Joseph P. Havlicek

The University of Oklahoma, School of Electrical & Computer Engineering
110 W. Boyd, DEH 150, Norman, OK 73019
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http://www.ou.edu/content/coe/ece/faculty_directory/dr_havlicek.html

Title: Gerald Tuma Presidential Professor & Williams Companies Foundation Presidential Professor
Unit: School of Electrical and Computer Engineering
Director: OU Center for Intelligent Transportation Systems
Member: OU Institute for Biomedical Engineering, Science, and Technology

▶ **Citizenship:** USA

▶ **Education:**

PhD EE The University of Texas at Austin, 1996.
Dissertation: "AM-FM Image Models."
Advisor: Prof. Alan C. Bovik.

MSEE Virginia Tech, 1988.
Thesis: "Median Filtering for Target Detection in an Airborne Threat Warning System."
Advisor: Prof. John C. McKeeman.

BSEE Virginia Tech, 1986. Minors in Mathematics, Computer Science.

▶ **Professional Experience:**

1/97 - present: School of Electrical & Computer Engineering, Univ. OK, Norman, OK

Gerald Tuma Presidential Professor:	4/17 - present
Williams Companies Foundation Presidential Professor:	4/09 - present
Professor:	7/07 - present
Associate Professor:	7/02 - 6/07
Assistant Professor:	1/97 - 6/02

Held tenure track position requiring research, teaching, and service, as well as establishment of strong, externally funded research programs in signal, image, and video processing and intelligent transportation systems. Director and co-founder, OU Center for Intelligent Transportation Systems. Member, OU Institute for Biomedical Engineering, Science, and Technology. Total external grants and contracts exceeding $27M.

6/87 - 1/97: U.S. Naval Research Laboratory, Washington, DC
Electrical Engineer
(Was affiliated with SFA, Inc., Landover MD, from 6/87-8/89)
(Was on *leave without pay* during semesters spent at UT Austin)
Engineering member of the team that developed the Navy's first two-color infrared missile warning receiver (Fly's Eye). The production version of this system protected Navy and Marine helicopters from surface to air missile attacks in Afghanistan and Iraq. Received the Department of the Navy Award of Merit for Group Achievement for this work. Designed and analyzed new algorithms for infrared target detection, tracking, and identification. Designed digital architectures for real-time implementation. Conducted experimental work on airborne and ground-based platforms. Extensive field experience at China Lake Naval Weapons Center, Miramar Naval Air Station, Patuxent River Naval Air Station, and Sandia National Laboratories.

AMAZON-1004
7,532,808

6/93 - 12/96: Dept. Electrical & Computer Engineering, University of Texas, Austin, TX
Assistant Director, Laboratory for Vision Systems
Senior student administrator of laboratory whose members include approximately 12 research-supported graduate students. Authored and integrated grant proposals. Briefed sponsors. Authored contract reports. Reviewed papers for journals and conferences. Advised graduate students. Supervised honors undergraduate projects. Substitute lecturer for both graduate and undergraduate courses in the systems area.

1/93 - 12/93: Dept. E51, Still Video Products, IBM Corporation, Austin, TX
Software Developer
(on-sight contractor affiliated with Ralph Kirkley Associates, Austin, TX)
Developed C code for IBM PS/2 computers under OS/2 and MS Windows to port an implementation of the JPEG image compression/decompression standard from the IBM M/ACPA card to the IBM AudioVation card.

8/87 - 8/88: Bradley Department of Electrical Engineering, VPI & SU, Blacksburg, VA
Graduate Research Assistant
Under contract with NRL, led 9-man team in chip-level simulation of a real-time nonlinear image filter. Under contract with IBM, investigated the feasibility and performance of networks of LEO store-and-forward communication satellites.

12/84 - 5/87: Management Systems Laboratories, Blacksburg, VA
Software Engineer
Under contract with DOE, designed and implemented management decision support software for nuclear materials management on IBM mainframe computers.

► **Expert Testimony History:**

- In the matter of *Unified Patents, LLC Request for Reexamination Against U.S. Patent No. 7,739,714 assigned to Distributed Media Solutions LLC (an affiliate of IP Investments)*. Provided one *Ex Parte* Reexam declaration. Retained by Greenberg Traurig LLP on behalf of Unified Patents LLC, San Jose, CA, 10/23 - 12/23.
- In the matter of *State of Texas v. Meta Platforms, Inc.*, Cause No. 22-0121. Provided technical consulting to support Meta's defense related to facial recognition software. Retained by Gibson, Dunn & Crutcher LLP on behalf of Meta Platforms, Inc., Menlo Park, CA, 6/23 - present.
- In the matter of *Certain Video Processing Devices and Products Containing Same*, USITC Investigation No. 337-TA-1323. Provided one expert report, testified at deposition. Retained by Fish & Richardson P.C. on behalf of ASUSTek Computer Inc., Taipei, Taiwan, and ASUS Computer International, Fremont, CA, 2/23 - 5/23.
- In the matter of *Unified Patents, LLC Request for Reexamination Against U.S. Patent No. 9,497,469 assigned to Velos Media LLC*. Provided one *Ex Parte* Reexam declaration. Retained by Greenberg Traurig LLP on behalf of Unified Patents LLC, San Jose, CA, 12/22 - 2/23.
- In the matter of *Certain Video Processing Devices and Products Containing Same*, USITC Investigation No. 337-TA-1323. Provided noninfringement analysis. Retained by Perkins Coie LLP on behalf of Intel Corporation, Santa Clara, CA, 10/22 - 12/22.
- In the matter of *TCL Electronics Holdings Ltd. v. LG Electronics Inc.*, petition for IPR of U.S. Patent No. 7,839,452, USPTO Case No. IPR2023-00461. Provided one IPR declaration. Retained by PV Law LLP on behalf of TCL Electronics Holdings Ltd. and associated companies, Huizhou, Guangdong, China, 8/22 - 5/23.
- In the matter of *PerDiemCo LLC v. CalAmp Corp.*, Case No. 1:20-cv-01397-VAC-SRF, U.S. District Court for the District of DE. Provided noninfringement analysis; case settled. Retained by Barnes & Thornburg LLP on behalf of CalAmp Corp., Irvine, CA, 6/22 - 4/23.
- In the matter of *DigiMedia Tech, LLC v. Lenovo (United States) Inc. and Motorola Mobility LLC*, Case No. 1:21-cv-00227-MN, U.S. District Court for the District of DE. Provided one declaration. Retained by Kilpatrick, Townsend & Stockton LLP on behalf of Lenovo (United States) Inc., Morrisville, NC, and Motorola Mobility LLC, Chicago, IL, 1/22 - 3/22.

- In the matter of *EyesMatch Ltd. and Memomi Labs Inc. v. Facebook, Inc., Instragram, LLC, and WhatsApp LLC*, Case No. 1-21-cv-00111, U.S. District Court for the District of DE. Provided two declarations. Retained by Cooley LLP on behalf of Facebook Inc., Instagram, LLC, and WhatsApp LLC, Menlo Park, CA, 1/22 - 7/22.
- In the matters of certain petitions for IPR associated with *Certain Fitness Devices, Streaming Components Thereof, and Systems Containing the Same*, USITC Investigation No. 337-TA-1265. Worked on five IPR petitions that were ultimately not filed. Retained by Cooley LLP on behalf of Peloton Interactive, Inc. (New York), lululemon athletica Inc. (Vancouver, BC) and Curiouser Products Inc. (New York) d/b/a MIRROR, and iFIT Inc. (Logan, UT), FreeMotion Fitness, Inc. (Logan, UT) and NordicTrack, Inc. (Logan, UT), 9/21 - 4/22.
- In the matter of *Unified Patents, LLC Request for Reexamination Against U.S. Patent No. 10,244,252 assigned to Electronics and Telecommunications Research Institute*. Provided one *Ex Parte* Reexam declaration. Retained by Greenberg Traurig LLP on behalf of Unified Patents LLC, San Jose, CA, 8/21 - 10/21.
- In the matter of *Indect USA Corp. v. Park Assist, LLC*, Case No. 3:18-cv-2409-BEN-MDD, U.S. District Court for the Southern District of CA. Provided one expert report, testified at deposition, testified at trial. Retained by Foley & Lardner LLP on behalf of Indect USA Corp., Denver, CO, 4/21 - 9/22.
- In the matter of *Unified Patents LLC v. GE Video Compression LLC*, Petition for *Ex Parte* Reexamination of U.S. Patent No. 6,795,583. Provided one *Ex Parte* Reexam declaration. Retained by Desmarais LLP on behalf of Unified Patents LLC, San Jose, CA, 9/20 - 04/21.
- In the matter of *Unified Patents LLC v. Electronics and Telecommunications Research Institute, Kwangwoon University Research Institute for Industry Cooperation, Industry-Academia Cooperation Group of Sejong University*, petition for IPR of U.S. Patent No. 9,736,484, Case No. IPR2021-00368. Provided one IPR declaration. Retained by Greenberg Traurig LLP on behalf of Unified Patents LLC, San Jose, CA, 9/20 - 12/20.
- In the matter of *Certain Electronic Devices, Including Computers, Tablet Computers, and Components and Modules Thereof*, USITC Investigation No. 337-TA-1208. Provided two expert reports, testified at deposition. Retained by WilmerHale LLP on behalf of Lenovo (United States) Inc., Morrisville, NC, 8/20 - 3/21.
- In the matter of *Park Assist, LLC v. San Diego County Regional Airport Authority and Ace Parking Management, Inc.*, Case No. 3:18-cv-02068-BEN-MDD, U.S. District Court for the Southern District of CA. Testified at deposition, provided one claim construction declaration. Retained by Morrison & Foerster LLP on behalf of SDCRAA, San Diego, CA, 7/20 - 03/21.
- In the matter of *LG Electronics Inc. v. Hisense Electronics Manufacturing Company of America Corp.*, Civil Case No. 2:19-cv-09474-JAK, U.S. District Court for the Central District of CA, Western Division. Provided one claim construction declaration, testified at deposition. Retained by Covington & Burling LLP on behalf of Hisense Electronics Manufacturing Company of America, Inc., Suwanee, GA, 7/20 - 1/21.
- In the matter of *Renesas Electronics Corporation v. Broadcom Corporation*, petition for IPR of U.S. Patent No. 8,284,844, USPTO Case No. IPR2019-01040. Provided one IPR declaration. Retained by Steptoe & Johnson LLP on behalf of Broadcom Limited, San Jose, CA, 6/20 - 7/20.
- In the matter of *Hisense Electronics Manufacturing Company of America v. LG Electronics Inc.*, petition for IPR of U.S. Patent No. 7,839,452, USPTO Case No. IPR2020-01208. Provided one IPR declaration. Retained by Covington & Burling LLP on behalf of Hisense Electronics Manufacturing Company of America, Inc., Suwanee, GA, 3/20 - 1/21.
- In the matter of *Nokia Technologies v. Lenovo (Shanghai) Electronics Tech. Co. Ltd, et al., 19-CV-0427 (E.D.N.C.) and related Nokia v. Lenovo cases including in Germany and India*. I was briefly retained to perform analysis of reference picture management in H.264 and H.265. Retained by Cooley LLP on behalf of Nvidia Corp., Santa Clara, CA, 1/20 - 3/20.
- In the matter of *Intel Corporation v. Dynamic Data Technologies, LLC*. Provided one IPR declaration; case settled before filing. Retained by Perkins Coie LLP on behalf of Intel Corporation, Santa Clara, CA, 3/19 - 6/19.
- In the matter of *Unified Patents LLC v. Velos Media, LLC*, petition for IPR of U.S. Patent No. 8,885,956, USPTO Case No. IPR2019-01130. Provided one IPR declaration. Retained by Greenberg Traurig LLP on behalf of Unified Patents LLC, San Jose, CA, 2/19 - 12/19.

