

CURRICULUM VITAE

NAME Timothy King Liem, MD FACS

PRESENT POSITION AND ADDRESS

Academic Rank: Associate Professor of Surgery
Adjunct Associate Professor of Radiology

Department/ Division: Division of Vascular Surgery

Professional Address: Division of Vascular Surgery, OP-11
Oregon Health & Science University
3181 SW Sam Jackson Park Road
Portland, Oregon 97239-3098
Office: (503) 494-7593
Fax: (503) 494-4324

EDUCATION

Undergraduate and Graduate: Servite High School, 1982
Anaheim, California

Bachelor of Arts, Bioengineering, 1986
Minors: Organic Chemistry/ Health Care Social Issues
University of California, San Diego

Doctor of Medicine, 1990
University of Southern California

Postgraduate: Internship
General Surgery, 1990-1991
Kaiser Foundation Hospitals
Los Angeles, California

Residency
General Surgery, 1991-1995
Kaiser Foundation Hospitals
Los Angeles, California

Residency
Vascular Surgery, 1995-1997
University of Missouri-Columbia
Columbia, Missouri

Fellowship
Vascular Radiology, 1998-2000
University of Missouri-Columbia
Columbia, Missouri

Certification:

Diplomate, National Board of Medical Examiners
Diplomate, American Board of Surgery
Recertification in General Surgery, 2005
Added Qualifications in General Vascular Surgery
Recertification in Vascular Surgery, 2007
Advanced Trauma Life Support, 1998

Licensure:

Oregon Medical License
Washington Medical License

PROFESSIONAL EXPERIENCE

Academic:

Clinical Instructor, Department of Surgery, 1995-1997
University of Missouri-Columbia

Assistant Professor, Department of Surgery, 1997-2001
University of Missouri-Columbia

Assistant Professor, Department of Radiology, 1998-2001
University of Missouri-Columbia

Clinical Associate Professor, Department of Surgery, 2001-2005
Oregon Health & Science University

Adjunct Associate Professor, Department of Surgery, 2005-2007
Oregon Health & Science University

Vascular Surgery Residency Program Director, 2005-present
Oregon Health & Science University

Adjunct Associate Professor, Department of Radiology, 2006-present
Oregon Health & Science University

Associate Professor, Department of Surgery, 2007-present
Oregon Health & Science University

Administrative:

University of Missouri-Columbia School of Medicine

1. Endovascular Operating Suite Planning Committee 1997-1998
2. Medical Records Clinical Pertinence Subcommittee 1998-2000
3. Vascular Laboratory Operations Planning Committee 1997-2000
4. VA-MU Research Partnership Task Force 1999-2000
5. Department of Surgery Research Committee 1998-2001
6. Department of Surgery Medical Student Education Subcommittee 1999-2001

Legacy Health System

1. Vancouver Medical Campus Design Committee 2003-2005
2. Operating Room Committee 2003-2005

Southwest Washington Medical Center

1. Heart and Vascular Center Development Committee 2002-2004

Oregon Health & Science University

1. Service Excellence Steering Committee 2005-present
2. Residency Program Director, OHSU Vascular Surgery Residency 2005-present
3. DVT Steering Committee, 2006-present
4. Program Organizer, OHSU and Portland VA Medical Center 1st Annual Update: Vascular Disease and Vascular Surgery, Portland, Oregon 2006
5. Department of Surgery Service Excellence Program Coordinator, 2007-present
6. EPIC Computerized Medical Record Integration Coordinator, 2007-present

Other:

Attending Surgeon, Division of Vascular Surgery

Department of Surgery, 1997-2001

University of Missouri-Columbia Hospitals and Clinics

Attending Physician, Division of Interventional Radiology

Department of Radiology, 2000-2001

University of Missouri-Columbia Hospitals and Clinics

Attending Surgeon, Department of Surgery, 1997-2001

Harry S. Truman Memorial VA Hospital, Columbia, Missouri

Consultant Surgeon, 1998-2000

Moberly Regional Medical Center, Moberly, Missouri

Director, Thromboembolic Laboratory, 1998-2001
University of Missouri-Columbia Hospitals and Clinics

Director, Endovascular Surgery program, 1999-2001
University of Missouri-Columbia Hospitals and Clinics

