of healing in double TSP1-, TSP2-null mice. ***Am. J. Pathol***161: 831-839.

22. P. Puolakkainen, A.D. Bradshaw, **T. R. Kyriakides**, M Reed, R. Brekken, T. Wright, P. Bornstein, B. Ratner, E.H. Sage (2003) Compromised production of extracellular matrix in mice lacking SPARC leads to reduced foreign body reaction to implanted biomaterials. ***Am. J. Pathol****.* 162:627-635.

23. **T. R. Kyriakides**, T. Papayannopoulou, P. Rojnuckarin, K. Kaushansky, M. A. Reidy, K. Hankenson, P. Bornstein. (2003) Uptake of TSP2 by megakaryocytes: An important determinant of platelet formation and function. ***Blood*** *101*: 3915-23.

24. **T.R. Kyriakides**, M..J. Foster, G.E. Keeney, A. Tsai, G.M Giachelli, I. Clark-Lewis, B.J. Rollins, P. Bornstein. The CC chemokine ligand, CCL2/MCP1, participates in macrophage fusion and foreign body giant cell formation. ***Am. J. Pathol*.** 165:2157-2166*.*

25. Puolakkainen PA, [Bradshaw AD](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Bradshaw+AD%22%5BAuthor%5D), [Brekken RA](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Brekken+RA%22%5BAuthor%5D), [Reed MJ](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Reed+MJ%22%5BAuthor%5D), [**Kyriakides T**](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Kyriakides+T%22%5BAuthor%5D)**R**, [Funk SE](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Funk+SE%22%5BAuthor%5D), [Gooden MD](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Gooden+MD%22%5BAuthor%5D), [Vernon RB](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Vernon+RB%22%5BAuthor%5D), [Wight TN](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Wight+TN%22%5BAuthor%5D), [Bornstein P](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Bornstein+P%22%5BAuthor%5D), [Sage EH](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Search&term=%22Sage+EH%22%5BAuthor%5D). SPARC-thrombospondin-2-double-null mice exhibit enhanced cutaneous wound healing and increased fibrovascular invasion of subcutaneous polyvinyl alcohol sponges. **J Histochem Cytochem**. 53: 571-581, 2005.

26. Agah, A., **T.R. Kyriakides**, N. Letrondo, B. Bjorkblom, P. Bornstein. Proteolysis of cell-surface tissue transglutaminase by MMP2 contributes to the adhesive defect and matrix abnormalities in thrombospondin 2-null fibroblasts and mice. **Am. J. Pathol**. 167: 81-88, 2005.

Assistant-Associate Professor Yale University (7/2004-present)

27. Bryers, J.D., Jarvis R.A., Lebo, J., Prudencio, A., **Kyriakides, T.R.,** Uhrich K. Biodegradation of poly(anhydride-esters) into non-steroidal anti-inflammatory drugs and their effect on Pseudomonas aeruginosa biofilms in vitro and on the foreign-body response in vivo. **Biomaterials** 27:5039-5048, 2006.

28.Jay, S.M., Skokos, E., Laiwalla, F., Krady, M.M., **Kyriakides, T.R.** Foreign Body Giant Cell Formation Is Preceded by Lamellipodia Formation and Can Be Attenuated by Inhibition of Rac1 Activation. **American Journal of Pathology,** 171 (2): 632-40, 2007.

29.Lei, L., Liu, D., Huang, Y., Jovin, I., Shai, S.Y., **Kyriakides, T.R.,** Ross, R.S., Giordano, F.J. Endothelial expression of beta-1 integrin is required from embryonic vascular patterning and postnatal vascular remodeling**. Mol Cell Biol**, 28:794-802, 2008.

30. Roh JD, Nelson GN, Brennan MP, Mirensky TL, Yi T, Hazlett TF, Tellides G, Sinusas AJ, Pober JS, Saltzman WM, **Kyriakides TR**, Breuer CK. Small-diameter biodegradable scaffolds for functional vascular tissue engineering in the mouse model. **Biomaterials**. 29:1454-63, 2008.

31. Krady M.M., Zeng J., Yu J., MacLauchlan S., Skokos E.A., Bornstein P., Sessa W.C., **Kyriakides T.R.** Thrombospondin-2 modulates extracellular matrix remodeling during physiologic angiogenesis. **American Journal of Pathology**, 173 (3): 879-91, 2008

32.Cahn F., **Kyriakides T.R.** Generation of an artificial skin construct containing a non-degradable fiber mesh: a potential transcutaneous interface. **Biomedical Materials** , 3 (3): 034110, 2008.

33. Helming L, Tomasello E, **Kyriakides TR**, Martinez FO, Takai T, Gordon S, Vivier E. Essential role of DAP12 signaling in macrophage programming into a fusion-competent state. **Science Signaling** 1 (43): ra11. 2008

34. Tian W. **Kyriakides T.R.** Thrombospondin 2-null mice display an altered brain foreign body response to polyvinyl alcohol sponge implants. **Biomedical Materials** 4 (1): 015009, 2009.