- In the matter of *Unified Patents LLC v. Velos Media, LLC*, petition for IPR of U.S. Patent No. 10,110,898, USPTO Case No. IPR2019-00763. Provided two declarations, testified at deposition. Retained by Winston & Strawn LLP and Greenberg Traurig LLP on behalf of Unified Patents LLC, San Jose, CA, 10/18 - 04/20.
- In the matter of *Avago Technologies General IP (Singapore) Pte. Ltd. v. Nintendo of Europe GmbH*. Provided written opinions to the German Federal Patent Court. Retained by Freshfields Bruckhaus Deringer LLP on behalf of Avago Technologies General IP (Singapore) Pte. Ltd., 9/18 - 10/18.
- In the matter of *Certain Infotainment Systems, Components Thereof, and Automobiles Containing the Same*, USITC Investigation No. 337-TA-1119. Provided infringement analysis, one declaration. Retained by Steptoe & Johnson LLP on behalf of Broadcom Limited, San Jose, CA, 3/18 - 2/19.
- In the matter of *Cisco Systems, Inc. v. Realtime Adaptive Streaming, LLC*, petition for IPR of U.S. Patent No. 8,934,535, USPTO Case No. IPR2018-01384. Provided one IPR declaration. Retained by Winston & Strawn LLP on behalf of Cisco Systems, Inc., San Jose, CA, 3/18 - 8/18.
- In the matter of *Avago Technologies General IP (Singapore) Pte. Ltd. v. Audi AG*. Provided written opinion to the German Federal Patent Court. Retained by Grünecker Patent- und Rechtsanwälte PartG mbB on behalf of Avago Technologies General IP (Singapore) Pte. Ltd., 3/18 - 11/18.
- In the matter of *Certain Semiconductor Devices and Consumer Audiovisual Products Containing the Same*, USITC Investigation No. 337-TA-1047. Testified at deposition and trial. Provided three expert reports, two declarations, and three witness statements. Retained by Steptoe & Johnson LLP and Kilpatrick, Townsend & Stockton LLP on behalf of Broadcom Limited, San Jose, CA, 3/17 - 12/17.
- In the matter of *Certain Semiconductor Integrated Circuits and Products Containing Same*, USITC Investigation No. 337-TA-840. Infringement analysis and one written declaration. Retained by Covington & Burling LLP on behalf of Microchip Technology, Chandler, AZ, 2/17/12 - 3/21/12.

▶ Honors & Awards:

- Outstanding Reviewer Recognition Award, 2022 IEEE International Conference on Acoustics, Speech, and Signal Processing.
- Best Reviewer Award, 2020 IEEE International Conference on Image Processing.
- Top Reviewer Certificate, 2020 IEEE International Conference on Image Processing, awarded to top 3% out of over 700 reviewers.
- Named to the University of Oklahoma Gerald Tuma Presidential Professorship, 2017.
- *2014 IEEE International Conference on Image Processing Top 10% Paper Award*, for C.T. Nguyen and J.P. Havlicek, "On the amplitude and phase computation of the AM-FM image model."
- Named to the University of Oklahoma Williams Companies Foundation Presidential Professorship, 2009.
- Oklahoma Highway Safety Office Project Director's Award, FY 2009, co-recipient with Dr. R.D. Barnes, for implementing police electronic crash reporting in the State of Oklahoma.
- IEEE Maximum Impedance Award, OU School of ECE, 2007.
- University of Oklahoma College of Engineering Outstanding Faculty Advisor Award, 2005-2006.
- Oklahoma Highway Safety Office Award of Excellence, FY 2005, presented to the OU ITS Lab for enhancing traffic records management through project SAFE-T.
- Oklahoma Highway Safety Office Project Director's Award, FY 2003, co-recipient with Dr. J.J. Sluss, Jr., for enhancing highway safety through ITS projects.
- University of Oklahoma College of Engineering Brandon H. Griffith Faculty Award, 2003.
- Listed at number 22 in OU *FY 99 Awards – Top 25 Faculty/Staff – Norman Campus*.
- IEEE Favorite Instructor Award, OU School of ECE, 1998, 2000.
- University of Texas Engineering Foundation Award for Exemplary Engineering Teaching while Pursuing a Graduate Degree, 1992.
- Department of the Navy Award of Merit for Group Achievement, 1990.

- Management Systems Laboratories Outstanding Student Employee Scholarship, 1987.
- Eta Kappa Nu Honor Society
- Tau Beta Pi Honor Society
- Phi Kappa Phi Honor Society
- Listed in *Who's Who in America*, 2002 Ed.

▶ Professional Memberships:

- Institute of Electrical and Electronics Engineers (IEEE), Senior Member
- IEEE Signal Processing Society
- IEEE Intelligent Transportation Systems Society
- IEEE Computer Society

▶ Professional Service:

- National Science Foundation, Proposal Review Panelist: 2022, 2020, 2012.
- Senior Area Editor, *IEEE Transactions on Image Processing*, Nov. 2015 - Feb. 2018.
- Associate Editor, *IEEE Transactions on Image Processing*, Dec. 2010 - Oct. 2015.
- Associate Editor, *IEEE Transactions on Industrial Informatics*, Jan. 2010 - Jul. 2013.
- *IEEE International Conference on Image Processing (ICIP)*
  - Reviewer (1998 - present).
  - 2016: Paper Awards Committee.
  - 2013: Technical Area Chair for EDICS 6.1: Image & Video Analysis, Synthesis, and Retrieval.
  - 2012: Technical Area Chair for EDICS 6.2: Image & Video Analysis, Synthesis, and Retrieval; Session Chair.
  - 2007: Publications Chair, Organizing Committee, and Session Chair.
- *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*
  - Reviewer (2005-present).
  - 2012, 2013, 2014: IVMSP Technical Area Chair
- *IEEE Southwest Symposium on Image Analysis and Interpretation (SSIAI)*
  - 2024: Technical Program Committee
  - 2020: Technical Program Committee, Session Chair.
  - 2016: Technical Program Committee.
  - 2012, 2014: Technical Program Committee, Session Chair.
  - 2010: General Co-Chair (with Prof. Scott Acton, University of Virginia).
  - 2008: Technical Program Co-Chair (with Prof. Scott Acton, University of Virginia).
  - 2006: Technical Program Co-Chair (with Prof. Til Aach, RWTH Aachen University, Germany).
  - 2004: Technical Program Co-Chair (with Prof. Til Aach, Medical University of Luebeck, Germany).
  - 2002: Publicity Chairman, Technical Program Committee, Session Chair.
  - 2000: Publicity Chairman, Technical Program Committee, Session Chair.
  - 1998: Technical Program Committee, Session Chair.
- *IEEE International Conference on Intelligent Transportation Systems (ITSC)*
  - 2013: Reviewer
  - 2011: Session Chair, reviewer.
  - 2009: Technical Program Committee, Special Session Organizer, Session Chair.
- *IEEE Workshop on Perception Beyond the Visible Spectrum*
  - 2014, 2015: Technical Program Committee.
- *IEEE Int'l. Workshop on Object Tracking and Classification Beyond the Visible Spectrum*
  - 2009, 2013: Technical Program Committee.
- *European Signal Processing Conference (EUSIPCO)*

  - 2015, 2016, 2017, 2018: Reviewer
- *45th IEEE Midwest Symposium on Circuits and Systems (2002)*: Session Organizer and Session Chair.
- *IEEE Asilomar Conference on Signals, Systems, and Computers*
  - 2000, 2001: special session organizer
- Presently serving or have served as a reviewer for *IEEE Transactions on Signal Processing*; *IEEE Transactions on Image Processing*; *IEEE Signal Processing Letters*; *IEEE Transactions on Pattern Analysis and Machine Intelligence*; *IEEE Transactions on Circuits and Systems II*; *IEEE Transactions on Communications*; *IEEE Transactions on Industrial Informatics*; *IEEE Transactions on Parallel and Distributed Systems*; *IEEE Transactions on Education*; *IEEE Transactions on Information Technology in Biomedicine*; *Journal of the Optical Society of America – A*; *IEE Proceedings – Vision, Image & Signal Processing*; *IEE Electronics Letters*; *EURASIP Journal on Applied Signal Processing*; *Journal of Electronic Imaging*; *Pattern Recognition Letters*; *Multidimensional Systems and Signal Processing*; *Signal Processing*.

► Committee Assignments and University Service:

- Committee A, School of Electrical & Computer Engineering (tenure and promotion/executive committee) (Aug 14 - Aug 16, Nov 04 - Aug 08, Aug 23 - present)
- Chairman, Graduate Studies Committee, School of Electrical & Computer Engineering (Aug 08 - Jul 13)
- School of Electrical & Computer Engineering Graduate Liaison (Aug 08 - Jul 13)
- Graduate Studies Committee, School of Electrical & Computer Engineering (Aug 08 - Jul 13, Aug 97 - Aug 06)
- Chairman, Undergraduate Studies Committee, School of Electrical & Computer Engineering (Dec 21 - Aug 23)
- School of Electrical & Computer Engineering Undergraduate Program Committee (May 19 - May 20)
- Chairman, College of Engineering PP03 Faculty Task Force (Mar 12 - Apr 13) (task force to revise and rewrite policies and procedures for faculty tenure, promotion, annual evaluations, and workload)
- University of Oklahoma Conflict of Interest Advisory Committee (Aug 15 - present, Co-Chair Jan 21 - present).
- University of Oklahoma Conflict of Interest Officer Search Committee (Oct 21 - Jan 22)
- University of Oklahoma Graduate Council (Aug 10 - Jun 13)
- College of Engineering E-Club Faculty Co-Advisor (May 00 - May 04), Advisor (May 04 - Jan 06) (*this is the largest student organization on the OU campus*)
- Faculty Senate (Aug 02 - May 05)
- College of Engineering Academic Misconduct Board and Grade Appeals Board (Jun 03 - Jun 05)
- Coordinator, Systems Area Faculty Interest Group (FIG) (Dec 08 - present, Oct 00 - Aug 02)
- School of Music piano faculty search committee (Sep 19 - Mar 21, Sep 16 - Dec 16, Sep 12 - Dec 12)
- School of Electrical & Computer Engineering Director Search Committee (Oct 04 - Jun 05)
- School of ECE Faculty Search Committee (97, 02, 03, 05, 06, 07, 14, 15, 17, 18)

► Teaching:

1/97 - present: School of Electrical & Computer Eng., University of OK, Norman, OK

- ECE2713, Digital Signals and Filtering (SP 18, SP 19, SP 20, SP 21, SP 22, SP 23, SP 24)
- ECE3223, Microcomputer System Design (FA 97)
- ECE3793, Signals and Systems (SP 97, FA 98, SP 99, FA 99, SP 00, FA 00, SP 01, SP 02, FA 02, SP 03, FA 03, SP 04, FA 04, SP 05, FA 05, SP 06, SP 07, SP 08, SP 15, SP 16, SP 17)
- ECE3960, Honors Reading (SP 00)
- ECE3980, Honors Research (FA 01, SP 02, SP 03, FA 11, SP 12, SP 19)
- ECE4213, Digital Signal Processing (FA 02, FA 06, FA 07, FA 08, FA 09, FA 10, FA 11, FA 12, FA 14, FA 15, FA 16, FA 17, FA 18, FA 19, FA 20, FA 21, FA 22, FA 23)
- ECE4973, Digital Image Processing (SP 98)

- ECE4990, Special Studies (various semesters SP 98 – present)
- ECE5213, Digital Signal Processing (FA 02, FA 06, FA 07, FA 08, FA 09, FA 10, FA 11, FA 12, FA 14, FA 15, FA 16, FA 17, FA 18, FA 19, FA 20, FA 21, FA 22, FA 23)
- CS5273, Digital Image Processing (SP 98, FA 00, SP 02, SP 03, SP 04, SP 05)
- ECE5273, Digital Image Processing (SP 98, FA 00, SP 02, SP 03, SP 04, SP 05, SP 06, SP 07, SP 08, SP 09, SP 10, SP 11, SP 12, SP 13, SP 14, SP 15, SP 16, SP 17, SP 18, SP 19, SP 20, SP 21, SP 22, SP 23, SP 24)
- ECE5973/ECE4973, Multimedia Communications (FA 98)
- ECE5973, Kalman Filtering (FA 99, FA 03, FA 05)
- ECE5980, Thesis Research (SP 99 – present)
- ECE5990, Special Problems (various semesters FA 97 – present)
- ECE6283, Advanced Image Processing (FA 04)
- ECE6973, Advanced Image Processing (FA 01)
- ECE6980, Dissertation Research (SP 00 – present)