Attending Surgeon, Department of Surgery, 2001-2005
Providence Portland Medical Center, Portland, Oregon

Attending Surgeon, Department of Surgery, 2001-present
Legacy Emanuel Hospital, Portland, Oregon

Attending Surgeon, Department of Surgery, 2003-present
Oregon Health & Science University, Portland, Oregon

Attending Surgeon, Department of Surgery, 2004-present
Portland Veterans Affairs Medical Center, Portland, Oregon

Attending Physician, Dotter Interventional Institute, 2005-present
Oregon Health & Science University, Portland, Oregon

SCHOLARSHIP

Areas of Research/ Scholarly Interest:

HONORS/ AWARDS:

National Aeronautics and Space Administration, award for
publication of research as a NASA TECH BRIEF, 1992
Alpha Omega Alpha, 1997
Life Member of the National Registry of Who's Who, member #131418
Listed in Portland's Best Doctors, Portland Monthly Magazine 2005

EDITORIAL BOARDS:

Invited Reviewer, Journal of Vascular Surgery, 1998-2003

Key Reviewer, Journal of Vascular Surgery, 2003-present
Editorial Board, Annals of Vascular Surgery, 1999-present
Associate Editor, Yearbook of Vascular Surgery, 2004
Reviewer, World Journal of Surgery, 2005-present

MEMBERSHIP: American College of Surgeons, Fellow
Society for Vascular Surgery, member
Western Vascular Society, member
Midwestern Vascular Surgical Society, member
International Society for Thrombosis and Haemostasis, member
Oregon Medical Association, member
University of Missouri Surgical Society

RESEARCH EXPERIENCE:

Jet Propulsion Laboratories, Department of Fluid Dynamics and Reactive Processes,
Research Internship, Pasadena, California, 1989.

University of Missouri School of Medicine, Department of Surgery, Vascular Research
Fellow, Columbia, Missouri, 1995-1996.

RESEARCH GRANTS and PROJECTS:

PRIOR PROJECTS

Liem TK (principle investigator), Research on the physiologic effects of
abdominal insufflation for laparoscopy, Ethicon Endo-Surgery, Incorporated,
1993-1995, \$10,000.

Liem TK (principle investigator), Department of Surgery, \$100,000 for research on the
following topics:

- a. Endogenous tissue factor pathway inhibitor release during heparin administration
- b. The role of shear stress and diabetes mellitus in atherogenesis
- c. Heparin-antibody mediated platelet signal transduction pathways

ACTIVE PROJECTS

Principle Investigator:

- a. Duplex Scan Characteristics of Bypass Grafts to Mesenteric Arteries
- b. Risk Factors and Treatment Patterns for Deep Venous Thrombosis

- c. Site principle investigator for Stenting and Angioplasty with Protection in Patients at High-Risk for Endarterectomy (SAPPHIRE WW). Cordis Corporation

Co-Investigator:

- a. Functional Outcome of Critical Limb Ischemia (NHLBI 5K23 HL 080232)
- b. A Phase 2, Randomized, Double-Blind, Placebo-Controlled, Parallel-Group, Dose-Selection Study of Ad2/Hypoxia Inducible Factor (HIG) 1a/VP16 in Patients with Intermittent Claudication
- c. Functional Outcomes in Chronic Hemodialysis
- d. CLEVER Claudication: Exercise vs Endoluminal Revascularization
- e. Functional Outcomes after Deep Venous Thrombosis of the Lower Extremities
- f. Functional Outcomes in Raynaud's Syndrome
- g. Functional Outcomes and Quality of Life in Patients with Venous Disease

PUBLICATIONS:

Journal Articles – Peer-reviewed:

1. Back LH, Liem TK, Kwack EY, Crawford DW. Flow measurements in a highly curved atherosclerotic coronary artery cast of man. Trans ASME J Biomech Engineering 1992; 114: 232-240.
2. Back LH, Kwack EY, Liem TK, Crawford DW. Experiments on flow in a coronary artery. NASA TECH BRIEF 1993; 17, No 5, Item #70, NPO-18426/ 7961.
3. Liem TK, Applebaum H, Hertzberger B. Hemodynamic and ventilatory effects of abdominal insufflation with CO₂ at various pressures in the young swine. J Pediatr Surg 1994; 29: 966-969.
4. Krishnamoorthy M, Mintz A, Liem TK, Applebaum H. Diagnosis and treatment of respiratory symptoms due to initially unsuspected gastroesophageal reflux. Am Surg 1994; 60: 783-785.

