



Oliver O. Aalami, MD

Clinical Professor, Surgery - Vascular Surgery

CLINICAL OFFICE (PRIMARY)

- **Vascular Center**

300 Pasteur Dr Rm H3640

MC 5308

Stanford, CA 94305

Tel (650) 725-5227 Fax (650) 498-6044

Bio

CLINICAL FOCUS

- Vascular Surgery
- Endovascular Surgery
- Digital Health
- Health Information Technology
- Precision Medicine

ACADEMIC APPOINTMENTS

- Clinical Professor, Surgery - Vascular Surgery
- Member, Cardiovascular Institute
- Member, Wu Tsai Human Performance Alliance

ADMINISTRATIVE APPOINTMENTS

- Director, Biodesign for Digital Health, Stanford Byers Center for Biodesign, (2018- present)
- Medical Director, Wound Clinic, VAPAHCS, (2014- present)
- Medical Director, Vascular Laboratory, VAPAHCS, (2012- present)

PROFESSIONAL EDUCATION

- Medical Education: Boston University School of Medicine (1998) MA
- Residency: UCSF East Bay Surgery Residency (2005) CA
- Internship: UCSF East Bay Surgery Residency (1999) CA
- Board Certification: Vascular Surgery, American Board of Surgery (2010)
- Board Certification: General Surgery, American Board of Surgery (2007)
- Fellowship: Northwestern University Medical Center (2007) IL

LINKS

- Stanford Spezi Mobile Development Framework: <https://spezi.stanford.edu/>
- My Lab Site: <https://bdh.stanford.edu/>

Research & Scholarship

RESEARCH INTERESTS

- Data Sciences
- Research Methods
- Standards
- Technology and Education

CURRENT RESEARCH AND SCHOLARLY INTERESTS

We launched a national precision medicine PAD trial called, VascTrac (<http://vasctrac.stanford.edu/>). This trial is mobile phone based and leverages Apple's ResearchKit Platform to monitor a patient's activity both pre- and post-intervention. We are validating mobile phone surveillance for PAD patients and are currently enrolling.

CLINICAL TRIALS

- Carotid Revascularization and Medical Management for Asymptomatic Carotid Stenosis Trial, Not Recruiting
- Distributed Registry, Not Recruiting
- Study of the Effectiveness of Telmisartan in Slowing the Progression of Abdominal Aortic Aneurysms, Not Recruiting
- VascTrac Peripheral Arterial Disease (PAD) Study, Not Recruiting

Teaching

COURSES

2024-25

- Biodesign for Digital Health: BIOE 273, MED 273 (Aut)
- Building for Digital Health: CS 342, MED 253 (Win)

2023-24

- Biodesign for Digital Health: BIOE 273, MED 273 (Aut)
- Building for Digital Health: CS 342, MED 253 (Win)

2022-23

- Biodesign for Digital Health: BIOE 273, MED 273 (Aut)
- Building for Digital Health: CS 342, MED 253 (Win)

2021-22

- Biodesign for Digital Health: BIOE 273, MED 273 (Aut)
- Building for Digital Health: CS 342, MED 253 (Win)

Publications

PUBLICATIONS

- **Utility of smart watches for identifying arrhythmias in children.** *Communications medicine*

Zahedivash, A., Chubb, H., Giacone, H., Boramanand, N. K., Dubin, A. M., Trela, A., Lencioni, E., Motonaga, K. S., Goodyer, W., Navarre, B., Ravi, V., Schmiedmayer, P., Bikia, et al
2023; 3 (1): 167