9/90 - 6/93: Dept. Electrical & Computer Eng., University of Texas, Austin, TX

- EE464K, Senior Design Projects (FA 90 – Summer 93)

1/91 - 12/96: Dept. Electrical & Computer Eng., University of Texas, Austin, TX

- EE381K, Topic 10: Image Processing (substitute lecturer)
- EE381K, Topic 8: Digital Signal Processing (substitute lecturer)
- EE380L, Topic 7: Computer Vision (substitute lecturer)
- EE351K, Probability and Random Processes (substitute lecturer)

▶ Graduate Degree Production:

Ph.D. Supervisions Completed:

1. Peter Tay, "An Optimally Well Localized Multi-Channel Parallel Perfect Reconstruction Filter Bank," October, 2003.
2. Guangwei Mu "WAAS Error, Integrity and Availability Modeling for GPS-based Aircraft Landing System," April, 2004 (co-supervised with Dr. Jim Sluss).
3. Hengqing Wen, "Anti-Spoof Design for TDMA Based GPS/LAAS Landing Aid," December, 2004.
4. Yunhua Wang, "Multiplierless CSD Techniques for High Performance FPGA Implementations of Digital Filters," April, 2007 (co-supervised with Dr. Linda DeBrunner).
5. Osama Alkhouli, "Hirschman Optimal Transform Least Mean Square Adaptive Filters," October, 2007 (co-supervised with Dr. Victor DeBrunner).
6. Ngao D. Mamuya, "Biometric Classification with Factor Analysis," May, 2010.
7. Nicholas A. Mould, "Neighborhood-Level Learning Techniques for Nonparametric Scene Models," May, 2012.
8. Chuong T. Nguyen, "Modulation Domain Image Processing," May, 2012.
9. Ekasit Vorakitolan, "Video CODEC with Adaptive Frame Rate Control for Intelligent Transportation System Applications," May, 2014.
10. Patrick Adrian Campbell, "High-Fidelity and Perfect Reconstruction Techniques for Synthesizing Modulation Domain Filtered Images," December, 2016.
11. Johnathan D. Williams, "Extended Observation Particle Filter with SVD Template Generation Implemented for GPU," December, 2018.
12. John R. Junger III, "Object Detection in Dual-Band Infrared," November 2023.

Ph.D. Supervisions in Progress:

- Elnaz Aghdaei
- Obada Muhammad (Biomedical Engineering)

Additional Ph.D. Committees Served on:

1. Madhavi Kadiyala, "Design of Optimal Subband Filter Banks for Image Discrimination," October, 1999.

2. Mohamed Allali, "Digital Signal Processing on the Unit Sphere via a Ramanujan Set of Rotations and Planar Wavelets" (interdisciplinary: Electrical Engineering and Mathematics), July, 2000.
3. Yunxiang Wu, "Iterative Decoding for Magnetic Recording Channels," September, 2000.
4. Helen Jun Xing, "Performance Evaluation of CDMA Systems," April, 2001.
5. Pamela Pike, "Leisure Piano Lessons: A Case Study of Lifelong Learning" (Music – DMA), May, 2001.
6. Longji Wang, "Active Vibration Control Systems in the Frequency and Sub-Band Domain," July, 2001.
7. Sebastian Torres, "Estimation of Doppler and Polarimetric Variables for Weather Radars," October, 2001.
8. Valliappa Lakshmanan, "A Hierarchical, Multiscale Texture Segmentation Algorithm for Real-World Scenes," October, 2001.
9. Richard Todd, "Design of Low-Density Parity Check Codes for Magnetic Recording Channels," December, 2002.
10. Guoping Wang, "A High-Performance Inner-Product Processor for Real and Complex Numbers," April, 2003.
11. Leslie Fife, "TriM: Tri-Modal Data Communication in Mobile Ad-Hoc Network Database Systems" (Computer Science), December, 2003.
12. Kuo-Liang Li, "Usage and Development of Piano Method Books in Tiawan: Interviews and Observations with Piano Teachers" (Music – DMA), April, 2004.
13. Weijun Tan, "Low-Density Parity-Check Coding for High-Density Magnetic Recording Systems," July, 2004.
14. Haitao Xia, "Error-Correction Coding for High-Density Magnetic Recording Channels," September, 2004.
15. Yongshen Ni, "Fuzzy Correlation and Regression Analysis," April, 2005.
16. Dayong Zhou, "Adaptive Nonlinear System Compensation Techniques and their Applications to Digital Communication and Control Systems," April, 2005.
17. Xiaojuan Hu, "FIR Filter Design for Area Efficient Implementation," May, 2005.
18. Lesley Sisterhen, "The Use of Imagery, Mental Practice, and Relaxation Techniques for Musical Performance Enhancement" (Music – DMA), June, 2005.
19. Su Yang, "Design of PHY & MAC Layer Protocols for Inter-Vehicle Communications," October, 2005.
20. Rob Sulman, "Affine Group Actions on Euclidean Space" (Mathematics), April, 2006.
21. Peng Yan, "A Study on Mobile Ad Hoc Networks Equipped with Free-Space Optical Capabilities," December, 2006.
22. Yan Zhai, "Improved Nonlinear Filtering for Target Tracking," April, 2007.
23. Cheng Zhong, "Efficient Soft-Decision Decoding of Reed-Solomon Codes," May, 2008.
24. Yih-Ru Huang, "Optoelectronics Three-Dimensional Tracking System for Collision Risk Model," April, 2009.
25. Mari Iida, "The Acceptance of Western Piano Music in Japan and the Career of Takahiro Sonoda" (Music – DMA), April, 2009.
26. Yong Ma, "Multi-Modal Behavior and Clustering in Dynamical Systems with Applications to Wind Farms," April, 2009.
27. Yuzhen Xue, "Identification and Estimation of Multi-Modal Complex Dynamic System," May, 2009.
28. B.H.M. Priyantha Wijesinghe, "Development of a Prototype In-Situ Fatigue Sensor for Structural Health Monitoring of Highway Bridges" (Civil Engineering), April, 2010.
29. Han Wang, "Parallel Subspace Subcodes of Reed-Solomon Codes for Magnetic Recording Channels," May, 2010.
30. Yahia Tachwali, "Cognitive Radio Solution for IEEE 802.22," July, 2010.
31. Wei Guan, "Some Local and Global Aspects of Mathematical Digital Signal Processing" (Mathematics), August, 2010.
32. Molly Donovan Wong, "Development and Characterization of a High Energy Phase Contrast X-Ray Imaging System Prototype," June, 2011.
33. Chenxi Lin, "Problems in the Design and Operation of Uncertain Complex Engineering Systems," July, 2011.

34. Jie Lu, "Distributed Computation and Optimization over Networks," July, 2011.
35. Rodney Keele, "Advances in Modeling and signal processing for Bit-Patterned Magnetic Recording Channels with Written-In Errors," April, 2012.
36. Di Wang, "Learning Visual Features for Grasp Selection and Control" (Computer Science), April, 2012.
37. Phuong Pham, "Target Tracking Using Wireless Sensor Networks," November, 2012.
38. Lina Sawalha, "Exploiting Heterogeneous Multicore Processors through Fine-Grained Scheduling and Low-Overhead Thread Migration," December, 2012.
39. Nickolas LaSorte, "The Coexistence of Wireless Medical Devices in the Presence of Heterogeneous Wireless Networks," April, 2013.
40. Shang Wang, "Waveform and Transceiver Optimization for Multi-Functional Airborne Radar Through Adaptive Processing," May, 2013.
41. Enfeng Jiang, "Channel Detection on Two-Dimensional Magnetic Recording," July, 2013.
42. David Sandmann, "Design and Implementation of a Precision Three-Dimensional Binocular Image Tracker for Departing Aircraft," November, 2013.
43. Min Zhu, "EEG/MEG Sparse Source Imaging and its Application in Epilepsy," December, 2013.
44. Seyed Hossein Hosseini, "Revealing Additional Information About Electricity Market Underlying Power System Using Power System Principles and Published Market Results," September, 2014.
45. James M. Kurdzo, "Pulse Compression Waveforms and Applications for Weather Radar" (Meteorology), October, 2015.
46. Peng F. Tang, "Analysis of Backbone Technique: A Hilbert Transform and Discrete Hilbert Transform-Based Technique," December, 2015.
47. Benjamin P. Carlson, "Phenotype Operators for Improved Performance of Heuristic Encoding within Genetic Algorithms" (Computer Science), April, 2016.
48. Erik Petrich, "Real-Time 3-D Scene Reconstruction," May, 2016.
49. Kristina Henckel, "A Pianistic Analysis of Bedřich Smetana's Piano Cycle *Dreams, Six Characteristic Pieces for Piano*" (Music – DMA), November, 2016.
50. Milad Javadi, "New Implication of Short Circuit Analysis in Assessing Impact of Renewable Energy Resources on System Strength of a Power Grid," June, 2017.
51. Xining Yu, "Digital Signal Processing Based Real-Time Phased Array Radar Backend System and Optimization Algorithms," October, 2017.
52. Muhammad Usman Ghani, "Optimization of a High-Energy X-Ray Inline Phase Sensitive Imaging System for Diagnosis of Breast Cancer," April, 2018.
53. Chuang Li, "Reconstructing Resting State Networks from EEG," August, 2018.
54. Craig Edwards, "The Enumeration Problem on Numerical Monoids" (Mathematics), May, 2019.
55. Faranak Aghaei, "Developing Novel Computer-Aided Detection and Diagnosis Systems of Medical Images," November, 2019.
56. Elizabeth Pacheco, "New Simple Representations of Leavitt Path Algebras" (Mathematics), December, 2019.
57. John Price, "From Bagatelles to Capriolen: Eugen d'Albert and his Later Keyboard Works" (Music – DMA), July, 2020.
58. Shajid Islam, "Probe-Based, Quasi-Near-Field Phased Array Calibration," December, 2020.
59. Morteza Heidari, "Applying Novel Machine Learning Technology to Optimize Computer-Aided Detection and Diagnosis of Medical Images," April, 2021.
60. Seyedehnafiseh Mirniaharikandehei, "Developing Novel Quantitative Imaging Analysis Schemes Based on Machine Learning for Cancer Research," April, 2021.
61. Fauzia Ahmed, "Evaluation of Transfemoral Prosthesis Performance Control Using Artificial Neural Network Controllers," April, 2021.
62. David Marvel, "Selected Songs of Nadia Boulanger: Formal Analysis and Adaptation for Brass Chamber Music" (Music – DMA), December, 2021.
63. Ali Khan, "Diffuse Optical Tomography of Spontaneous Brain Fluctuations in Humans" (Biomedical Engineering), April, 2022.
64. Farid Omoumi, "Subjective Evaluation of the In-Line Phase-Sensitive Imaging Systems in Breast Cancer Screening and Diagnosis," July, 2022.

65. Wenwen Li, "Multi-Persistence Homology and Topological Robotics" (Mathematics), April, 2023.
66. Hyeri Kim, "Robust Velocity Unfolding for Weather Radar Based on Convolutional Neural Networks," April, 2023.
67. Precious K. Jatau, "Machine Learning for Classifying Biological Radar Echos with S-Band Polarimetric Radar," November, 2023.