35. MacLauchlan S., SkokosE.A., Agah A., ZengJ., TianW., DavidsonJ.M., Bornstein P., **KyriakidesT.R.** Enhanced angiogenesis and reduced contraction in thrombospondin 2-null wounds is associated with increased levels of matrix metalloproteinases 2 and 9, and soluble VEGF. **J. Histochem. Cytochem.** 57:301-13 2009.

36. MacLauchlan S.,Skokos E., Meznarich N, Zhu D, Raoof S., Shipley M-J., Senior R.M., Bornstein P.,**Kyriakides T.R.** Macrophage fusion, foreign body giant cell formation, and the foreign body response require matrix metalloproteinase 9. **J. Leukocyte Biology** 28:65-73, 2009.

37. W. Tian, **T.R. Kyriakides** Matrix metalloproteinase-9 deficiency leads to prolonged foreign body response in the brain associated with increased IL1-β levels and leakage of the blood brain barrier. **Matrix Biology** 28:148-59, 2009.

38. Lin S.P., **Kyriakides T.R.**, Chen J.J.. On-line observation of cell growth in a three-dimensional matrix on surface-modified microelectrode arrays. **Biomaterials.** 30:3110-7, 2009.

39. **Kyriakides T.R.**, Wulsin D., Skokos E.A., Fleckman P., Pirrone A., Shipley J.M., Senior R.M., Bornstein P. Mice that lack matrix metalloproteinase-9 display delayed wound healing associated with delayed reepithelization and disordered collagen fibrillogenesis. **Matrix Biol.** 28:65-73, 2009.

40. Steven M. Jay, Eleni A. Skokos, Jianmin Zeng, Kristin Knox, **T.R. Kyriakides**. Engagement of macrophages in phagocytosis does not prevent fusion: examining the frustrated phagocytosis hypothesis. **J. Biom. Mater. Res**. 93:189-99, 2010.

41. Yu J., Fernandez-Henando C., Suarez Y., Schleicher M., Hao Z., Wright P., **Kyriakides T.R.**, Sessa W. Reticulon 4B (Nogo-B) is necessary for macrophage infiltration and inflammatory tissue repair. **P.N.A.S.** 106:17511-6, 2009.

42. Roh J.D., Sawh-Martinez R., Brennan M.P., Devine L., Jay S.M., Yi T., Mirensky T., Udelsman B., Nelson G.N., Hibino N., Shin’oka T., Saltzman W.M., Snyder E., **Kyriakides T.R.**, Pober J.S., Breuer C.K. Tissue-engineered vascular grafts transform into mature blood vessels via an inflammation-mediated process of vascular remodeling. **P.N.A.S.** 107:4669-74, 2010.

43. [Jay SM](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Jay%20SM%22%5BAuthor%5D), [Shepherd BR](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Shepherd%20BR%22%5BAuthor%5D), [Andrejecsk JW](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Andrejecsk%20JW%22%5BAuthor%5D), [**Kyriakides TR**](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Kyriakides%20TR%22%5BAuthor%5D), [Pober JS](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Pober%20JS%22%5BAuthor%5D), [Saltzman WM](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Saltzman%20WM%22%5BAuthor%5D). Dual delivery of VEGF and MCP-1 to support endothelial cell transplantation for therapeutic vascularization. **Biomaterials,** 31:3054-62, 2010.

44. [Zhou J](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Zhou%20J%22%5BAuthor%5D), [Tang PC](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Tang%20PC%22%5BAuthor%5D), [Qin L](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Qin%20L%22%5BAuthor%5D), [Gayed PM](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Gayed%20PM%22%5BAuthor%5D), [Li W](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Li%20W%22%5BAuthor%5D), [Skokos EA](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Skokos%20EA%22%5BAuthor%5D)**, Kyriakides, TR,** [Pober JS](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Pober%20JS%22%5BAuthor%5D), [Tellides G](http://www.ncbi.nlm.nih.gov/pubmed?term=%22Tellides%20G%22%5BAuthor%5D). CXCR3-dependent accumulation and activation of perivascular macrophages is necessary for homeostatic arterial remodeling to hemodynamic stresses**.** [**J Exp Med.**](http://www.ncbi.nlm.nih.gov/pubmed/20733031) 207:1951-66, 2010.

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6. **T.R. Kyriakides.** Molecular events at the tissue-biomaterial interface. In “Host Response to Biomaterials Elsevier” Badylak Ed., (2015).

**Teaching:**

Biomedical Engineering 435: Biomaterial-Tissue Interactions

I created and teach this course for advanced undergraduate and graduate students.

Pathology 100

I lecture in this course for first year Medical Students

**Past Teaching:**

I have taught classes at the undergraduate and graduate level in Biology, Microbiology, Genetics, Biochemistry, and Biomedical Engineering.