- **CardinalKit: open-source standards-based, interoperable mobile development platform to help translate the promise of digital health.** *JAMIA open*
Aalami, O., Hittle, M., Ravi, V., Griffin, A., Schmiedmayer, P., Shenoy, V., Gutierrez, S., Venook, R.
2023; 6 (3): ooad044
- **Studying the Impact of Augmentations on Medical Confidence Calibration**
Rao, A., Lee, J., Aalami, O., IEEE
IEEE COMPUTER SOC.2023: 2454-2464
- **Preliminary Clinical Validation Results of a Deep Learning Approach for Ankle Brachial Index Prediction in Noncompressible Tibial Vessels**
Fereydooni, A., Rao, A., Chaudhari, A., Battenfield, K., Aalami, O.
MOSBY-ELSEVIER.2022: E85
- **Characterizing patient-reported claudication treatment goals to support patient-centered treatment selection and measurement strategies.** *Journal of vascular surgery*
Powell, C. A., Kim, G. Y., Edwards, S. N., Aalami, O., Treat-Jacobson, D., Byrnes, M. E., Osborne, N. H., Corriere, M. A.
2022
- **Use of an App-Based Exercise Therapy Program Including Cognitive Behavioral Techniques for the Management of Intermittent Claudication.** *Journal of vascular surgery*
Aalami, O. O., Lin, J., Savage, D., Ho, V., Bertges, D., Corriere, M.
2022
- **A National Feasibility, Effectiveness, and Utilization Pilot of a Home-Based, Mobile Phone Administered, Exercise Therapy Program Using Cognitive Behavioral Therapy for Intermittent Claudication**
Aalami, O. O., Lin, J. C., Savage, D. M., Ho, V., Bertges, D., Corriere, M.
MOSBY-ELSEVIER.2022: E76
- **Using a Supervised Learning Algorithm to Predict Postoperative Treatment Failure in Patients with Cardiovascular Disease via Passive Monitoring**
Savage, D. M., Rens, N., Mak, J., Talgo, J., Triggs, D., Nielson-Bowles, H., Aalami, O. O.
MOSBY-ELSEVIER.2022: E337-E338
- **Characterizing Patient-reported Claudication Treatment Goals to Support Patient-centered Treatment Selection and Outcomes Assessment Strategies**
Powell, C. A., Aalami, O. O., Treat-Jacobson, D., Kim, G., Edwards, S. N., Corriere, M.
MOSBY-ELSEVIER.2022: E241-E242
- **A Comparative Utility Score for Digital Health Tools.** *Journal of medical systems*
Burton, J. C., Regala, S., Williams, D., Desai, A., He, H., Aalami, O., Mariano, E. R., Stafford, R. S., Mudumbai, S. C.
2022; 46 (6): 34
- **Increasing the Accessibility of Peripheral Artery Disease Screening with Deep Learning**
Rao, A., Aalami, O., Wu, S., Shabestari, B., Xing, L.
SPRINGER INTERNATIONAL PUBLISHING AG.2022: 1-7
- **Vascular1: Evaluation of a Virtual Reality Ultrasound-Guided Femoral Artery Access Training Module**
Khan, S. I., Shenoy, V., Nguyen, E., Farooqui, N., Caraccio, W., Aalami, O. O.
ELSEVIER SCIENCE INC.2021: S326-S327
- **Vascular1: Development of a Virtual Reality Training Module for Ultrasound Guided Vascular Access**
Khan, S., Shenoy, V., Nguyen, E., Caraccio, W., Farooqui, N., Aalami, O.
MOSBY-ELSEVIER.2021: E418-E419
- **12-Month Follow-up Results of a "Distributed Patient Registry"-Automated Direct Smartphone Connection to a Registry**
Savage, D. M., Rens, N., Mak, J., Talgo, J., Gormley, D., Gutierrez, S., Aalami, O.
MOSBY-ELSEVIER.2021: E177-E178