M.S. Supervisions Completed:

1. Santha Parameswaran, "Modulation Domain Forecasting of Nonstationary and Chaotic Time Series," March, 2000 (co-supervised with Dr. Monte Tull).
2. Tanachit Tangsukson, "AM-FM Texture Segmentation," May, 2000.
3. Altaf Ahmed, "Designing a Global IP Routing Strategy," July, 2001 (co-supervised with Dr. Jim Sluss).
4. Igor Ivić, "Demonstration of an Efficient Method for Estimating Spectral Moments," November, 2001.
5. Chee-Hong Gan, "Design of a GIS-Based Traffic Management Center Software Control Platform for Oklahoma Department of Transportation," April, 2002 (co-supervised with Dr. Jim Sluss).
6. Kok-Hoong Chow, "MPLS Modeling and Simulation in Optical Networks," July, 2002 (co-supervised with Dr. Jim Sluss).
7. Fabrice Ouandji, "Modulation Domain Texture Features for Content-Based Image Retrieval (CBIR)," July, 2004.
8. Ekasit Vorakitolan, "Work Zone Features for Oklahoma's Statewide Intelligent Transportation System," July, 2004.
9. Nantapol Kitiyanan, "AM-FM Fingerprint Reference Point Detection and Matching," November, 2004.
10. Krishnapraveen Suri, "Phase Reconstruction from Multicomponent AM-FM Image Representations," April, 2005.
11. Roy Sivley, "Perfect Reconstruction AM-FM Image Models," March, 2006.
12. Prakash K. Parthasarathy, "Minimum Entropy Based FIR Filter Estimation," December, 2006 (co-supervised with Dr. Victor DeBrunner).
13. Chuong Nguyen, "Dual-Domain Target Tracking," June, 2007.
14. Linda Ouandji, "Advanced Voice and Multimedia Communications System for the ODOT ITS Network," October, 2008.
15. Adrian Campbell, "AM-FM Image Processing Toolbox," December, 2008.
16. Colin Johnston, "Advanced Multi-Channel Dual Domain Constrained Adaptation Particle Filter for Infrared Target Tracking," April, 2009.
17. Anagha Wankhede, "Orientation Selective Perfect Reconstruction Filterbank Toolbox," May, 2010.
18. Basel Kilani, "Statewide Console for Distributed Control of Intelligent Transportation Systems," December, 2010.
19. Sahithi Peddireddy, "Reduction of Beat Type Digital Video Noise Using AM-FM Image Filters," December, 2011.
20. Shawna Ong, "Auxiliary Particle Filter for Modulation Domain Infrared Target Tracking," May, 2012.
21. John R. Jünger III, "The Comparison of Taylor Series and Unscented Transform Kalman Filters," May, 2012 (co-supervised with Dr. S. Lakshmivarahan).
22. Md. Ridwanul Alam, "Tissue Classification-Based Automated Threshold Selection (TCATS) for Segmentation of Bone in Marrow Proliferation Assessments," May, 2015.
23. Jesyca Fuenmayor Bello, "A State Vector Augmentation Method for Including Velocity Information in the Likelihood Function of the SIR Video Target Tracking Filter," July, 2016.
24. Hesham Makhlouf, "Police Electronic Citation Mobile System for Statewide Deployment in Oklahoma," April, 2018.
25. Rodrigo Collao Benitez, "Developing Affordable Smart Solutions for Police Reporting," July, 2018.
26. Brandon Carson, "Automatic Bone Structure Segmentation of Under-Sampled CT/FLT-

PET Volumes for HSCT Patients," July, 2021.
27. Favio Hurtado, "Multiclass Bone Segmentation of PET/CT Scans for Automatic SUV Extraction," December, 2021.

M.S. Supervisions in Progress:

- Tristan N. Arian
- Lucas J. Powers

Additional M.S. Committees Served on:

1. Kirankumar Govindarajan, "Implementation of a Wavelet Vocoder," July, 1997.
2. Tod Bussert, "Using Artificial Neural Networks to Improve the Mechanical Signature Analysis Test," December, 1997.
3. Georgios Lezos, "Neural Network and Fuzzy Logic Techniques for Time Series Forecasting," December, 1998.
4. Chetan Anantharaman, "Implementation of Generic Subband/Wavelet Architectures for Image Coding," April, 1999.
5. Mir Sayed Ali, "A CORSIM Traffic Model to Support ITS and DTA in Oklahoma City," February, 2000.
6. Aaron Bansemer, "Retrieval and Analysis of the Electric Field in Thunderstorms" (Meteorology), April, 2000.
7. James Shields, "Design and Implementation of a High-Speed Multiplexer-Based Parallel Multiplier," May, 2000.
8. Rick Pendergraft, "A Performance Evaluation of an Augmented GPS Landing System," September, 2001.
9. Sudhir Rai, "Signal Analysis of Heart Rate Variability Data," December, 2001.
10. Rupa Balan, "Neural Network Modeling of Heart Rate Variability," April, 2002.
11. Anand Mohan, "Low Power and Low Space FIR Filter Design," June, 2002.
12. Alan Harris, "A Fiber Bragg Grating Load Cell," July, 2002.
13. Mahmuda Afroz, "A Design to Measure the Strain of a Large Structure Using Fiber Bragg Gratings," July, 2002.
14. Santiago Rendón, "A Statistical Evaluation of a Protected Service Volume Using an Augmented GPS Landing System," August, 2002.
15. Yuan Chen, "Effects of Digital Watermarking on Digital X-Ray Images," January, 2003.
16. Scott Graham, "A Video System for LAAS/WAAS Data Analysis," May, 2003.
17. Ewa Matusiak, "Uncertainty Principles for Finite Abelian Group and Applications" (interdisciplinary program in Signal Processing, Computational & Applied Mathematics — *SigCAM*), May, 2003.
18. Totrakool Khongsap, "Quantization on a Sphere" (interdisciplinary program in Signal Processing, Computational & Applied Mathematics — *SigCAM*), May, 2003.
19. Minh Quang Ta, "Minimum Entropy Estimation of FIR Filters," May, 2003.
20. Eric Wainright, "Wavelength Diversity in Free-Space Optics to Alleviate Fog Effects," December, 2003.
21. Benjamin Mohr, "Design, Implementation and Testing of a New Curved Path Navigator for LAAS and WAAS," April, 2004.
22. Erik Petrich, "Image Processing Methods for Product Label Identification on Cylindrical Surfaces," July, 2004.
23. John Paul Nguyenkim, "Implementation of a Redundant Binary Co-Processor onto an FPGA for Complex Arithmetic Signal Processing," September, 2004.
24. Anil Babu Chalamalasetti, "Analysis of Radar Signals with Oversampling in Range," September, 2004.
25. Yih-Ru Huang, "Evaluation of a Real Time DGPS (LAAS) Landing System for Missed Approaches and Guided Missed Approaches," September, 2004.
26. Wei Zhang, "Efficient Multiplierless Filter Implementations for Embedded Systems," October, 2004.
27. Ashish Parajuli, "Speech Enhancement Based on Perceptual Wavelet Thresholding and Auditory Masking," December, 2004.
28. Ayodeji Fajebe, "A Software Methodology for Embedded Intelligent Systems," February, 2005.

29. Abderrahmane Bennis, "Division and Square-Root Based on Redundant Binary Numbers," April, 2005.
30. Roland Ferenczhalmy, "Analysis of Adsorption and Desorption Kinetics of Volatile Analytes Using Mid-Infrared Laser Absorption Spectroscopy," August, 2005.
31. Deepak V. Bhogaraju, "Entropy Uncertainty in FIR Filter Implementations," September, 2005.
32. Benjamin Blevins, "Stereoscopic Tracking of Approaching Aircraft," December, 2005.
33. Brian Birk, "The Design and Implementation of a Fault Tolerant LAAS Base Station," May, 2006.
34. Nicholas Mould, "Reconfigurable Computing Architectures: Dynamic and Steering Vector Methods," May 2006.
35. Rodolfo Salas, "Control Electronics for Laser Absorption Spectroscopy," May, 2006.
36. Matthew S. Falk, "Developing a New Airway Criteria Using Aircraft's Required Navigational Performance," December, 2006.
37. Hieu Thai, "System Identification of Bridges Under a Moving Load and Implementation of the Bridge Monitoring System," March, 2007.
38. Kevin Ford, "Computer Hardware for Vibration Mitigation and Monitoring," March, 2007.
39. Molly Donovan, "Performance Evaluation of a Phase Contrast X-Ray Imaging Prototype System," June, 2007.
40. Kyle Sparger, "Roadside Data Collection and Monitoring using GPRS Cellular Network," July, 2007.
41. Patrick Macklin, "Development and Integration of a Power Management Board for the Collision Risk Model," September, 2007.
42. Adriana Sofia Otero, "Adaptive Localized Route Maintenance Mechanism to Improve Performance of VoIP Over Ad Hoc Networks," April, 2010.
43. Jasper Staab, "Binary Mimicry in the Executable File," May, 2010.
44. Yasmin Jahir, "AODVH: Multipath Routing Protocol for Hybrid Nodes in Disaster Area Wireless Network (DAWN)," July, 2010.
45. Jordan Kuehn, "FPGA Real-Time Motion Control and Automation of Biped Robot," December, 2010.
46. Jacob Henderson, "Application of Magnetic Field Distortion Characteristics for use in Autonomous Location Detection," May, 2011.
47. Sonya Wolff, "Pre-Execution: An Elegant Approach to the Memory Wall," July, 2011.
48. Feng Nai, "Wind Turbine Clutter Mitigation for Weather Radars," November, 2011.
49. Vasiliy Mayer, "Redefining Airway Constraints Based on En Route Flight Tests," December, 2011.
50. Sina Asadallahi, "Distributed Adaptive Backoff Reservation Protocol for 802.11 Wireless Networks," July, 2012.
51. Nathan McVay, "Sensitivity Analysis of Long Term Bias Error in the Global Positioning System," October, 2012.
52. Timothy Wilson, "Remote Desktop Capability for Labview Programs on an Android Platform," November, 2012.
53. Muhammad Usman Ghani, "Quantitative Analysis of Contrast to Noise Ratio Using a Phase Contrast X-Ray Imaging Prototype," October, 2013.
54. Marcin Rutkowski, "Glitching-Aware Model Characterization Methodology for Power Estimation Techniques in CMOS Arithmetic Structures," May, 2014.
55. Kevin Windham, "Subsampling Effects on Range Migration Correction in SAR Imaging," July, 2014.
56. Milad Javadi, "Identification of Simultaneously Congested Transmission Lines in Power Market," December, 2014.
57. Nastaran Emaminejad, "Exploring the new CT Image Features to Improve Lung Cancer Diagnosis and Treatment Efficacy Assessment," April, 2015.
58. Faranak Aghaei, "Computer-Aided Breast MR Image Feature Analysis for Prediction of Tumor Response to Chemotherapy," April, 2015.
59. David Schvartzman Cohenca, "Weather Radar Spatio-Temporal Saliency (WR-STS)," June, 2015.
60. Lesya Borowska, "Experiments on Electromagnetic Leakage from Laptops," May, 2017.

61. Jiaxi Zhu, "Low-Cost, Software Defined FMCW Radar for Observations of Drones," May, 2017.
62. Johnny O'Keeffe, "Neuroimaging Features of Adults with and without Amnestic Mild Cognitive Impairment," July, 2017.
63. Lucia R. Fitzmorris, "Learning Assisted Decoupled Software Pipelining (LA-DSWP)," April, 2018.
64. Precious Jatau, "A Fuzzy Logic Algorithm for Separating Radar Echos from Birds and Insect at S-band," July, 2018.
65. Bradley Gregory, "Objective Characterization of In-Line Phase Contrast X-Ray Imaging Prototype Using a Mid-Energy Beam," July, 2019.
66. Brian Carlton, "Nonlinear Amplifier Amplitude Modulation Distortion Mitigation Techniques," April, 2022.
67. Trey T. Crump, "An Analysis of the Information Content of Radar Detection," July, 2022.
68. Roman A. Munoz, "A Study on Diffusion Probabilistic Models for Image Generation," November, 2023.