5. Liem TK, Krishnamoorthy M, Applebaum H, Kolata RG, Rudd R, Chen WS. A comparison of the hemodynamic and ventilatory effects of abdominal insufflation with helium and CO₂ in young swine. J Pediatr Surg 1996; 31: 297-300.
6. Ortega AE, Baril N, Lara SR, Liem TK, Anthone G, Beart RW Jr. Does peritoneal mobilization increase laparoscopic acidosis? Dis Colon Rectum 1995; 38: 1296-1300.
7. Liem TK, Teel R, Shukla S, Silver D. The glycoprotein IIb/IIIa antagonist c7E3 inhibits platelet aggregation in the presence of heparin associated antibodies. J Vasc Surg 1997; 25: 124-130.
8. Almeida JI, Coats R, Liem TK, Silver D. Reduced morbidity and mortality of the heparin-induced thrombocytopenia syndrome. J Vasc Surg 1998; 27: 309-316.
9. Almeida JI, Liem TK, Silver D. Heparin-bonded grafts induce platelet aggregation in the presence of heparin-associated antiplatelet antibodies. J Vasc Surg 1998; 27: 896-901.
10. Calaites J, Liem TK, Spadone DP, Nichols WK, Silver D. The role of heparin-associated antiplatelet antibodies in vascular reconstruction failure. J Vasc Surg 1999; 29: 779-786.
11. Liem TK, Vouyouka A, Dixon J, Shukla S, Silver D, Krause G, Sturek MS. Diabetes enhances the uptake of cholesterol in low shear regions. Surgical Forum 1999; Vol 50: 429-432.
12. Vouyouka AG, Pfeiffer BJ, Liem TK, Taylor TA, Mudaliar J, Phillips CL. The role of type I collagen in aortic wall strength with a homotrimeric [α 1(I)]₃ collagen mouse model. J Vasc Surg 2001; 33: 1263-1270.
13. Mudaliar JH, Liem TK, Nichols WK, Spadone DP, Silver D. Lepirudin is a safe and effective anticoagulant for patients with heparin-associated antiplatelet antibodies. J Vasc Surg 2001; 34: 17-20.
14. Miedema BW, Schillie S, Simmons JW, Burgess SV, Liem T, Silver D. Small bowel motility and transit after aortic surgery. J Vasc Surg 2002; 36: 19-24.
15. Musicant SE, Peters D, Landry GJ, Liem TK, Taylor LM, Moneta GL. Potential overuse of prophylactic carotid intervention (PCI). (Submitted to J Vasc Surg)
16. Liem TK, Segall JA, Wei W, Landry GJ, Taylor LM, Moneta GL. Duplex scan characteristics of bypass grafts to mesenteric arteries. J Vasc Surg 2007; 45: 922-928.

17. Landry GL, Liem TK, Mitchell EL, Edwards JM, Moneta GL. Factors affecting symptomatic vs. asymptomatic vein graft stenoses in lower extremity bypass grafts. Arch Surg 2007; 142 (9): 848-854.
18. Hoppe H, Segall JA, Liem TK, Landry GJ, Kaufman JA. Aortic aneurysm sac pressure measurements after endovascular repair using an implantable remote sensor: initial experience and short-term follow up. Eur Radiol 2007; (epub ahead of print).
19. Characterizing resolution of catheter-associated upper extremity deep venous thrombosis (CAUEDVT). Jones MA, Segall JA, Mitchell EL, Landry GJ, Liem TK, Moneta GL. (Submitted to J Vasc Surg)

Journal Articles – Non-peer-reviewed:

1. Liem TK, Silver D. Coumadin: principles of use. In Seminars in Vascular Surgery, Rutherford RB, editor. Vol 9. Philadelphia, Pennsylvania: W.B. Saunders Company, 1996; Vol 9: 354-361.
2. Liem TK, Silver D. Thrombocytopenie a l'heparine. In L'information Cardiologique, Veau P, editor. Saint Denis, France, Publications Medicales, 1997; 21: 408-415.
3. Landry GJ, Liem TK. Endovascular management of Paget-Schroetter syndrome. Vascular 2007; 15: 290-296.
4. Liem TK. Commentary on carotid artery stenting in the SPACE and EVA-3S trials: analysis and update. Perspect Vasc Surg Endovasc Ther 2008; 20.