- **Impact of the Veterans Affairs National Abdominal Aortic Screening Program**
Garcia-Toca, M., Hlatky, M. A., Dalman, R. L., Itoga, N., Kou, A., Mudumbai, S., Lee, J. T., Aalami, O.
MOSBY-ELSEVIER.2021: E48-E49
- **AutoABI: Feasibility of a Smartphone-Enabled ABI and Waveform Phasicity Prediction Model Using Machine Learning for Rapid Point-of-Care Limb Perfusion Assessment**
Rao, A., Battenfield, K. G., Fereydooni, A., Aalami, O.
MOSBY-ELSEVIER.2021: E182
- **Vascular1: Evaluation of a Virtual Reality Ultrasound Guided Femoral Artery Access Training Module**
Shenoy, V., Khan, S. I., Nguyen, E., Caraccio, W., Farooqui, N., Aalami, O.
MOSBY-ELSEVIER.2021: E261
- **Modest Gains After an 8-Week Exercise Program Correlate With Reductions in Non-traditional Markers of Cardiovascular Risk** *FRONTIERS IN CARDIOVASCULAR MEDICINE*
Liang, G., Huang, X., Hirsch, J., Mehmi, S., Fonda, H., Chan, K., Huang, N. F., Aalami, O., Froelicher, V. F., Lee, D. P., Myers, J., Lee, A. S., Nguyen, et al
2021; 8: 669110
- **Reliability and repeatability of a smartphone-based 6-min walk test as a patient-centred outcome measure.** *European heart journal. Digital health*
Mak, J., Rens, N., Savage, D., Nielsen-Bowles, H., Triggs, D., Talgo, J., Gandhi, N., Gutierrez, S., Gutierrez, S., Aalami, O.
2021; 2 (1): 77-87
- **Applications of Mobile Health Technology in Surgical Innovation.** *JAMA surgery*
Aalami, O., Ingraham, A., Arya, S.
2021
- **Activity data from wearables as an indicator of functional capacity in patients with cardiovascular disease.** *PloS one*
Rens, N. n., Gandhi, N. n., Mak, J. n., Paul, J. n., Bent, D. n., Liu, S. n., Savage, D. n., Nielsen-Bowles, H. n., Triggs, D. n., Ata, G. n., Talgo, J. n., Gutierrez, S. n., Aalami, et al
2021; 16 (3): e0247834
- **Waveform Phasicity Prediction from Arterial Sounds through Spectrogram Analysis using Convolutional Neural Networks for Limb Perfusion Assessment**
Rao, A., Battenfield, K., Aalami, O., IEEE
IEEE.2021: 462-466
- **The Value of Visual Attention for COVID-19 Classification in CT Scans**
Rao, A., Park, J., Aalami, O., IEEE Comp Soc
IEEE COMPUTER SOC.2021: 433-438
- **Studying the Effects of Self-Attention for Medical Image Analysis**
Rao, A., Park, J., Woo, S., Lee, J., Aalami, O., IEEE Comp Soc
IEEE COMPUTER SOC.2021: 3409-3418
- **Telemedicine Platforms and Their Use in the Coronavirus Disease-19 Era to Deliver Comprehensive Vascular Care.** *Journal of vascular surgery*
Lin, J. C., Humphries, M. D., Shutze, W. P., Aalami, O. O., Fischer, U. M., Hodgson, K. J.
2020
- **A Distributed Registry: Smartphone-Connected Database Driven by Patient-Reported Outcomes**
Triggs, D., Rens, N., Savage, D. M., Nielsen-Bowles, H., Talgo, J. C., Mak, J. J., Gutierrez, S., Aalami, O.
MOSBY-ELSEVIER.2020: E259
- **National assessment of availability, awareness, and utilization of supervised exercise therapy for peripheral artery disease patients with intermittent claudication.** *Journal of vascular surgery*
Dua, A., Gologorsky, R., Savage, D., Rens, N., Gandhi, N., Brooke, B., Corriere, M., Jackson, E., Aalami, O.
2019
- **Mobile Engagement for Walking in Patients With Claudication**