► **Externally Funded Grants and Contracts:**

1. J.P. Havlicek (PI), M. Atiquzzaman, and R.D. Barnes, "SAFE-T: Statewide Analysis for Engineering & Technology," State of Oklahoma, Department of Transportation, **$117,867**, 1/1/23-12/31/23. OU Pink Sheet Credit: 34% ($40,075).
2. S.M. Schaefer, S. Hampton, F. Cianfarani, J. Havlicek, and R. Barnes, "Oklahoma State Housing Assessment," Oklahoma Housing Finance Authority, **$925,487**, 1/1/23-12/31/27. OU Pink Sheet Credit: 20% ($185,097).
3. R.D. Barnes (PI) and J.P. Havlicek, "Police Automated Records Information Systems FY23," State of Oklahoma, Highway Safety Office, **$97,427**, 10/1/22-9/30/23. OU Pink Sheet Credit: 50% ($48,714).
4. J.P. Havlicek (PI) and R.D. Barnes, "Oklahoma Intelligent Transportation System FFY 2023," State of Oklahoma, Department of Transportation, **$500,299**, 7/1/22-12/31/23. OU Pink Sheet Credit: 50% ($250,150).
5. R.D. Barnes (PI) and J.P. Havlicek, "PARIS FY22," State of Oklahoma, Highway Safety Office, **$194,855**, 10/1/21-9/30/22. OU Pink Sheet Credit: 50% ($97,427).
6. J.P. Havlicek (PI), M. Atiquzzaman, and R.D. Barnes, "SAFE-T: Statewide Analysis for Engineering & Technology," State of Oklahoma, Department of Transportation, **$117,867**, 10/1/21-9/30/22. OU Pink Sheet Credit: 34% ($40,075).
7. J.P. Havlicek (PI) and R.D. Barnes, "Oklahoma Intelligent Transportation System FFY 2022," State of Oklahoma, Department of Transportation, **$770,000**, 7/1/21-12/31/22. OU Pink Sheet Credit: 50% ($385,000).
8. K.M. Williams (PI), J.L. Holter Chakrabarty, Y. Yanik, S.K. Vesely, and J.P. Havlicek, et al., including Emory University/Children's Hospital of Atlanta, OU Health Sciences Center, OU Norman Campus, and University of Michigan, "Multi-institutional Prospective Pilot **R**esearch of Imaging and blood biomarker **EV**aluation of **E**ngraftment after **AL**ogeneic Hematopoietic Stem Cell Transplantation in Children and Adults (REVEAL)," NIH Title: "Imaging and Blood Biomarkers to Predict Graft Failure after HSCT," US Dept. Health and Human Services, National Institutes of Health, National Heart, Lung, and Blood Institute. **$2,913,713**. 6/1/20-7/31/25. Prime contractor: Emory University/CHOA; subcontract awarded to OU Norman Campus: $34,478 for Period 3 (8/01/21-7/31/23); $40,562 for Period 2 (8/01/21-7/31/22); $40,562 for Period 1 (8/15/20-8/31/21). Subcontract PI: J.P. Havlicek. OU Pink Sheet Credit: 100% ($115,602).
9. J.P. Havlicek (PI) and R.D. Barnes, "PARIS D360 Database Update," State of Oklahoma, Department of Public Safety, **$28,246**, 5/7/21-6/30/21. OU Pink Sheet Credit: 50% ($14,123).
10. J.P. Havlicek (PI), M. Atiquzzaman, and R.D. Barnes, "SAFE-T: Statewide Analysis for Engineering & Technology," State of Oklahoma, Department of Transportation, **$117,867**, 10/1/20-9/30/21. OU Pink Sheet Credit: 34% ($40,075).
11. R.D. Barnes (PI) and J.P. Havlicek, "Drive Oklahoma: Oklahoma's Intelligent Transportation System FY21," State of Oklahoma, Department of Transportation, **$700,000**, 7/1/20-12/31/21. OU Pink Sheet Credit: 50% ($350,000).

12. R.D. Barnes (PI), J.P. Havlicek, and M. Atiquzzaman, "Electronic Police Records 2020 (Supplement)," State of Oklahoma, Highway Safety Office, **$112,140**, 10/1/19-9/30/20. OU Pink Sheet Credit: 40% ($44,856).
13. R.D. Barnes (PI), J.P. Havlicek, and M. Atiquzzaman, "Electronic Police Records 2020," State of Oklahoma, Highway Safety Office, **$112,140**, 10/1/19-9/30/20. OU Pink Sheet Credit: 40% ($44,856).
14. M. Atiquzzaman (PI), J.P. Havlicek, and R.D. Barnes, "SAFE-T: Statewide Analysis for Engineering & Technology," State of Oklahoma, Highway Safety Office, **$98,830**, 10/1/19-9/30/20. OU Pink Sheet Credit: 20% ($19,766).
15. R.D. Barnes (PI) and J.P. Havlicek, "Intelligent Transportation Systems 2020," State of Oklahoma, Department of Transportation, **$700,000**, 7/1/19-6/30/20. OU Pink Sheet Credit: 50% ($350,000).
16. J.P. Havlicek (PI), R.D. Barnes, and M. Atiquzzaman, "Oklahoma Impaired Driver Database," State of Oklahoma, Highway Safety Office, **$36,297**, 10/1/18-9/30/19. OU Pink Sheet Credit: 34% ($12,341).
17. R.D. Barnes (PI), J.P. Havlicek, and M. Atiquzzaman, "Police Automated Records Information System (PARIS)," State of Oklahoma, Highway Safety Office, **$199,088**, 10/1/18-9/30/19. OU Pink Sheet Credit: 40% ($79,635).
18. M. Atiquzzaman (PI), J.P. Havlicek, and R.D. Barnes, "SAFE-T: Statewide Analysis for Engineering & Technology," State of Oklahoma, Highway Safety Office, **$98,196**, 10/1/18-9/30/19. OU Pink Sheet Credit: 20% ($19,639).
19. R.D. Barnes (PI) and J.P. Havlicek, "Traffic Incident Management (TIM) Report Analysis," State of Oklahoma, Department of Transportation, **$60,000**, 9/27/18-7/31/19. OU Pink Sheet Credit: 50% ($30,000).
20. J.L. Holter Chakrabarty (PI), J.P. Havlicek, and S.K. Vesely, "FLT Imaging to Detect Relapse in Leukemia Patients Following Transplantation," US Dept. Health and Human Services, National Institutes of Health. **$49,799**. 9/1/18-6/30/19. Prime contractor: University of Oklahoma Health Sciences Center; subcontract awarded to OU Norman Campus: $13,218. Subcontract PI: J.P. Havlicek. OU Pink Sheet Credit: 100% ($13,218).
21. R.D. Barnes (PI) and J.P. Havlicek, "Hardware and Software for Next Generation ITS," State of Oklahoma, Department of Transportation, **$700,000**, 7/1/18-6/30/19. OU Pink Sheet Credit: 50% ($350,000).
22. R.D. Barnes (PI) and J.P. Havlicek, "Expanding PARIS+ to Regional Police Agencies," Southern Plains Transportation Center, **$39,738**, 10/15/17-5/30/18. OU Pink Sheet Credit: 50% ($19,869).
23. J.P. Havlicek (PI), R.D. Barnes, and M. Atiquzzaman, "OU Impaired Driver Database Hosting and Support," State of Oklahoma, Highway Safety Office, **$36,000**, 10/1/17-9/30/18. OU Pink Sheet Credit: 34% ($12,240).
24. R.D. Barnes (PI), J.P. Havlicek, and M. Atiquzzaman, "PARIS Software Development and Integration," State of Oklahoma, Highway Safety Office, **$200,000**, 10/1/17-9/30/18. OU Pink Sheet Credit: 40% ($80,000).
25. M. Atiquzzaman (PI), R.D. Barnes, and J.P. Havlicek, "SAFE-T Data Improvement Project," State of Oklahoma, Highway Safety Office, **$85,920**, 10/1/17-9/30/18. OU Pink Sheet Credit: 20% ($17,184).
26. R.D. Barnes (PI) and J.P. Havlicek, "Engineering and Design of Intelligent Transportation System," State of Oklahoma, Department of Transportation, **$635,000**, 10/1/16-9/30/17. OU Pink Sheet Credit: 50% ($317,500).
27. J.P. Havlicek (PI), R.D. Barnes, and M. Atiquzzaman, "Operation of Oklahoma Statewide Impaired Driver Database," State of Oklahoma, Highway Safety Office, **$39,811**, 1/1/17-9/30/17. OU Pink Sheet Credit: 34% ($13,536).
28. R.D. Barnes (PI), J.P. Havlicek, and M. Atiquzzaman, "Police Automated Records Information System and Collision Reporting System," State of Oklahoma, Highway Safety Office, **$233,977**, 10/1/16-9/30/17. OU Pink Sheet Credit: 40% ($93,591).
29. M. Atiquzzaman (PI), R.D. Barnes, and J.P. Havlicek, "Statewide Analysis for Engineering and Technology," State of Oklahoma, Highway Safety Office, **$88,877**, 10/1/16-9/30/17. OU Pink Sheet Credit: 20% ($17,775).
30. R.D. Barnes (PI) and J.P. Havlicek, "Intelligent Transportation System Engineering and

Design," State of Oklahoma, Department of Transportation, **$668,819**, 10/1/15-9/30/16. OU Pink Sheet Credit: 50% ($334,410).