Book Chapters:

1. Liem TK, Humphrey PW, Silver D. Hemostasis and thrombosis. In Vascular surgery, a comprehensive review, Moore WS, editor. 5th Edition. Philadelphia, Pennsylvania: W.B. Saunders Company 1998.
2. Liem TK, Silver D. Hypercoagulable states and the vascular surgeon. In Current Critical Problems in Vascular Surgery, Veith FJ, editor. Vol 8. St. Louis, Missouri: Quality Medical Publishing.
3. Liem TK, Silver D. Hypercoagulable syndromes: what the interventionalist needs to know. In Vascular Intervention, A Clinical Approach, Perler BA, and Becker GJ, editors. 1st edition. New York, New York: Thieme Medical Publishing, Inc. 1998: 275-280.
4. Liem TK, Silver D. Options for anticoagulation. In Advances in Vascular

Surgery, Whittemore AD, editor. Vol IV. St. Louis, Missouri, Mosby, 1998: 201-221.

5. Liem TK, Silver D. Treatment of venous thromboembolic disease. In Crucial Controversies in Surgery, Volume 3. Schein M, and Wise L, Editors. Lippincott-Raven, New York, New York.
6. Liem TK, Silver D. Role of antithrombotic drugs in maintaining graft patency. In Current Therapy in Vascular Surgery. Ernst CB, and Stanley JC, editors. 4th edition. Mosby-Yearbook, Inc.
7. Liem TK, Silver D. Anticoagulants. In Vascular Surgery: Principles and Practice. Veith FJ, Hobson RW 2nd, and Wilson SE, editors. 3rd edition. Quality Medical Publishing.
8. Liem TK, Silver D. Hemostasis and thrombosis. In Vascular surgery, a comprehensive review, Moore WS, editor. 6th Edition. Philadelphia, Pennsylvania: W.B. Saunders Company 2002.
9. Mitchell EL, Liem TK. Hemostasis and thrombosis. In Vascular and Endovascular Surgery: A Comprehensive Review. Moore WS, and Ahn S, editors. 7th Edition. Philadelphia, Pennsylvania: WB Saunders Company 2005.
10. Liem TK and Moneta GL. Diagnosis and management of acute lower-extremity deep venous thrombosis. In Master of Vascular and Endovascular Surgery. Zelenock GB et al, editors. 1st Edition. Philadelphia, Pennsylvania: Lippincott Williams & Wilkins 2006.
11. Segall JA, Liem TK. Congenital and Acquired Hypercoagulable States. In The Vein Book. Bergan J, editor, 1st Edition. Philadelphia, Pennsylvania: Elsevier Inc.
12. Landry GJ, Liem TK, Moneta GL, Taylor LM. Axillofemoral bypass. In Mastery of Surgery. Fischer JE, editor, 5th Edition. Philadelphia, Pennsylvania: Lippincott Williams & Wilkins 2007.

Electronic Publications

1. Liem TK, Rahhal D. Phlegmasia Alba and Cerulea Dolens. E-medicine 2005. Available at: <http://www.emedicine.com/med/topic2767>. Last updated October 24, 2003.

Abstracts:

1. Liem TK, Applebaum H, Hertzberger B. Hemodynamic and ventilatory effects of abdominal insufflation with CO₂ at various pressures in the young swine. Program of the Annual Meeting of the American Association of Pediatrics, Surgical Section, 1993.