Aalami, O., Savage, D., Rens, N., Meng, E., Triggs, D.
MOSBY-ELSEVIER.2019: E230

- **National Assessment of Availability, Awareness, and Utilization of Supervised Exercise Therapy for Peripheral Artery Disease in Patients With Intermittent Claudication**
Dua, A., Savage, D., Rens, N., Gandhi, N., Brooke, B. S., Corriere, M., Jackson, E., Aalami, O.
MOSBY-ELSEVIER.2019: E55–E56
- **Clinical validation of smartphone-based activity tracking in peripheral artery disease patients.** *NPJ digital medicine*
Ata, R., Gandhi, N., Rasmussen, H., El-Gabalawy, O., Gutierrez, S., Ahmad, A., Suresh, S., Ravi, R., Rothenberg, K., Aalami, O.
2018; 1: 66
- **Clinical validation of smartphone-based activity tracking in peripheral artery disease patients** *NPJ DIGITAL MEDICINE*
Ata, R., Gandhi, N., Rasmussen, H., El-Gabalawy, O., Gutierrez, S., Ahmad, A., Suresh, S., Ravi, R., Rothenberg, K., Aalami, O.
2018; 1
- **Septic Pulmonary Emboli From Peripheral Suppurative Thrombophlebitis: A Case Report and Literature Review.** *Vascular and endovascular surgery*
Ho, V. T., Rothenberg, K. A., McFarland, G., Tran, K., Aalami, O. O.
2018: 1538574418779469
- **Deepwound: Automated Postoperative Wound Assessment and Surgical Site Surveillance through Convolutional Neural Networks**
Shenoy, V. N., Foster, E., Aalami, L., Majeed, B., Aalami, O., Zheng, H., Callejas, Z., Griol, D., Wang, H., Hu, Schmidt, H., Baumbach, J., Dickerson, J., et al
IEEE.2018: 1017–21
- **Utilizing Smartphone-Based Machine Learning in Medical Monitor Data Collection: Seven Segment Digit Recognition.** *AMIA ... Annual Symposium proceedings. AMIA Symposium*
Shenoy, V. N., Aalami, O. O.
2017; 2017: 1564-1570
- **A Cross-Sectional Study of Prominent US Mobile Health Applications: Evaluating the Current Landscape.** *AMIA ... Annual Symposium proceedings. AMIA Symposium*
Fougerouse, P., Yasini, M., Marchand, G., Aalami, O. O.
2017; 2017: 715–23
- **Use of a proactive duplex ultrasound protocol for hemodialysis access.** *Journal of vascular surgery*
Itoga, N. K., Ullery, B. W., Tran, K., Lee, G. K., Aalami, O. O., Bech, F. R., Zhou, W.
2016; 64 (4): 1042-1049 e1
- **Novel Use of Google Glass for Procedural Wireless Vital Sign Monitoring.** *Surgical innovation*
Liebert, C. A., Zayed, M. A., Aalami, O., Tran, J., Lau, J. N.
2016; 23 (4): 366-373
- **Erratum to: 'TElmisartan in the management of abDominal aortic aneurYsm (TEDY): The study protocol for a randomized controlled trial'.** *Trials*
Morris, D. R., Cunningham, M. A., Ahimastos, A. A., Kingwell, B. A., Pappas, E., Bourke, M., Reid, C. M., Stijnen, T., Dalman, R. L., Aalami, O. O., Lindeman, J. H., Norman, P. E., Walker, et al
2016; 17 (1): 43-?
- **A Prospective Evaluation of Using IVUS during Percutaneous Superficial Femoral Artery Interventions** *ANNALS OF VASCULAR SURGERY*
Hitchner, E., Zayed, M., Varu, V., Lee, G., Aalami, O., Zhou, W.
2015; 29 (1): 28-33
- **TElmisartan in the management of abDominal aortic aneurYsm (TEDY): The study protocol for a randomized controlled trial.** *Trials*
Morris, D. R., Cunningham, M. A., Ahimastos, A. A., Kingwell, B. A., Pappas, E., Bourke, M., Reid, C. M., Stijnen, T., Dalman, R. L., Aalami, O. O., Lindeman, J. H., Norman, P. E., Walker, et al
2015; 16: 274-?
- **Targeting of Sp1 transcription factor: a novel therapeutic approach for Keloids, an in vitro analysis** *EXPERIMENTAL DERMATOLOGY*
Mukhopadhyay, A., Khoo, A., Cheong, H. H., Chan, S. Y., Aalami, O., Lim, I. J., Phan, T. T.