31. R.D. Barnes (PI), J.P. Havlicek, and M. Atiquzzaman, "Police Automated Records Information System and DUI Tracking Database," State of Oklahoma, Highway Safety Office, **$379,128**, 10/1/15-9/30/16. OU Pink Sheet Credit: 40% ($151,651).
32. M. Atiquzzaman (PI), J.P. Havlicek, and R.D. Barnes, "Statewide Analysis for Engineering and Technology," State of Oklahoma, Highway Safety Office, **$88,877**, 10/1/15-9/30/16. OU Pink Sheet Credit: 20% ($17,775).
33. L. Ding (PI), J.P. Havlicek, and D.T. Liu, "RII Track-2 FEC: Innovative, Broadly Accessible Tools for Brain Imaging, Decoding and Modulation," National Science Foundation, **$1,357,173** (subcontract to the University of Rhode Island; prime contract award amount: $5,999,853), 8/1/15-7/31/19. OU Pink Sheet Credit: 33% ($447,867).
34. J.P. Havlicek (PI) and R.D. Barnes, "Oklahoma Bureau of Narcotics and Dangerous Drugs (OBNDD) PARIS System," Oklahoma Bureau of Narcotics and Dangerous Drugs, **$7,201**, 5/1/15-12/31/15. OU Pink Sheet Credit: 50% ($3,601).
35. R.D. Barnes (PI), J.P. Havlicek, and M. Atiquzzaman, "OU Intelligent Transportation Systems FY15," Oklahoma Department of Transportation, **$400,000**, 10/1/14-9/30/15. OU Pink Sheet Credit: 40% ($160,000).
36. J.P. Havlicek (PI), M. Atiquzzaman, and R.D. Barnes, "SAFE-T System Expert System Functionality: Option III," Oklahoma Department of Transportation, **$232,127**, 1/1/15-12/31/16. OU Pink Sheet Credit: 34% ($78,923).
37. M.B. Yeary (PI), R.D. Palmer, and J.P. Havlicek, "System and Software Support for CGI (Supplement)," CGI Federal, Inc., **$34,224**, 11/7/14-3/8/15, OU Pink Sheet Credit: 25% ($8,556).
38. M. Atiquzzaman (PI), R.D. Barnes, and J.P. Havlicek, "Enhancing Driver Safety During Severe Weather Conditions," Southern Plains Transportation Center, **$199,998**, 7/1/14-6/30/16. OU Pink Sheet Credit: 30% ($59,999).
39. R.D. Barnes (PI), J.P. Havlicek, and M. Atiquzzaman, "Police Automated Records and Information System," State of Oklahoma, Highway Safety Office, **$368,500**, 10/1/14-9/30/15. OU Pink Sheet Credit: 40% ($147,400).
40. M. Atiquzzaman (PI), J.P. Havlicek, and R.D. Barnes, "University of Oklahoma Crash Reporting and Analysis," State of Oklahoma, Highway Safety Office, **$74,825**, 10/1/14-9/30/15. OU Pink Sheet Credit: 20% ($14,965).
41. Joseph P. Havlicek, "PET Image Analysis Using a Novel Radioisotope Fluorothymidine for Identification of Bone Marrow Repopulation following Myeloablative Transplantation: Supplement," University of Oklahoma Health Sciences Center, Stephenson Cancer Center, **$16,966**, 10/1/14-4/30/15. OU Pink Sheet Credit: 100% ($16,966).
42. J.L. Holter Chakrabarty (PI), J.P. Havlicek, and S.K. Vesely, "PET Image Analysis Using a Novel Radioisotope Fluorothymidine for Identification of Bone Marrow Repopulation following Myeloablative Transplantation," Oklahoma Shared Clinical and Translational Resources pilot grant funded by US Dept. Health and Human Services, National Institutes of Health. **$50,000**. 1/8/14-6/30/14. Prime contractor: University of Oklahoma Health Sciences Center; subcontract awarded to OU Norman Campus: $25,788. Subcontract PI: J.P. Havlicek. OU Pink Sheet Credit: 100% ($25,788).
43. R.D. Barnes (PI), J.J. Sluss, Jr., M. Atiquzzaman, and J.P. Havlicek, "ITS System Engineering and Integration," Oklahoma Department of Transportation, **$344,000**. 10/1/13-9/30/14. OU Pink Sheet Credit: 35% ($120,400).
44. M. Atiquzzaman (PI), J.P. Havlicek, and R.D. Barnes, "University of Oklahoma SAFE-T Project," State of Oklahoma, Highway Safety Office, **$174,000**, 10/1/13-9/30/14. OU Pink Sheet Credit: 20% ($34,800).
45. R.D. Barnes (PI), M. Atiquzzaman, and J.P. Havlicek, "OU TraCS/PARIS Project," State of Oklahoma, Highway Safety Office, **$238,000**, 10/1/13-9/30/14. OU Pink Sheet Credit: 40% ($95,200).
46. R.D. Barnes (PI), J.J. Sluss, Jr., M. Atiquzzaman, and J.P. Havlicek, "ITS System Engineering and Integration," Oklahoma Department of Transportation, **$344,000**. 10/1/12-9/30/13. OU Pink Sheet Credit: 37% ($127,280).
47. R.D. Barnes (PI), M. Atiquzzaman, and J.P. Havlicek, "Police Automated Records Infor-

mation System," State of Oklahoma, Highway Safety Office, **$155,000**, 10/1/12-9/30/13. OU Pink Sheet Credit: 40% ($62,000).

48. M. Atiquzzaman (PI), J.P. Havlicek, and R.D. Barnes, "University of Oklahoma Crash Reporting and Analysis," State of Oklahoma, Highway Safety Office, **$55,000**, 10/1/12-9/30/13. OU Pink Sheet Credit: 20% ($11,000).
49. R.D. Barnes (PI), J.J. Sluss, Jr., M. Atiquzzaman, and J.P. Havlicek, "ITS System Engineering and Integration," Oklahoma Department of Transportation, **$312,150**. 10/1/11-9/30/12. OU Pink Sheet Credit: 35% ($109,253).
50. J.P. Havlicek (PI) and R.D. Barnes, "GPS Location Data Enhancement in Electronic Traffic Records," Oklahoma Transportation Center, **$100,000**, 10/1/11-12/31/12. OU Pink Sheet Credit: 50% ($50,000).
51. R.D. Barnes (PI) and J.P. Havlicek, "Fatality Analysis Reporting System and Roadway Inventory Correlation," Oklahoma Transportation Center, **$100,000**, 10/1/11-12/31/12. OU Pink Sheet Credit: 50% ($50,000).
52. R.D. Barnes (PI), M. Atiquzzaman, and J.P. Havlicek, "OU Software Development & Integration Project," State of Oklahoma, Highway Safety Office, **$220,000**, 10/1/11-9/30/12. OU Pink Sheet Credit: 40% ($88,000).
53. M. Atiquzzaman (PI), J.P. Havlicek, and R.D. Barnes, "University of Oklahoma Crash Reporting and Analysis," State of Oklahoma, Highway Safety Office, **$54,660**, 10/1/11-9/30/12. OU Pink Sheet Credit: 20% ($10,932).
54. R.D. Barnes (PI), J.J. Sluss, Jr., M. Atiquzzaman, J.P. Havlicek, J. Basara, and M.P. Tull, "A Mobile Intelligent Transportation System (ITS) Platform," Oklahoma Transportation Center, **$341,352**. 1/1/11-2/29/12. OU Pink Sheet Credit: 20% ($68,270).
55. R.D. Barnes (PI), J.J. Sluss, Jr., M. Atiquzzaman, J.P. Havlicek, and M.P. Tull, "ITS System Engineering Crash Diagram Supplement," Oklahoma Department of Transportation, **$17,645**. 10/1/10-6/30/12. OU Pink Sheet Credit: 25% ($4,411).
56. R.D. Barnes (PI), J.J. Sluss, Jr., M. Atiquzzaman, J.P. Havlicek, and M.P. Tull, "Intelligent Transportation System (ITS) Engineering and Integration Services," Oklahoma Department of Transportation, **$341,000**. 10/1/10-6/30/12. OU Pink Sheet Credit: 25% ($82,250).
57. R.D. Barnes (PI), M. Atiquzzaman, J.P. Havlicek, and M.P. Tull, "OU Software Development & Integration Project," State of Oklahoma, Highway Safety Office, **$234,573**, 10/1/10-9/30/11. OU Pink Sheet Credit: 30% ($70,372).
58. M. Atiquzzaman (PI), J.P. Havlicek, M.P. Tull, and R.D. Barnes, "University of Oklahoma Crash Reporting and Analysis," State of Oklahoma, Highway Safety Office, **$64,879**, 10/1/10-9/30/11. OU Pink Sheet Credit: 22% ($14,273).
59. R.D. Barnes (PI), J.J. Sluss, Jr., M. Atiquzzaman, J.P. Havlicek, and M.P. Tull, "Intelligent Transportation System (ITS) Engineering and Integration Services," Oklahoma Department of Transportation, **$220,000**. 10/1/09-9/30/10. OU Pink Sheet Credit: 25% ($55,000).
60. R.D. Barnes (PI), M. Atiquzzaman, J.P. Havlicek, and M.P. Tull, "OU Software Development & Integration Project," State of Oklahoma, Highway Safety Office, **$150,000**, 10/1/09-9/30/10. OU Pink Sheet Credit: 30% ($45,000).
61. M. Atiquzzaman (PI), J.P. Havlicek, M.P. Tull, and R.D. Barnes, "University of Oklahoma Crash Reporting and Analysis," State of Oklahoma, Highway Safety Office, **$55,000**, 10/1/09-9/30/10 OU Pink Sheet Credit: 22% ($12,100).
62. R.D. Barnes (PI), James J. Sluss, Jr., M. Atiquzzaman, J.P. Havlicek, and M.P. Tull, "Roadway Weather Information System and Automatic Vehicle Location (AVL) Coordination," Oklahoma Transportation Center (OTC), **$145,433**, 6/1/08-5/31/10. OU Pink Sheet Credit: 20% ($29,087).
63. R.D. Barnes (PI), James J. Sluss, Jr., M. Atiquzzaman, J.P. Havlicek, and M.P. Tull, "Roadway Weather Information System and Automatic Vehicle Location (AVL) Coordination (Matching Funds)," Oklahoma Department of Transportation, **$55,000**, 6/1/08-5/31/10. OU Pink Sheet Credit: 20% ($11,000).
64. R.D. Barnes (PI), J.J. Sluss, Jr., M. Atiquzzaman, J.P. Havlicek, M.P. Tull, and H. Refai, "ITS System Engineering and Integration Supplement," Oklahoma Department of Transportation, **$33,000**. 11/1/08-10/31/09. OU Pink Sheet Credit: 10% ($3,300).
65. R.D. Barnes (PI), J.J. Sluss, Jr., J.P. Havlicek, and M.P. Tull, "Intelligent Transportation System (ITS) Engineering and Integration Services," Oklahoma Department of Transporta-

tion, **$155,000**. 10/1/08-9/30/09. OU Pink Sheet Credit: 25% ($38,750).

66. J.P. Havlicek (PI) and G. Fan, "Multiple Domain Particle Filters for Integrated Tracking and Recognition in IR Imagery," Department of Defense, Army Research Office, **$474,000**, 7/1/08-6/30/11. OU Pink Sheet Credit: 100% ($474,000).
67. R.D. Barnes (PI), J.P. Havlicek, and M.P. Tull, "OU Software Development & Integration Project," State of Oklahoma, Highway Safety Office, **$150,000**, 10/1/08-9/30/09. OU Pink Sheet Credit: 33% ($49,500).
68. R.D. Barnes (PI), J.P. Havlicek, and M.P. Tull, "OU Software Development & Integration Project Supplement," State of Oklahoma, Highway Safety Office, **$5,000**, 7/15/09-9/30/09. OU Pink Sheet Credit: 33% ($1,650).
69. M. Atiquzzaman (PI), J.P. Havlicek, M.P. Tull, and R.D. Barnes, "University of Oklahoma Crash Reporting and Analysis System," State of Oklahoma, Highway Safety Office, **$54,745**, 10/1/08-9/30/09. OU Pink Sheet Credit: 22% ($12,044).
70. J.P. Havlicek (PI), M.P. Tull, and R.D. Barnes, "OU Software Development & Integration Project (TraCS) Supplement," State of Oklahoma, Highway Safety Office, **$50,000**, 10/1/07-9/30/08. OU Pink Sheet Credit: 40% ($20,000).
71. J.P. Havlicek (PI), M.P. Tull, and R.D. Barnes, "OHP Troop S Civil Assessment System," State of Oklahoma, Department of Public Safety, **$50,000**, 4/15/08-4/14/09. OU Pink Sheet Credit: 34% ($17,000).
72. J.P. Havlicek (PI), M.P. Tull, and R.D. Barnes, "Automated Driver License Testing System," State of Oklahoma, Department of Public Safety, **$108,035**, 10/1/07-9/30/08. OU Pink Sheet Credit: 40% ($43,214).
73. J.P. Havlicek (PI), M.P. Tull, and R.D. Barnes, "OU Software Development & Integration Project (TraCS)," State of Oklahoma, Highway Safety Office, **$150,000**, 10/1/07-9/30/08. OU Pink Sheet Credit: 40% ($60,000).
74. J.P. Havlicek (PI), M. Atiquzzaman, M.P. Tull, and R.D. Barnes, "University of Oklahoma Crash Reporting and Analysis System (SAFE-T)," State of Oklahoma, Highway Safety Office, **$53,171**, 10/1/07-9/30/08. OU Pink Sheet Credit: 30% ($15,951).
75. M.P. Tull (PI), J.J. Sluss, Jr., J.P. Havlicek, and R.D. Barnes, "ITS System Engineering and Integration Services to be Provided by the OU ITS Lab as Part of the Oklahoma Transportation Center, FY 2008," Oklahoma Department of Transportation, **$219,976**, 10/1/07-9/30/08. OU Pink Sheet Credit: 30% ($65,993).
76. J.P. Havlicek (PI), J.J. Sluss, Jr., and M.P. Tull, "TraCS: Traffic and Criminal Software (continuation of OU Mobile Data Collection System Pilot Project)," State of Oklahoma, Highway Safety Office, **$182,467**, 10/1/06-9/30/07. OU Pink Sheet Credit: 40% ($72,987).
77. M.P. Tull (PI), J.J. Sluss, Jr., and J.P. Havlicek, "ITS System Engineering and Integration," Oklahoma Department of Transportation, **$208,000**, 10/1/06-9/30/07. OU Pink Sheet Credit: 45% ($93,600).
78. M.P. Tull (PI), J.J. Sluss, Jr., M. Atiquzzaman, J.P. Havlicek, and T. Runolfsson, "Advanced Voice and Multimedia Communications System for the ODOT ITS Network," State of Oklahoma, Department of Transportation (Oklahoma Transportation Center), **$81,000**, 10/1/06-9/30/07. OU Pink Sheet Credit: 30% ($24,300).
79. J.P. Havlicek (PI), J.J. Sluss, Jr., M. Atiquzzaman, M.P. Tull, and T. Runolfsson, "University of Oklahoma Crash Reporting and Analysis," State of Oklahoma, Highway Safety Office, **$50,000**. 10/1/06-9/30/07. OU Pink Sheet Credit: 25% ($12,500).
80. J.P. Havlicek (PI), J.J. Sluss, Jr., M.P. Tull, and T. Runolfsson, "OU Mobile Data Collection System Pilot Project (Continuation)," State of Oklahoma, Highway Safety Office, **$45,751**, 10/1/06-9/30/07. OU Pink Sheet Credit: 25% ($11,438).
81. J.J. Sluss, Jr. (PI), J.P. Havlicek, M.P. Tull, and T. Runolfsson, "Truck Weight Enforcement Using Advanced Weigh-in-Motion Systems," Oklahoma Transportation Center, **$78,223**, 5/1/06-4/30/07. OU Pink Sheet Credit: 25% ($19,556).
82. T. Landers (PI), with 19 Co-PI's including J.P. Havlicek, "Inter-Modal Containerized Freight Security: FY 06 Allocation," Oklahoma Department of Transportation, **$2,083,151**, 7/1/06-6/30/07. OU Pink Sheet Credit: 6% ($124,989).
83. J.P. Havlicek (PI), J.J. Sluss, Jr., M.P. Tull, and T. Runolfsson, "OU Mobile Data Collection Project (CDL)," State of Oklahoma, Highway Safety Office, **$105,277**, 3/1/06-9/30/06. OU Pink Sheet Credit: 25% ($26,319).