2. Krishnamoorthy M, Mintz A, Liem TK, Applebaum H. Diagnosis and treatment of respiratory symptoms due to initially unsuspected gastroesophageal reflux. Program of the Annual Meeting of the American College of Surgeons, Southern California Chapter, 1993.
3. Liem TK, Krishnamoorthy M, Applebaum H, Kolata RG, Rudd R, Chen WS. A comparison of the hemodynamic and ventilatory effects of abdominal insufflation with helium and CO₂ in young swine. Program of the Annual Meeting of the Pacific Association of Pediatric Surgeons, 1995.
4. Ortega AE, Baril N, Lara SR, Liem TK, Anthone G, Beart RW Jr. Does peritoneal mobilization increase laparoscopic acidosis? Program of the Annual Meeting of the Society of American Gastrointestinal Endoscopic Surgeons, 1994.
5. Liem TK, Teel R, Shukla S, Silver D. The glycoprotein IIb/IIIa antagonist c7E3 inhibits platelet aggregation in the presence of heparin associated antibodies. Program of the Annual Meeting of the Society for Vascular Surgery, 1996.
6. Almeida JI, Coats R, Liem TK, Silver D. Reduced morbidity and mortality of the heparin-induced thrombocytopenia syndrome. Program of the Annual Meeting of the Society for Vascular Surgery, 1997.
7. Almeida JI, Liem TK, Silver D. Heparin-bonded grafts induce platelet aggregation in the presence of heparin-associated antiplatelet antibodies. Program of the Annual Meeting of the Midwestern Vascular Surgical Society, 1997.
8. Liem TK, Almeida JI, Collins JL. Distal vertebral bypass for vertebrobasilar ischemia. Program of the Annual Meeting of the American College of Surgeons, Missouri Chapter, 1998.
9. Shukla S, Lubber K, Liem TK, Silver D. Ethanol alters the release of endothelial cell platelet activating factor. Program of the Sixth International Congress on Platelet-activating Factor and Related Lipid Mediators, 1998.
10. Calaites J, Liem TK, Almeida JI, Silver D. The role of heparin-associated antiplatelet antibodies in vascular reconstruction failure. Program of the Annual Meeting of the Midwestern Vascular Surgical Society, 1998.
11. Spadone DP, Almeida JI, Calaites JG, Liem TK, Nichols WK, Silver D. The intra-operative color doppler imaging after carotid endarterectomy. Program of the Winter Meeting of the Peripheral Vascular Society, 1999.

12. Spadone DP, Liem TK. Case report: surgical management of takayasu's arteritis of the supra-aortic trunks. Program of the Winter Meeting of the Peripheral Vascular Society, 1999.
13. Vouyouka AG, Sturek MS, Liem TK. Diabetes enhances the uptake of cholesterol in low shear regions. Program of the Annual Meeting of the American College of Surgeons, Missouri Chapter, 1999. (Awarded 1st prize Resident Research Competition)
14. Vouyouka AG, Pfeifer B, Taylor T, Phillips C, Liem TK. Osteogenesis imperfecta type III alters the biomechanical properties of the aorta. Program of the Annual Meeting of the American College of Surgeons, Missouri Chapter, 1999.
15. Wakefield MR, Liem TK, Muruve NA. Aortic and vena caval replacement for invasive retroperitoneal teratoma. Program of the Annual Meeting of the South Central Section of the American Urological Association, 1999.
16. Liem TK, Vouyouka AG, Stevens R, Dixon JL, Skala C, Shukla S, Silver D, Sturek M. The role of diabetes and hyperlipidemia in the pattern of cholesterol uptake in low shear regions. *Cardiovasc Surg* 1999; 7 (supplement 1): 91. Program of the 24th World Congress of the International Society for Cardiovascular Surgery, Melbourne, Australia, 1999.
17. Mudaliar J, Liem TK, Nichols WK, Spadone DP, Silver D. Lepirudin is safe and effective for use in patients with heparin associated anti-platelet antibodies. Program of the Annual Meeting of the Midwestern Vascular Surgical Society, 2000.
18. Liem TK, Silver D. Tissue factor pathway inhibitor release in patients who undergo arterial reconstruction. Program of the 9th International Symposium on Thromboembolism, 2002.
19. Musicant SE, Peters D, Landry GJ, Liem TK, Taylor LM, Moneta GL. Potential overuse of prophylactic carotid intervention (PCI). Program of the Annual Meeting of the Western Vascular Society, 2005.
20. Musicant SE, Peters D, Landry GJ, Liem TK, Taylor LM, Moneta GL. Potential overuse of prophylactic carotid intervention (PCI). Program of the Annual Meeting of the Pacific Northwest Vascular Society, 2005. (Awarded 1st prize Resident Research Competition)
21. Liem TK, Segall JA, Wei W, Landry GJ, Taylor LM, Moneta GL. Duplex scan characteristics of bypass grafts to mesenteric arteries. Program of the Annual Meeting of the Western Vascular Society, 2006.