2007; 16 (12): 1023-1031

- **mTOR as a potential therapeutic target for treatment of keloids and excessive scars** *EXPERIMENTAL DERMATOLOGY*
Ong, C. T., Khoo, Y. T., Mukhopadhyay, A., Do, D. V., Lim, I. J., Aalami, O., Phan, T. T.
2007; 16 (5): 394-404
- **Differential gene expression between juvenile and adult dura mater: A window into what genes play a role in the regeneration of membranous bone** *PLASTIC AND RECONSTRUCTIVE SURGERY*
Wan, D. C., Aalami, O. O., Wang, Z., Nacamuli, R. P., Lorget, F., Derynck, R., Longaker, M. T.
2006; 118 (4): 851-861
- **Effects of JAK3 inhibition with CP-690,550 on immune cell populations and their functions in nonhuman primate recipients of kidney allografts** *TRANSPLANTATION*
Paniagua, R., Si, M. S., Flores, M. G., Rousvoal, G., Zhang, S., Aalami, O., Campbell, A., Changelian, P. S., Reitz, B. A., Borie, D. C.
2005; 80 (9): 1283-1292
- **Smad3 signalling plays an important role in keloid pathogenesis via epithelial-mesenchymal interactions** *JOURNAL OF PATHOLOGY*
Phan, T. T., Lim, I. J., Aalami, O., Lorget, F., Khoo, A., Tan, E. K., Mukhopadhyay, A., Longaker, M. T.
2005; 207 (2): 232-242
- **Differential transcriptional expression profiles of juvenile and adult calvarial bone** *PLASTIC AND RECONSTRUCTIVE SURGERY*
Aalami, O. O., Nacamuli, R. P., Salim, A., Fong, K. D., Lenton, K. A., Song, H. M., Fang, T. D., Longaker, M. T.
2005; 115 (7): 1986-1994
- **Bone morphogenetic protein 2 and retinoic acid accelerate in vivo bone formation, osteoclast recruitment, and bone turnover** *TISSUE ENGINEERING*
Cowan, C. M., Aalami, O. O., Shi, Y. Y., Chou, Y. F., Mari, C., Thomas, R., Quarto, N., Nacamuli, R. P., Contag, C. H., Wu, B., Longaker, M. T.
2005; 11 (3-4): 645-658
- **Applications of a mouse model of calvarial healing: Differences in regenerative abilities of juveniles and adults** *PLASTIC AND RECONSTRUCTIVE SURGERY*
Aalami, O. O., Nacamuli, R. P., Lenton, K. A., Cowan, C. M., Fang, T. D., Fong, K. D., Shi, Y. Y., Song, H. M., Sahar, D. E., Longaker, M. T.
2004; 114 (3): 713-720
- **Adipose-derived adult stromal cells heal critical-size mouse calvarial defects** *NATURE BIOTECHNOLOGY*
Cowan, C. M., Shi, Y. Y., Aalami, O. O., Chou, Y. F., Mari, C., Thomas, R., Quarto, N., Contag, C. H., Wu, B., Longaker, M. T.
2004; 22 (5): 560-567
- **Mechanisms of murine cranial suture patency mediated by a dominant negative transforming growth factor-beta receptor adenovirus** *PLASTIC AND RECONSTRUCTIVE SURGERY*
Song, H. J., Fong, D., Nacamuli, R. P., Warren, S. M., Fang, T. D., Mathy, J. A., Cowan, C. M., Aalami, O. O., Longaker, M. T.
2004; 113 (6): 1685-1697
- **In vitro murine posterior frontal suture fate is age-dependent: Implications for cranial suture biology** *PLASTIC AND RECONSTRUCTIVE SURGERY*
Song, H. J., Sahar, D. E., Fong, K. D., Nacamuli, R. P., Fang, T. D., Mathy, J. A., Aalami, O. O., Warren, S. M., Longaker, M. T.
2004; 113 (4): 1192-1204
- **Postoperative rhabdomyolysis following laparoscopic gastric bypass in the morbidly obese** *ARCHIVES OF SURGERY*
Khurana, R. N., Baudendistel, T. E., Morgan, E. F., Rabkin, R. A., Elkin, R. B., Aalami, O. O.
2004; 139 (1): 73-76
- **Physiological features of aging persons** *ARCHIVES OF SURGERY*
Aalami, O. O., Fang, T. D., Song, H. M., Nacamuli, R. P.
2003; 138 (10): 1068-1076
- **Roles of periosteum, dura, and adjacent bone on healing of cranial osteonecrosis - Discussion** *JOURNAL OF CRANIOFACIAL SURGERY*
Aalami, O. O., Nacamuli, R. P., Longaker, M. T.
2003; 14 (3): 380-382
- **A mouse model of mandibular distraction osteogenesis** *10th International Congress of the International-Society-of-Craniofacial-Surgery*