84. J.J. Sluss, Jr. (PI), J.P. Havlicek, M.P. Tull, and T. Runolfsson, "Intelligent Transportation System (ITS) Engineering and Integration Services," Oklahoma Department of Transportation, **$225,000**, 10/1/05-9/30/06. OU Pink Sheet Credit: 25% ($56,250).
85. J.P. Havlicek (PI), M.P. Tull, and J.J. Sluss, Jr., "SAFE-T: State-Wide Analysis for Enhancing Transportation," State of Oklahoma, Highway Safety Office, **$50,000**, 10/1/05-9/30/06. OU Pink Sheet Credit: 33% ($16,500).
86. R. Mc Pherson (PI), J.J. Sluss, Jr., J. Snow, J.P. Havlicek, J. Basara, M. Wolfinbarger, and C. Friebrich, "Clarus Weather System Design," Mixon/Hill, Inc. (prime contractor; flow-through from U.S. DoT – FHWA), **$411,769**, 6/1/05-2/28/07. OU Pink Sheet Credit: 10% ($41,177).
87. J.P. Havlicek (PI), J.J. Sluss, Jr., M.P. Tull, and T. Runolfsson, "OU Mobile Data Collection System Pilot Project," State of Oklahoma, Highway Safety Office, **$208,000**, 4/25/05-3/31/06. OU Pink Sheet Credit: 25% ($52,000).
88. J.P. Havlicek (PI) and J.J. Sluss, Jr., "University of Oklahoma Crash Reporting and Analysis System (FMCSA Supplement)," State of Oklahoma, Highway Safety Office, **$75,000**, 1/1/05-9/30/05. OU Pink Sheet Credit: 50% ($37,500).
89. J.P. Havlicek (PI) and J.J. Sluss, Jr., "University of Oklahoma Crash Reporting and Analysis System," State of Oklahoma, Highway Safety Office, **$50,000**, 10/1/04-9/30/05. OU Pink Sheet Credit: 50% ($25,000).
90. J.J. Sluss, Jr. (PI) and J.P. Havlicek, "Intelligent Transportation System Engineering and Integration Services," Oklahoma Department of Transportation, **$222,356**, 10/1/04-9/30/05. OU Pink Sheet Credit: 50% ($111,178).
91. J.P. Havlicek (PI) and G. Fan, "Integrated Detection, Tracking, Classification, and Learning for Dual-Band Infrared Imagery," Department of Defense, Army Research Office, **$465,897**, 7/1/04-6/30/07. OU Pink Sheet Credit: 100% ($465,897).
92. J.J. Sluss, Jr. (PI) and J.P. Havlicek, "Design and Integration of ITS (Intelligent Transportation Systems) Project in Oklahoma," Oklahoma Department of Transportation, **$164,500**, 10/1/03-9/30/04. OU Pink Sheet Credit: 50% ($82,250).
93. J.P. Havlicek (PI) and J.J. Sluss, Jr., "A Statewide Crash Reporting and Analysis System," State of Oklahoma, Highway Safety Office, **$50,000**, 10/1/03-9/30/04. OU Pink Sheet Credit: 50% ($25,000).
94. J.J. Sluss, Jr. (PI) and J.P. Havlicek, "Design and Integration of ITS (Intelligent Transportation Systems) Project in Oklahoma (Year 0)," Oklahoma Department of Transportation, **$41,000**, 7/1/03-9/30/03. OU Pink Sheet Credit: 50% ($20,500).
95. J.J. Sluss, Jr. (PI), J.P. Havlicek, and S. Radhakrishnan, "Development of a 511 Traveler Information Program Deployment Plan for Oklahoma," Oklahoma Department of Transportation, **$50,000**, 1/1/03-6/30/04. OU Pink Sheet Credit: 33% ($16,500).
96. J.P. Havlicek (PI) and J.J. Sluss, Jr., "A Statewide Accident Reporting and Analysis System," Oklahoma Transportation Center, **$30,000**, 1/1/03-9/30/03. OU Pink Sheet Credit: 50% ($15,000).
97. J.P. Havlicek (PI) and J.J. Sluss, Jr., "ITS Features for Enhanced Highway Safety in Work Zones," State of Oklahoma, Highway Safety Office, **$50,000**, 10/1/02-9/30/03. OU Pink Sheet Credit: 50% ($25,000).
98. J.J. Sluss, Jr. (PI) and J.P. Havlicek, "Design and Integration of ITS (Intelligent Transportation Systems) Project in Oklahoma," Oklahoma Department of Transportation, **$145,000**, 6/18/02-9/30/03. OU Pink Sheet Credit: 50% ($72,500).
99. J.E. Fagan (PI), J.P. Havlicek, and G.R. Schaumburg, "Determining the Required Navigational Performance of the GPS, WAAS, and LAAS Systems for Precision Simple and Complex Approaches and the Development of Models for the Prediction of the Operational Performance of these Navigation Systems," Federal Aviation Administration, **$545,000**, 5/1/02-6/30/03. OU Pink Sheet Credit: 30% ($163,500).
100. J.J. Sluss, Jr. (PI), J.P. Havlicek, and S. Radhakrishnan, "Oklahoma Statewide ITS Strategic Plan and ITS/CVO Plan," Federal Highway Administration/Oklahoma Department of Transportation subcontract; prime contractor: P.B. Farradyne, Inc., **$32,692**, 3/1/02-3/31/03. OU Pink Sheet Credit: 33% ($10,788).
101. J.E. Fagan (PI), J.P. Havlicek, and G.R. Schaumburg, "Determining the Required Navigational Performance of the GPS, WAAS, and LAAS Systems for Precision Simple and

Complex Approaches and the Development of Models for the Prediction of the Operational Performance of these Navigation Systems in a Wide Variety of Aircraft (Global Positioning System Wide and Local Area Augmentation System)," Federal Aviation Administration, **$240,000**, 2/1/00-6/30/02. OU Pink Sheet Credit: 30% ($72,000).

102. J.P. Havlicek (PI), "Decentralized Image Retrieval for Education \(DIRECT\)," National Science Foundation subcontract; prime contractor: University of Virginia, PI: S.T. Acton, **$63,171**, 1/1/02-12/31/03. OU Pink Sheet Credit: 100% ($63,171).
103. J.P. Havlicek (PI) and J.J. Sluss, Jr., "System Development and Testing for ITS," State of Oklahoma, Highway Safety Office, **$50,000**, 10/1/01-9/30/02. OU Pink Sheet Credit: 50% ($25,000).
104. M.P. Tull (PI), J.P. Havlicek, J.J. Sluss, Jr., and J. Cheung, "Artificial Intelligence Based Forecasting," Lucent Technologies, **$39,943**, 1/1/01-5/31/01. OU Pink Sheet Credit: 37% ($14,779).
105. P. Pulat (PI), J.J. Sluss, Jr., J.P. Havlicek, S. Radhakrishnan, and S.A. Moses, "Design and Evaluation of a Hierarchical Highway Network Structure and a Decision Support System with Surveillance Information to Enhance Business Partnerships in the E-Marketplace," National Science Foundation, **$100,001**, 8/15/00-8/14/01. OU Pink Sheet Credit: 20% ($20,000).
106. J.P. Havlicek (PI) and J.J. Sluss, Jr., "System Development, Integration, and Component Testing for Oklahoma City's Intelligent Transportation System," State of Oklahoma Highway Safety Office, **$50,000**, 10/1/00-9/30/01. OU Pink Sheet Credit: 50% ($25,000).
107. M.P. Tull (PI), J.J. Sluss, Jr., J.P. Havlicek, and S. Radhakrishnan, "Artificial Intelligence Based Inventory and Forecasting," Lucent Technologies, **$248,428**, 1/1/00-12/31/00. OU Pink Sheet Credit: 33% ($81,981).
108. J.P. Havlicek (PI) and J.J. Sluss, Jr., "System Development, Integration, and Component Testing for Oklahoma City's Intelligent Transportation System," State of Oklahoma Highway Safety Office, **$50,001**, 10/1/99-9/30/00. OU Pink Sheet Credit: 50% ($25,001).
109. J.J. Sluss, Jr. (PI) and J.P. Havlicek, "An Intelligent Transportation System for Oklahoma City," State of Oklahoma Department of Transportation, **$80,000**, 7/1/99-8/15/00. OU Pink Sheet Credit: 50% ($40,000).
110. J.E. Fagan (PI), J.P. Havlicek, J.J. Sluss, Jr., and G.R. Schaumburg, "A Proposal for Research to Determine the Required Navigational Performance of the GPS, WAAS, and LAAS Systems for Simple and Complex Approaches and the Development of Models for the Prediction of the Operational Performance of these Navigation Systems in a Wide Variety of Aircraft," Federal Aviation Administration, **$866,300**, 4/16/99-6/30/01. OU Pink Sheet Credit: 30% ($259,890).
111. M.P. Tull (PI), J.J. Sluss, Jr., and J.P. Havlicek, "Extended Artificial Intelligence Based Forecasting and Inventory Planning Models," Lucent Technologies, **$232,754**, 1/1/99-12/31/99. OU Pink Sheet Credit: 33.3% ($77,507).
112. J.J. Sluss, Jr. (PI) and J.P. Havlicek, "System Architecture Design for Oklahoma City's Intelligent Transportation System," State of Oklahoma Department of Transportation, **$49,776**, 5/13/98-10/31/98. OU Pink Sheet Credit: 50% ($24,888).
113. M.P. Tull (PI), J.J. Sluss, Jr., J.P. Havlicek, V.E. DeBrunner, L.S. DeBrunner, S.C. Lee, and S. Radhakrishnan, "Artificial Intelligence Based Forecasting and Inventory Planning Models," Lucent Technologies, **$229,298**, 11/1/97-12/31/98. OU Pink Sheet Credit: 21% ($48,153).