22. Segall JA, Landry GJ, Urankar R, Nicoloff A, Cardneau JD, Musican SE, Liem TK, Moneta GL. Can follow-up of endovascular aneurysm repair (EVAR) patients be minimized? Program of the Annual Meeting of the Western Vascular Society, 2006.
23. Landry G, Liem T, Mitchell E, Edwards J, Moneta G. Factors affecting the symptomatic nature of lower extremity vein graft stenosis. Program of the Annual Meeting of the Pacific Coast Surgical Society, 2007.
24. Jones MA, Segall JA, Mitchell EL, Landry GJ, Liem TK, Moneta GL. Characterizing resolution of catheter-associated upper extremity deep venous thrombosis (CAUEDVT). Program of the Annual Meeting of the Western Vascular Society, 2007.
25. Wheeler NM, Liem TK, Mitchell EL, Landry GJ, Moneta GL. Isolated gastro/soleal deep venous thrombosis is associated with pulmonary embolism and a high incidence of additional ipsilateral and contralateral DVT. Program of the Annual Meeting of the Society for Vascular Surgery, 2008.
26. Mitchell EL, Lee DY, Raman R, Liem TK, Landry GJ, Keller FS, Moneta GL. Duplex criteria for native artery superior mesenteric artery stenosis overestimates stenosis in stented superior mesenteric arteries. Program of the Annual Meeting of the Society for Vascular Surgery, 2008.

SCIENTIFIC/ INVITED PRESENTATIONS:**International/ National:**

1. Hemodynamic and ventilatory effects of abdominal insufflation with CO₂ at various pressures in the young swine. Read before the Surgical Section, American Academy of Pediatrics, Washington, DC, October 1993.
2. A comparison of the hemodynamic and ventilatory effects of abdominal insufflation with helium and CO₂ in young swine. Read before the Pacific Association of Pediatric Surgeons, Huatulco, Mexico, May 1995.
3. The glycoprotein IIb/IIIa antagonist c7E3 inhibits platelet aggregation in the presence of heparin associated antibodies. Read before the Society for Vascular Surgery, Chicago, Illinois 1996.
4. The role of diabetes and hyperlipidemia in the uptake of cholesterol in arterial low shear regions. Read before the World Congress of the International Society for Cardiovascular Surgery, Melbourne, Australia 1999.
5. Diabetes enhances the uptake of cholesterol in low shear regions. Read before the

Surgical Forum at the 85th Annual Clinical Congress of the American College of Surgeons, San Francisco, California 1999.

6. Hematologic problems in vascular surgery: bleeding and thrombosis. Presented at the 18th Annual UCLA Symposium: A Comprehensive Review and Update of What's New in Vascular Surgery, Santa Monica, California 2000.
7. Hematologic problems in vascular surgery: bleeding and thrombosis. Presented at the 19th Annual UCLA Symposium: A Comprehensive Review and Update of What's New in Vascular Surgery, Santa Monica, California 2001.
8. Hematologic problems in vascular surgery: bleeding and thrombosis. Presented at the 20th Annual UCLA Symposium: A Comprehensive Review and Update of What's New in Vascular Surgery, Santa Monica, California 2002.
9. Hematologic problems in vascular surgery: bleeding and thrombosis. Presented at the 21th Annual UCLA Symposium: A Comprehensive Review and Update of What's New in Vascular Surgery, Santa Monica, California 2003.
10. Hypercoagulable Conditions. Presented at the 2nd Meeting of the International Vein Congress. Miami, Florida 2004.
11. Hematologic problems in vascular surgery: bleeding and thrombosis. Presented at the 22nd Annual UCLA Symposium: A Comprehensive Review and Update of What's New in Vascular Surgery, Los Angeles, California 2004.
12. Thrombolysis for Deep Venous Thrombosis. Presented at the 3rd Meeting of the International Vein Congress. Miami, Florida 2005.
13. Hypercoagulable Conditions. Presented at the 3rd Meeting of the International Vein Congress. Miami, Florida 2004.
14. Hematologic problems in vascular surgery: bleeding and thrombosis. Presented at the 23rd Annual UCLA Symposium: A Comprehensive Review and Update of What's New in Vascular Surgery, Los Angeles, California 2005.
15. Liem TK, Segall JA, Wei W, Landry GJ, Taylor LM, Moneta GL. Duplex scan characteristics of bypass grafts to mesenteric arteries. Presented at the 21st Annual Meeting of the Western Vascular Society. San Diego, California 2006.
16. Hematologic problems in vascular surgery: bleeding and thrombosis. Presented at the 24th Annual UCLA Symposium: A Comprehensive Review and Update of What's New in

Vascular and Endovascular Surgery, Los Angeles, California 2006.