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- Fang, T. D., Nacamuli, R. P., Song, H. M., Thomas, R., Fong, K. D., Aalami, O. O., Longaker, M. T.
MEDIMOND PUBLISHING CO.2003: 397–398
- **Microarray analysis of regional patterning of suture-specific dura mater** *10th International Congress of the International-Society-of-Craniofacial-Surgery*
Nacamuli, R. P., Song, H. M., Fang, T. D., Fong, K. D., Aalami, O. O., Salim, A., Sahar, D. E., Chi, J. T., Longaker, M. T.
MEDIMOND PUBLISHING CO.2003: 459–460
 - **Cranial suture fate in an in vitro organ culture model** *10th International Congress of the International-Society-of-Craniofacial-Surgery*
Sahar, D. E., Song, H. M., Fong, K. D., Nacamuli, R. P., Warren, S. M., Mathy, J. A., Fang, T. D., Aalami, O., Longaker, M. T.
MEDIMOND PUBLISHING CO.2003: 473–475
 - **Establishment of a young-versus-adult mouse calvarial defect model** *10th International Congress of the International-Society-of-Craniofacial-Surgery*
Aalami, O. O., Nacamuli, R. P., Fong, K. D., Fang, T. D., Song, H. M., Sahar, D. E., Lenton, K. A., Cowan, C. M., Longaker, M. T.
MEDIMOND PUBLISHING CO.2003: 375–377
 - **Analysis of de novo bone formation by dura-derived TGF-beta signaling** *10th International Congress of the International-Society-of-Craniofacial-Surgery*
Song, H. M., Nacamuli, R. P., Fong, K. D., Fang, T. D., Aalami, O. A., Warren, S. M., Longaker, M. T.
MEDIMOND PUBLISHING CO.2003: 489–491
 - **The osteogenic antagonist BMP-3 is down-regulated during programmed suture fusion in the rat** *10th International Congress of the International-Society-of-Craniofacial-Surgery*
Fong, K. D., Nacamuli, R. P., Lenton, K., Fang, T. D., Song, H. M., Salim, A., Shi, Y. Y., Aalami, O. O., Longaker, M. T.
MEDIMOND PUBLISHING CO.2003: 399–401
 - **Microarray analysis comparing juvenile and adult dura mater** *10th International Congress of the International-Society-of-Craniofacial-Surgery*
Aalami, O. O., Fong, K. D., Nacamult, R. P., Fang, T. D., Song, H. M., Sahar, D. E., Lenton, K. A., Cowan, C. M., Chi, J. T., Longaker, M. T.
MEDIMOND PUBLISHING CO.2003: 373–374