► **Total External Funding: $27,061,653**

► **Total Attributable to J.P. Havlicek (OU Pink Sheet Credit): $8,924,875**

► **Internally Funded Grants:**

1. H. Liu (PI), J. Holter Chakrabarty, and J.P. Havlicek, "Development of a Predictive Imaging Model for Prediction of Relapse Following Allogeneic Bone Marrow Transplantation," University of Oklahoma Bioengineering Center seed funding for interdisciplinary Research, $47,172. 12/15/13-12/14/14.

2. P.S. Harvey, R.W. Floyd, L. Gruenwald, J.P. Havlicek, Y. Li, and J.-S. Pei, "Safer School Buildings for Wind and Earthquakes: A Multidisciplinary Approach," University of Oklahoma College of Engineering seed funding for interdisciplinary Research, $10,000. 6/1/15-5/31/16.

Total Internal Funding: $57,172

► Invited Lectures:

1. J.P. Havlicek, "Designing Perceptually-Based Image Filters in the Modulation Domain," School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, May 3, 2011.
2. J.P. Havlicek, "Designing Perceptually-Based Image Filters in the Modulation Domain," Dept. Automation, Shanghai Jiao Tong University, Shanghai, China, September 25, 2010.
3. J.P. Havlicek, "Infrared Target Tracking in the Modulation Domain," Dept. Electrical & Computer Engineering, University of New Mexico, Albuquerque, NM, March 28, 2008.
4. J.P. Havlicek, "Multidimensional AM-FM Models with Image Processing Applications," School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN, November 22, 2002.
5. J.P. Havlicek, "Image Texture Retrieval Using Joint Amplitude-Frequency Modulation Models," Dept. Electrical and Computer Engineering, University of Virginia, Charlottesville, VA, July 22, 2002.
6. J.P. Havlicek, "Modulation Models for Image Processing and Machine Vision," Dept. Electrical Engineering, The Ohio State University, Columbus, OH, March 31, 1998.
7. J.P. Havlicek, "Modulation Models for Image Processing and Machine Vision," School of Electrical & Computer Engineering, Oklahoma State University, Stillwater, OK, March 26, 1998.
8. J.P. Havlicek, "Wideband Frequency Excursions in Multicomponent AM-FM Models," School of Electrical & Computer Engineering Colloquium Seminar Series, the University of Oklahoma, Norman, OK, September 18, 1997.
9. J.P. Havlicek, "AM-FM Image Models," IEEE Oklahoma City Section meeting, Oklahoma City, OK, March 20, 1997.
10. J.P. Havlicek, "AM-FM Image Models," School of Electrical & Computer Engineering, the University of Oklahoma, Norman, OK, July 18, 1996.
11. J.P. Havlicek, "AM-FM Image Analysis," Dept. Electrical Engineering, University of Washington, Seattle, WA, May 14, 1996.
12. J.P. Havlicek, "AM-FM Image Analysis," Dept. Electrical Engineering, The Pennsylvania State University, University Park, PA, April 22, 1996.

► Conference Presentations Without Proceedings:

1. H. Soltani, M. Muraleetharan, and J. Havlicek, "Effects of ground improvement zone dimensions on the modal characteristics of pile founded structures," *Engineering Mechanics Institute Conference 2019*, California Institute of Technology, Pasadena, CA, Jun. 18-21, 2019.
2. K.M. Williams, J.L. Holter Chakrabarty, L. Lindenberg, S. Adler, J. Gea-Banacloche, B. Blacklock-Schuver, F.T. Hakim, D.D. Hickstein, J.N. Kochenderfer, J. Wilder, T. Chinn, K. Kurdziel, S.M. Steinberg, H. Khuu, F.I. Lin, D.H. Fowler, D. Halverson, D.N. Avila, G. Selby, T.N. Taylor, J. Mann, J. Hsu, R.B. Epstein, S.L. Anderson, C.T. Nguyen, J. Havlicek, S. Li, T. Pham, T. Kraus, S.K. Vesely, PhD, S.Z. Pavletic, C.M. Bollard, P. Choyke, and R.E. Gress, "FLT imaging reveals kinetics and biology of engraftment after myeloablative HSCT," *56'th American Society of Hematology (ASH) Annual Meeting and Exposition*, San Francisco, CA, Dec. 6-9, 2014.
3. K.M. Williams, J.L. Holter, L. Lindenberg, S. Adler, J. Gea-Banacloche, B. Blacklock-Schuver, F. Hakim, D. Hickstein, J. Kochenderfer, J. Wilder, T. Chinn, K. Kurdziel, S. Steinberg, H. Khuu, D. Fowler, F.I. Lin, D. Halverson, D.N. Avila, G. Selby, S.L. Anderson, C.T. Nguyen, J.P. Havlicek, T.N. Taylor, J. Mann, J. Hsu, R. Epstein, S.K. Vesely, S. Li, T. Kraus, T. Pham, S.Z. Pavletic, C. Bollard, P. Choyke, and R.E. Gress, "Novel imaging reveals early engraftment and stem cell homing," *NIH Blood and Marrow Transplant*

(BMT) Consortium: 20th Anniversary Allogeneic Stem Cell Transplant at NIH Conference and Celebration, Washington, DC, Sep. 11-12, 2014.

Publications

A. Archival Journal Papers:

1. J.P. Wright, P.F. Tang, J.-S. Pei, F. Gay-Balmaz, and J.P. Havlicek, "On computing the analytic-signal backbone of the unforced harmonic oscillator," *J. Comput. Appl. Math.*, vol. 385, 16 pp., Article 113206, Mar. 15, 2021, published online Sep. 22, 2020.
2. E.D. Ross, S.S. Gupta, A.M. Adnan, T.L. Holden, J. Havlicek, and S. Radhakrishnan, "Neurophysiology of spontaneous facial expressions: II. Motor control of the right and left face is partially independent in adults," *Cortex*, vol. 111, pp. 164-182, Feb. 2019, published online Nov. 10, 2018.
3. K.M. Williams, J. Holter-Chakrabarty, L. Lindenberg, Q. Dong, S.K. Vesely, C.T. Nguyen, J.P. Havlicek, K. Kurdziel, J. Gea-Banacloche, F.I. Lin, D.N. Avila, G. Selby, C.G. Kanakry, S. Li, T. Scordino, S. Adler, C.M. Bollard, P. Choyke, and R.E. Gress, "Imaging of subclinical haemopoiesis after stem-cell transplantation in patients with haematological malignancies: A prospective pilot study," *The Lancet Haematology*, vol. 5, no. 1, pp. e44-e52, Jan. 2018, published online Dec. 13, 2017.
4. E.D. Ross, S.S. Gupta, A.M. Adnan, T.L. Holden, J. Havlicek, and S. Radhakrishnan, "Neurophysiology of spontaneous facial expressions: I. Motor control of the upper and lower face is behaviorally independent in adults," *Cortex*, vol. 76, pp. 28-42, Mar. 2016.
5. L. Yu, G. Fan, J. Gong, and J.P. Havlicek, "Joint infrared target recognition and segmentation using a shape manifold-aware level set," *Sensors*, special issue on sensors in new road vehicles, vol. 15, no. 5, pp. 10118-10145, Apr. 2015.
6. J. Gong, G. Fan, L. Yu, J.P. Havlicek, D. Chen, and N. Fan, "Joint target tracking, recognition and segmentation for infrared imagery using a shape manifold-based level set," *Sensors*, vol. 14, no. 6, pp. 10124-10145, Jun. 2014.
7. J. Gong, G. Fan, L. Yu, J.P. Havlicek, D. Chen, and N. Fan, "Joint view-identity manifold for infrared target tracking and recognition," *Comput. Vision, Image Understand.*, vol. 118, pp. 211-224, Jan. 2014.
8. N. Mould and J.P. Havlicek, "Neighborhood-level learning techniques for nonparametric scene models," *Signal, Image, Video Process.*, vol. 8, no. 6, pp. 1015-1029, Sep. 2014. doi: 10.1007/s11760-013-0571-x.
9. V. Venkataraman, G. Fan, J.P. Havlicek, X. Fan, Y. Zhai, and M. Yeary, "Adaptive Kalman filtering for histogram-based appearance learning in infrared imagery," *IEEE Trans. Image Process.*, vol. 21, no. 11, pp. 4622-4635, Nov. 2012.
10. V. Venkataraman, G. Fan, L. Yu, X. Zhang, W. Liu, and J.P. Havlicek, "Automated target tracking and recognition using coupled view and identity manifolds for shape representation," *EURASIP J. Advances Signal Process.*, v. 2011, doi: 10.1186/1687-6180-2011-124, 17 pp., Dec. 7, 2011.
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Joseph P. Havlicek is Gerald Tuma Presidential Professor of Electrical & Computer Engineering and Williams Companies Foundation Presidential Professor of Electrical & Computer Engineering at the University of Oklahoma. He is director and co-founder of the OU Center for Intelligent Transportation Systems. He is also a full member of the OU Institute for Biomedical Engineering, Science, and Technology. He received the B.S. degree in 1986 and the M.S. degree in 1988 in Electrical Engineering from Virginia Tech, Blacksburg, VA, and the Ph.D. degree in Electrical and Computer Engineering in 1996 from the University of Texas at Austin.

From 1984 to 1987, he was with Management Systems Laboratories, Blacksburg, VA, as a software engineer developing decision support software for US DoE nuclear materials management. From 1987 to 1989, he was affiliated with SFA, Inc., Landover, MD, and from 1987 to 1997 he was with the Naval Research Laboratory, Washington, DC, where he worked on infrared missile warning receivers for Navy aircraft, including the Navy's first two-color infrared system. In 1990 he was a recipient of the Department of the Navy Award of Merit for Group Achievement for this work which led to production combat systems deployed in both Afghanistan and Iraq. Throughout 1993 he was a programmer–analyst with Ralph Kirkley Associates, Austin, TX, developing image CODECS on-site in the multimedia division of IBM, Austin. He joined the University of Oklahoma as an assistant professor in January, 1997, where he currently holds the rank of Professor and the Gerald Tuma and Williams Companies Foundation Presidential Professorships. His research interests include signal, image, and video processing, modulation domain signal processing, target tracking, medical imaging, and intelligent transportation systems. He is author or co-author of over 130 scholarly publications in these areas. Since joining the University of Oklahoma in 1997, he has been PI or co-PI on more than 110 externally funded grants and contracts totaling over $27M.

Dr. Havlicek is a senior member of the IEEE. He served as a Senior Area Editor of IEEE Transactions on Image Processing from Nov. 2015 through Feb. 2018. Prior to that, he served as an Associate Editor for five years. He is also a past Associate Editor of IEEE Transactions on Industrial Informatics. He served as Publications Chair on the Organizing Committee of the 2007 IEEE International Conference on Image Processing (ICIP), as a Technical Area Chair for ICIP 2012 and ICIP 2013, and as a Technical Area Chair for the IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) in 2012 and 2013. He has been a member of the Technical Program Committee and Organizing Committee of the IEEE Southwest Symposium on Image Analysis and Interpretation since 1998, serving as General Co-Chair (2010), Technical Program Co-Chair (2004, 2006, 2008), and Publicity Chair (2000, 2002). He was chairman of the Electrical and Computer Engineering Graduate Studies Committee at the University of Oklahoma from 2008 to 2013 and chairman of the Undergraduate Studies Committee from 2021 to 2023.

He was recipient of the University of Oklahoma College of Engineering Outstanding Faculty Advisor Award in 2006, the University of Oklahoma College of Engineering Brandon H. Griffith Faculty Award in 2003, the University of Oklahoma IEEE Favorite Instructor Award in 1998 and 2000, and the 1992 University of Texas Engineering Foundation Award for Exemplary Engineering Teaching while Pursuing a Graduate Degree. Dr. Havlicek is a member of Tau Beta Pi, Phi Kappa Phi, and Eta Kappa Nu.

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