17. Deep Venous Thrombosis: The Evolution of Anticoagulation. Department of Surgery Grand Rounds. Harbor-UCLA Medical Center, Torrance, California 2006.
18. Ablation of the Greater Saphenous Vein in the Patient with Previous DVT. Presented at the 5th International Vein Congress. Miami, Florida 2007.
19. Thrombophilia: Who Needs a Workup, Who Needs Anticoagulation, and Who can Get Endovenous Ablation. Presented at the 5th International Vein Congress. Miami, Florida 2007.
20. Hematologic problems in vascular surgery: bleeding and thrombosis. Presented at the 25th Annual UCLA Symposium: A Comprehensive Review and Update of What's New in Vascular and Endovascular Surgery, Los Angeles, California 2007.

Regional/ Local:

1. Heparin-induced thrombocytopenia. Presented at the 1st Annual Kaiser Permanente Surgical Symposium, Pebble Beach, California, May 1996.
2. Distal vertebral artery bypass for vertebrobasilar ischemia. Read before the Missouri Chapter of the American College of Surgeons, Lake of the Ozarks, Missouri 1998.
3. Recent advances in thrombosis and antithrombotic therapy. Keynote address to the Southwest Missouri Chapter of the American College of Surgeons, Joplin, Missouri 2000.
4. Hematologic Problems in Surgery: Bleeding and Thrombosis. Providence St. Vincent Medical Center Surgical Grand Rounds, Portland, Oregon 2001.
5. Hypercoagulable Conditions in Vascular Surgery. Portland Vascular Society, Portland, Oregon 2002.
6. Hematologic Problems in Surgery: Bleeding and Thrombosis. Southwest Medical Center Surgical Grand Rounds, Portland, Oregon 2004.
7. Hemodynamics: Bernoulli's Equation, Poiseuille's Equation, and More. John M. Porter Memorial Lecture Series, Portland, Oregon 2005.
8. Deep venous thrombosis: the evolution of anticoagulation. Oregon Health & Science University Surgery Grand Rounds. Portland, Oregon 2006.

9. Deep vein thrombosis and varicose veins. OHSU and Portland VA Medical Center 1st Annual Update: Vascular Disease and Vascular Surgery. Portland, Oregon 2006.
10. Deep Venous Thrombosis Prophylaxis. Annual Meeting of the Northwest Society for Colorectal Surgery. Whistler, British Columbia, Canada 2007.
11. Deep Venous Thrombosis: Risk Factors and Prophylaxis. St. Charles Medical Center Grand Rounds. Bend, Oregon 2008.

WORKSHOPS:

1. Faculty member. 4th UCLA Symposium: Endovascular Surgery for the Vascular Surgeon, Santa Monica, California 2001.
2. Faculty member. 5th UCLA Symposium: Endovascular Surgery for the Vascular Surgeon, Santa Monica, California 2002.
3. Faculty member. 6th UCLA Symposium: Endovascular Surgery for the Vascular Surgeon, Santa Monica, California 2003.
4. Faculty member. 7th UCLA Symposium: Endovascular Surgery for the Vascular Surgeon, Santa Monica, California 2004.
5. Faculty member. 8th UCLA Symposium: Endovascular Surgery for the Vascular Surgeon, Santa Monica, California 2005.

CURRENT RESEARCH PROJECTS:

1. Duplex surveillance of mesenteric and renal bypass procedures.
2. A comparison of enoxaparin and unfractionated heparin in patients who undergo vascular reconstruction.
3. The role of hemodynamic factors in atherogenesis.
4. The natural history of catheter-associated deep vein thrombosis.
5. Perioperative venous thromboembolism in patients with prior deep vein thrombosis.
6. Endovascular repair of chronic mesenteric occlusive disease: The role of angiographic pressure gradients.

CURRENT CLINICAL PROJECTS:

1. Endovascular repair of abdominal aortic aneurysms.

2. Carotid artery stenting.